



UNIVERSITY OF SOUTH FLORIDA MORSANI COLLEGE OF MEDICINE

Division of Allergy and Immunology
Department of Internal Medicine
Joy McCann Culverhouse Airway Disease Research Center
and The James A. Haley V.A. Medical Center
Tampa, Florida

2017 Annual Report

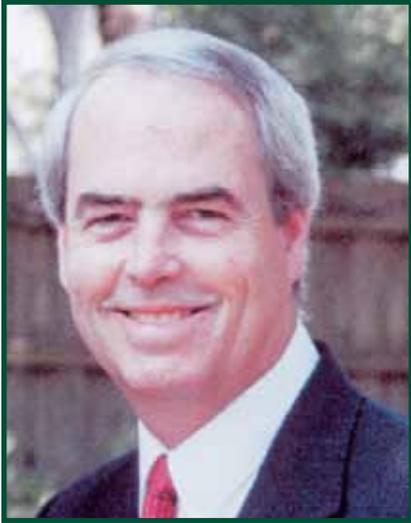


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<http://health.usf.edu/medicine/internalmedicine/allergy/index.htm>



Dedicated to:



**The late John J. Stablein, III, M.D.
(1952 - 2002)
Faculty Member
Division of Allergy and Immunology
Department of Internal Medicine
University of South Florida
Morsani College of Medicine
Tampa, Florida**

and



**The late Walter L. Trudeau, III, M.S.
(1952 - 1999)
Research Associate
Division of Allergy and Immunology,
Department of Internal Medicine
University of South Florida
Morsani College of Medicine
Tampa, Florida**

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MORSANI COLLEGE OF MEDICINE

UNIVERSITY OF SOUTH FLORIDA

DIVISION OF ALLERGY AND CLINICAL IMMUNOLOGY (A/I)
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FACULTY

RICHARD F. LOCKEY, M.D.
Professor; Medicine, Pediatrics & Public Health
Division Director, Internal Medicine A/I
Joy McCann Culverhouse Chair

JOHN W. SLEASMAN, M.D.
Professor; Pediatrics & Medicine
Chief, Pediatric A/I & Rheumatology

NOORBIBI K. DAY-GOOD, Ph.D.
Professor Emer; Pediatrics, Medicine & Public Health

ROGER W. FOX, M.D.
Professor; Medicine, Pediatrics & Public Health

DENNIS K. LEDFORD, M.D.
Professor; Medicine & Pediatrics
Mabel & Ellsworth Simmons Professor

GARY LITMAN, Ph.D.
Professor; Pediatrics & Medicine

MARK C. GLAUM, M.D., Ph.D.
Associate Professor; Medicine & Pediatrics

MITCHEL J. SELEZNICK, M.D.
Associate Professor; Medicine

SANDRA G. GOMPF, M.D.
Associate Professor; Medicine

NARASAIH KOLLIPUTI, Ph.D.
Associate Professor; Medicine & Pediatrics

MICHAEL TENG, Ph.D.
Associate Professor; Medicine & Pediatrics

MARK BALLOW, M.D.
Professor; Pediatrics & Medicine

PANIDA SRIARON, M.D.
Assistant Professor; Pediatrics & Medicine

JENNIFER LEIDING, M.D.
Assistant Professor; Pediatrics & Medicine

JIA-WANG WANG, Ph.D.
Assistant Professor; Medicine & Pediatrics

GLENN WHELAN, Pharm.D.
Clinical Assistant Professor; Medicine

ENRIQUE FERNANDEZ-CALDAS, Ph.D.
Clinical Professor; Medicine

MANDEL SHER, M.D.
Professor; Pediatrics & Medicine

NATHAN TANG, M.D.
Associate Professor; Pediatrics & Medicine

MONROE J. KING, D.O.
Adjunct Clinical Associate Professor; Medicine

BRETT E. STANALAND, M.D.
Clinical Associate Professor; Medicine

G. EDWARD STEWART II, M.D.
Clinical Associate Professor; Medicine

HUGH H. WINDOM, M.D.
Clinical Associate Professor; Medicine

BLANCA CAMARETTI-MERCADO, Ph.D.
Ass't Professor; Personalized Med & Medicine

ROSA CODINA, Ph.D.
Clinical Assistant Professor; Medicine

MARY L. JELKS, M.D.
Clinical Assistant Professor; Medicine

RONALD T. PURCELL, M.D.
Clinical Assistant Professor; Medicine

November 21, 2017

I. GREETINGS!

The late Samuel C. Bukantz, M.D., founded the Division of Allergy and Immunology, Department of Internal Medicine, at the University of South Florida Morsani College of Medicine, in 1972. Richard F. Lockey, M.D. succeeded Dr. Bukantz in 1983 and is the current Director of the Division. Mrs. Joy McCann Culverhouse endowed the Division in 1997 and The Joy McCann Culverhouse Airway Disease Research Center was dedicated in February 1998. In 1998, Mabel and Ellsworth Simmons endowed the Division with a grant for education and research. The Division was selected as a World Allergy Organization (WAO) Center of Excellence for the 2016-2019 term, one of ten throughout the world.

The goals of the Division are: first, to provide care to patients with allergic and immunologic diseases at the University of South Florida Morsani College of Medicine, Tampa General Hospital, James A. Haley V.A. Medical Center, All Children's Hospital, and H. Lee Moffitt Cancer Center; second, to train students, residents, and fellows in the subspecialty of allergy and immunology; and third, to conduct basic and clinical research in allergy, asthma, and immunology.

Individuals interested in collaborating with members of the Division may contact Richard F. Lockey, M.D. or any faculty member at (813) 972-7631 (email: rlockey@health.usf.edu).

Jolan Walter, M.D., Ph.D., Associate Professor of Pediatrics, Division Chief, Pediatric Allergy & Immunology, can be contacted at (813) 259-8705 (email: jolanwalter@health.usf.edu).

Richard F. Lockey, MD
Distinguished University Health Professor
Professor of Medicine, Pediatrics & Public Health
Joy McCann Culverhouse Chair of Allergy and Immunology
Director, Division of Allergy and Immunology
University of South Florida Morsani College of Medicine
Department of Internal Medicine



Front Row (L to R): Catherine Renee Smith, Rebecca Carter Muncey, Peggy Lee Hales, Thomas B. Casale, MD, Richard F. Lockey, MD, Roger W. Fox, MD, Dennis K. Ledford, MD

Back Row (L to R): Seong H. Cho, MD, Narasaiah Kolliputi, PhD, Amber Pepper, MD, Shiven Patel, MD, Michelle Twitmyer, Tara Saco, MD, Kirk Shepard, MD, Emma Westermann-Clark, MD, Michael N. Teng, PhD, Tiffani Kaage, Mark C. Glaum, MD, PhD, Mason Breitzig, Helena Hernández-Cuervo, Blanca Camoretti-Mercado, PhD.

Missing in picture: Juan Carlos Cardet-Guisasola, MD, Lakshmi Galam, PhD, Geeta Gehi, Nicole McCray, PhD, Ramani Soundararajan, PhD, Farnaz Tabatabaian, MD.

Picture taken: Fall, 2017

II. FACULTY

Core Faculty

Richard F. Lockey, M.D., University Distinguished Health Professor; Professor of Medicine, Pediatrics, and Public Health; Division Director; Joy McCann Culverhouse Chair of Allergy and Immunology

Thomas B. Casale, M.D., Professor of Medicine and Pediatrics

Roger W. Fox, M.D., Professor of Medicine, Pediatrics and Public Health

Dennis K. Ledford, M.D., Professor of Medicine and Pediatrics; Mabel & Ellsworth Simmons Professor

Seong H. Cho, M.D., Associate Professor of Medicine and Pediatrics

Mark C. Glaum, M.D., Ph.D., Associate Professor of Medicine and Pediatrics

Narasaiah Kolliputi, Ph.D., Associate Professor of Medicine and Pediatrics

Michael Teng, Ph.D., Associate Professor of Medicine and Pediatrics

Blanca Camoretti-Mercado, Ph.D., Assistant Professor of Medicine and Pediatrics

Juan Carlos Cardet-Guisasola, M.D., Assistant Professor of Medicine

Lakshmi Galam, Ph.D., Assistant Professor of Medicine

Farnaz Tabatabaian, M.D., Assistant Professor of Medicine and Pediatrics

Clinical Faculty

Enrique Fernandez-Caldas, Ph.D., Clinical Professor of Medicine

Donald C. Lanza, M.D., Clinical Professor of Medicine

Hugh H. Windom, M.D., Clinical Professor of Medicine

Brett E. Stanaland, M.D., Clinical Associate Professor of Medicine

G. Edward Stewart II, M.D., Clinical Associate Professor of Medicine

Rosa Codina, Ph.D., Clinical Associate Professor of Medicine

Jennifer E. Ferguson, D.O., Clinical Assistant Professor of Medicine

Thomas L. Johnson, II, M.D., Clinical Assistant Professor of Medicine

Alla Solyar, M.D., Clinical Assistant Professor of Medicine

Jia-Wang Wang, Ph.D., Clinical Assistant Professor of Medicine

Joint Faculty

Jolan Walter, M.D., Ph.D., Robert A. Good Endowed Chair in Immunology; Associate Professor of Pediatrics & Medicine; Chief, Pediatrics Division of Allergy & Immunology

Mark Ballow, M.D., Professor of Pediatrics and Medicine

Noorbibi K. Day-Good, Ph.D., Professor Emeritus; Pediatrics, Medicine & Public Health

Gary W. Litman, Ph.D., Professor of Pediatrics and Medicine; University Distinguished Health Professor; Andrew and Ann Hines Chair in Pediatrics

Mandel R. Sher, M.D., Professor of Pediatrics and Medicine

Stephen Kornfeld, M.D., Associate Professor of Pediatrics and Medicine

Panida Sriaroon, M.D., Associate Professor of Pediatrics and Medicine

Nathan Tang, M.D., Associate Professor of Pediatrics and Medicine

Jennifer Leiding, M.D., Associate Professor of Pediatrics and Medicine

Richard F. Lockey, M.D., M.S.

Dr. Richard F. Lockey received his B.S. degree from Haverford College, Haverford, Pennsylvania; M.D. from Temple University, Philadelphia, Pennsylvania (Alpha Omega Alpha); M.S. from the University of Michigan in Ann Arbor, Michigan where he trained in Internal Medicine and Allergy/Immunology (A/I) and was a Major and Chief of A/I at Carswell Air Force Base, Fort Worth, Texas, from 1970-1972. He received a medal in 2000 from the Florida Academy of Sciences, Tallahassee, Florida, for his dedication and work to improve the health and well-being of the community and citizens of Florida. He was also the recipient of the Southern Medical Society, Dr. Robert D. and Alma W. Moreton Original Research Award in 2012. The



American Academy of Allergy Asthma and Immunology presented him with a Special Recognition Award in 1993, Distinguished Service Award in 1999, and Distinguished Clinician Award in 2008. He has the honor of authoring, co-authoring or editing over 700 publications and 35 books or monographs with colleagues and has lectured on numerous occasions nationally and internationally. He is the co-editor of two books and an encyclopedia of allergy/immunology, with Dennis K. Ledford, MD, published in 2014: *Asthma, Comorbidities, Co-Existing Conditions, and Differential Diagnoses*, Oxford University Press; *Allergens and Allergen Immunotherapy: Subcutaneous, Sublingual and Oral*, 5th edition, CRC Press/Taylor & Francis Group; and *Encyclopedia of Infection and Immunity*, Springer, Inc. Professional honors include President of the American Academy of Allergy Asthma and Immunology (1992), past Director of the American Board of Allergy and Immunology (1993-1998) and President of the World Allergy Organization (2010-2012). He has served as co-editor or participant of two WHO reports and served on many journal editorial boards. He received the World Allergy Organization Gold Medal Award in 2015.

Over 100 physician specialists and 55 international post-graduate PhDs or MDs in basic and clinical research and medicine, many of whom have assumed leadership positions in medicine throughout the world, have been trained in the Division. The Division's staff consists of 8 clinicians, 4 basic scientists, and approximately 60 other healthcare professionals including physicians and support and laboratory personnel.

Areas of expertise and research: insect allergy; allergen immunotherapy; asthma; inflammatory lung diseases; pulmonary fibrosis; co-morbid conditions of asthma; and sleep apnea.

Thomas B. Casale, M.D.

Before joining USF in October 2013, as Professor of Medicine and Chief of Clinical and Translational Research, Dr. Thomas Casale was Professor of Medicine and Medical Microbiology and Immunology and Chief of Allergy/Immunology at Creighton University, Omaha, Nebraska. He did an allergy/immunology fellowship at the National Institutes of Health, Bethesda, MD, where he was chief medical staff fellow. From 1984 to 1996 he was at the University of Iowa where he attained the rank of Professor of Medicine and Director of Allergy/Immunology.



Dr. Casale is a member of the American Thoracic Society and served on their Board of Directors; American Society for Clinical Investigation; and a Fellow of the American College of Physicians and both the American College and American Academy of Allergy Asthma and Immunology. He is a Past President of the American Academy of Allergy Asthma and Immunology and was the Executive Vice President for ten years until 2018. He is a past member of the Board of Directors of the World Allergy Organization. He also served on the American Board of Allergy and Immunology and was Chair from 2005-2006.

Dr. Casale's clinical and basic research interests are directed toward the determination and treatment of the pathophysiologic mechanisms involved in respiratory and allergic diseases. He has published over 375 scientific papers, reviews and chapters on these topics. He is the principal investigator of USF's American Lung Association Airways Clinical Research Center. His research is funded by the National Institutes of Health, the American Lung Association, the Patient Centered Outcomes Research Institute, the American Academy of Allergy Asthma and Immunology, the Florida Department of Health, and various industry sources.

Roger W. Fox, M.D.

Dr. Roger W. Fox completed his 3 years of internal medicine and 2 years in allergy and immunology at the University of South Florida, Morsani College of Medicine, Tampa, FL after receiving his medical degree from St. Louis University School of Medicine. He joined the Division's faculty in July, 1980. He is a Fellow of the American College of Physicians and the American Academy of Allergy Asthma and Immunology.



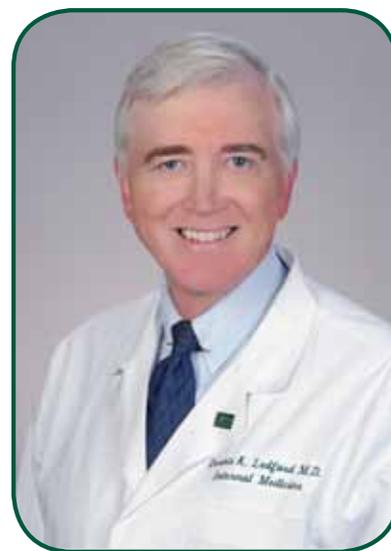
He has been elected to "The Best Doctors in America" for the past decade and serves as the Director of Education of the allergy/immunology fellowship training program. He has helped train over 90 physicians in the specialty and has published extensively, and has presented at local, national and international medical meetings. He has served on various boards, including the Hillsborough County Medical Association, the Florida Allergy Asthma and Immunology Society, of which he is a past-president, and numerous committees in the American Academy of Allergy Asthma and Immunology.

Dr. Fox enjoys being a clinician and mentor and in that capacity, sees patients at the University of South Florida Morsani Medical Clinics, the Veterans' Administration Hospital Allergy Clinic, as well as the other clinics affiliated with the University of South Florida. Dr. Fox is a volunteer attending physician at the James A. Haley Tampa VA Hospital, having served as an attending physician for over 30 years, and has staff privileges at Tampa General, Moffitt Cancer, and Florida Hospitals.

His research interests include vocal cord dysfunction, acute and chronic urticaria and angioedema, comorbid conditions of asthma, allergic drug reactions and atopic eczema.

Dennis K. Ledford, M.D.

Dr. Dennis Ledford received his medical degree from the University of Tennessee Center for Health Sciences, Nashville, Tennessee. He completed his internal medicine residency there and served as chief medical resident for Dr. Gene Stollerman, M.D., Chairman of Internal Medicine at this same university. A fellowship in rheumatology and immunology followed at New York University and Bellevue Hospital in New York as well as a fellowship in allergy and immunology at the University of South Florida. He joined the faculty at USF Morsani College of Medicine and achieved the rank of professor of medicine in 2000.



Local and regional activities include past service as President of the USF Medical Faculty of the Morsani College of Medicine and President of the Florida Allergy Asthma and Immunology Society. He is current Head of the Allergy/Immunology Section, Florida Hospital and the James A. Haley VA Hospital, Tampa, FL. National contributions include prior service as President of the American Academy of Allergy Asthma and Immunology, an associate editor of the *Journal of Allergy and Clinical Immunology*, and chair of the Steering Committee for the American Academy of Allergy Asthma and Immunology Education and Research Trust Fund (AAAAI Foundation). He also served as Co-Chair of the American Council of Graduate Medical Education (ACGME), Allergy/Immunology Residency Review Committee and Director of the American Board of Allergy and Immunology. He currently serves on the editorial board of the *Annals of Allergy Asthma and Immunology*.

Clinical responsibilities and student and resident teaching are combined with research interests in severe glucocorticoid-dependent asthma and biologic therapy of allergic disease.

Seong Cho, M.D.

Dr. Seong Cho received his M.D. from the Kyung-Hee University, Seoul, Korea in February, 1989. After completing his ear nose and throat (ENT) residency at Kyung Hee University Medical Center in Seoul, Korea, he pursued his postdoctoral research in 1997 in the Division of Pediatric Allergy and Immunology at University of California Los Angeles (UCLA), California. To achieve his goal of becoming a physician scientist in allergy and immunology in the U.S.A., he completed his residency training in internal medicine at the University of Tennessee and fellowship in the specialty of allergy and immunology, Department of Medicine, at Northwestern University, Chicago, IL. Dr. Cho then became an assistant professor at Northwestern University where he continued his academic career. He joined the Division of Allergy and Immunology, University of South Florida Morsani College of Medicine, February, 2015, as an assistant professor of medicine and was then promoted to Associate Professor, August, 2016.



Dr. Cho is board certified in internal medicine and allergy/immunology (USA) and otolaryngology (Korea). During his fellowship in allergy/immunology, he received the 2008 American College of Allergy Asthma and Immunology (ACAAI) First Place Clemens von Pirquet Award and the 2009 American Academy of Allergy Asthma and Immunology (AAAAI) GSK Fellows Career development Award. He has also received a variety of different research awards including awards from the American Heart Association (AHA) and National Institutes of Health (NIH).

Other than his research interest in asthma and chronic rhinosinusitis /nasal polyps, he is interested in mast cell biology and mast cell related disorders including the mast cell activation syndrome. He is widely published and he and his colleague discovered that human mast cells are a novel and major source of plasminogen activator inhibitor-1 (PAI-1), that mast cell-derived PAI-1 plays an important role in asthma, that it also plays a role in virus-induced asthma exacerbation and that PAI-1 inhibitor, a small molecule, reduces airway inflammation and remodeling in asthma. It is hoped that his research on PAI-1 could lead to a discovery of a novel biomarker of airway remodeling and cell- or gene-specific personalized therapeutic interventions for subjects with severe asthma. One other area of investigation is the age-related differences in the pathogenesis of chronic rhinosinusitis and nasal polyps for which he has a K23 grant support from the NIH.

Mark C. Glaum, M.D., Ph.D.

Dr. Mark Glaum received a B.A. in psychology from Fordham University in New York, NY. Following graduation, he returned to his home town of Philadelphia, PA, and earned a Master of Science in Physiology from the School of Graduate Studies at Hahnemann University. Dr. Glaum continued on at Hahnemann, where he was awarded an MD degree and a PhD in immunology. He completed internship and residency in internal medicine at Hahnemann Hospital and then pursued fellowship training in allergy and immunology at the University of Pennsylvania, where he received the Stanley E. Bradley Award for Bench Research in Internal Medicine. Dr. Glaum holds the rank of associate professor of medicine and pediatrics at the Morsani College of Medicine.



Dr. Glaum holds the rank of associate professor of medicine and pediatrics at the Morsani College of Medicine.

Dr. Glaum is board certified in internal medicine and allergy and immunology, and he is a fellow of the American Academy of Allergy Asthma and Immunology (AAAAI). He has been elected to “Top Doctors in America” for the last ten years and enjoys teaching medical students, internal medicine residents and allergy/immunology fellows. He became a staff member of the James A. Haley Veterans’ Hospital in 2016 where he sees patients. He also has staff privileges at Tampa General, Moffitt Cancer, and Florida Hospital Fletcher and Oak Hill Hospitals. He has served on the boards of the Allergy and Asthma Foundation of America and Hillsborough County Medical Society and is a past Chair of Rhinosinusitis and Ocular Allergy Interest Section of the American Academy of Allergy Asthma and Immunology. Dr. Glaum is the Director and Co-PI of the USF Food Allergy Research and Education Foundation Clinical Center of Excellence.

Dr. Glaum’s research interests include food allergy, chronic rhinosinusitis, nasal polyps, mast cell biology, pollen identification, and devising new biological techniques using PCR to measure aeroallergens.

Narasaiah Kolliputi, Ph.D.

Dr. Narasaiah Kolliputi is an Associate Professor and Division Director of Research Education for the Division of Allergy and Immunology, Department of Internal Medicine, at the USF Morsani College of Medicine, Tampa, FL. He received his postdoctoral training at Massachusetts General Hospital, Harvard Medical School, Boston, MA. Prior to that time, he received his BS in biology and chemistry in 1997 followed by an MS in biochemistry in 1999 at Sri Venkateswara University, Tirupati, India. He then completed his PhD in 2004 in biochemistry at Osmania University, Hyderabad, India.



Dr. Kolliputi has published 65 papers, including a paper in *Circulation Research and Immunology*. He serves as a grant reviewer for the National Institutes of Health, VA Merit Grants, USA Department of Defense and the American Heart Association. He is an associate editor for *Frontiers in Pharmacology*, *Frontiers in Physiology* and *Frontiers in Genetics* and is a guest associate editor for *Frontiers in Mitochondrial Physiology*. He is an editorial board member for *Translational Medicine, Virology & Mycology* and *Journal of Biocatalysis & Biotransformation*. Dr. Kolliputi's research is funded by an NIH R01 and an American Heart Association Scientist Developmental grant.

He is working on translational strategies to attenuate oxidative stress mediated acute lung injury (ALI), pulmonary fibrosis and pulmonary arterial hypertension.

Michael Teng, Ph.D.

Dr. Michael Teng received his Ph.D. in immunology from the University of Chicago in 1993. He trained as a postdoctoral fellow studying viral pathogenesis at The Scripps Research Institute in La Jolla, CA. Subsequently, he became a research fellow at the National Institute of Allergy and Infectious Diseases, investigating the molecular biology of respiratory syncytial virus (RSV) and RSV vaccine development. In 2002, he accepted a faculty appointment in the Department of Biochemistry and Molecular Biology at the Pennsylvania State University, University Park, PA, where his laboratory continued studies on RSV pathogenesis.



Dr. Teng joined the faculty of the Division of Allergy and Immunology at USF Morsani College of Medicine (MCOM) in 2010 and is director of basic research in the Division. He holds joint appointments in the Departments of Pediatrics, Molecular Medicine, and Pharmaceutical Sciences (College of Pharmacy). Dr. Teng is currently Associate Dean of Ph.D. and Postdoctoral Programs in MCOM and is the Past-President of the USF Faculty Senate. He serves as a grant reviewer for the National Institutes of Health and the American Heart Association. His past and present research funding includes grants from the National Institutes of Health, the American Heart Association, Florida Department of Health, and contracts with pharmaceutical companies.

Dr. Teng's research focuses on the host-virus interactions important for RSV pathogenesis. In particular, he is interested in the mechanisms by which RSV inhibits innate immune responses to enhance viral replication. Understanding the interplay between RSV proteins and innate immunity may lead to the development of more immunogenic RSV vaccine candidates. Additionally, Dr. Teng studies the interactions between cellular signal transduction machinery and viral proteins, with a view to discovering potential targets for antiviral therapy.

Blanca Camoretti-Mercado, Ph.D.

Blanca Camoretti-Mercado is Assistant Professor and Division Director of Translational Research. She received her Ph.D. degree from the University of Buenos Aires, Argentina, and conducted a post-doctoral fellowship at the University of Chicago. She joined the faculty of the Section of Cardiology and later the Section of Pulmonary and Critical Care in the Department of Medicine at the University of Chicago. In November, 2012 she was recruited to the University of South Florida. A recipient of Diversity, Mentor, and Teacher awards, she is an active member of the American Thoracic Society



(ATS), and current chair of the Assembly on Respiratory Structure and Function. She is a member of the ATS Board of Directors and the Planning Committee. She served as chair of the ATS Programming and Nominating Committees, was a member of the International Lung Health and the Members in Training and Transition Committees, and is the founding member of the Science and Innovation Center. She organized and chaired numerous symposia and poster discussions, and presented her studies in academic and non-academic institutions worldwide. She chaired the Women Lung Conference of the American Lung Association (ALA, Chicago ATS Chapter), has been a reviewer in the National Institute of Health (NIH) and American Heart Association (AHA) study sections, and is on the editorial board of various journals.

Dr. Camoretti-Mercado has published over 50 original scientific, review and editorial articles, and book chapters. Her research has been funded by NIH, AHA, ALA, and the LAM and the Blowitz-Bridgeway Foundations; she also received the inaugural award from the ATS Research Foundation.

Her translational investigations focus on the molecular bases, cellular signaling, and genomic determinants of lung dysfunction. She cloned several genes of the contractile machinery, established the role and pathways of TGF β action on gene expression and growth in airway smooth muscle, and created pre-clinical models of airway remodeling and hyperresponsiveness. She studies the smooth muscle as key effector of contraction and relaxation, source of inflammatory mediators, contributor to asthma, COPD and LAM diseases, and as a target for drug discovery.

Juan Carlos Cardet-Guisasola, M.D.

Juan Carlos Cardet, MD, MPH received his BS degree from Harvard University, Cambridge, Massachusetts in 2004; medical degree from the University of Puerto Rico, San Juan, Puerto Rico in 2008; and master in public health degree from Harvard University, Boston, Massachusetts in 2017. He completed his Internal Medicine training at the University of Connecticut in 2011, where he was given the Maxwell O. Phelps, M.D. award for scholarship, and the Hartford Hospital Outpatient Clinic resident of the year award. He completed his Allergy and Immunology (A/I) training at Brigham and Women's Hospital/Harvard University in 2014. He served as Instructor in Medicine at Harvard Medical School, and as the Assistant Director of the Asthma Research Center at Brigham and Women's Hospital from July 2014 until June 2017.



Dr. Cardet is an Assistant Professor in the Department of Internal Medicine. He specializes in the treatment of patients with asthma, chronic urticaria, chronic rhinitis, and other allergic and immunologic diseases. He is board certified in Internal Medicine and in A/I, and he is a fellow of the American Academy of Allergy Asthma and Immunology (AAAAI). He enjoys working with medical students, residents, and A/I fellows. His translational research focuses on understanding the pathophysiology of severe asthma with the aim of identifying novel therapies. He was awarded in 2017 a K23 grant by the National Institute of Allergy and Infectious Diseases (NIAID) so that he can pursue this endeavor. He is an investigator with the AsthmaNet, Severe Asthma Research Program (SARP), and PRECISE NHLBI research networks, and with the Airways Clinical Research Centers of the American Lung Association. He is the co-chair of the executive committee of the Patient Centered Outcomes Research Institute (PCORI)-funded PRECISE trial. He is a member of the European Respiratory Society/American Thoracic Society taskforce on severe asthma.

Lakshmi Galam, Ph.D.

Dr. Lakshmi Galam is an Assistant Professor in the Division of Allergy and Immunology, Department of Internal Medicine, at the USF Morsani College of Medicine, Tampa, FL. She completed her postdoctoral training at Oklahoma State University, Stillwater, OK and Massachusetts General Hospital, Harvard Medical School, Boston, MA. Prior to that, she received her BS in biology and chemistry in 1996 followed by an MS in biotechnology in 1998 at Andhra University, Vishakapatnam, India. She then completed her PhD in Genetics at Osmania University, Hyderabad, India, in 2004.



Dr. Galam has published 18 papers, including in *Free Radic Biol Med*, *Oncotarget*, and *Am J Physiol Lung Cell Mol Physiol*. She has experience in development and use of automated liquid handling systems integrated with high throughput analytical platforms and extensive experience in handling multiple types of primary cells for FACS-based analysis and HTS hit validation studies. She is working on understanding the mechanisms of oxidative stress with respect to SOCS-1 protection against hyperoxic acute lung injury. She is funded by the American Heart Association.

Farnaz Tabatabaian, M.D.

Dr. Farnaz Tabatabaian received a B.S. in chemistry from Wright State University in Dayton, Oh. Following graduation, she earned her Master of Science in Anatomy and Physiology at Wright State University where she had direct exposure to research in innate immunology and inflammation. She pursued an M.D. degree at Northeast Ohio University of Medicine, Akron, OH. She completed her internship and residency in internal medicine at the Wexner Medical Center, Ohio State University, and then did her fellowship training in allergy and immunology at the University of South Florida, Pediatric Division of Allergy and Immunology, Johns Hopkins All Children's Hospital, St. Petersburg, FL.



Dr. Tabatabaian is board certified in internal medicine and allergy and immunology. She enjoys teaching medical students, internal medicine residents and allergy/immunology fellows. She sees patients in internal medicine and allergy/immunology at the University of South Florida Morsani College of Medicine. Dr. Tabatabaian is involved in implementing and creating a curriculum in high value education for residents to help devise a way to decrease healthcare costs while providing excellence in care.

Dr. Tabatabaian's research interests include adult immunology with a focus on common variable immunodeficiency, inflammation and asthma, and the impact of nicotine on the bronchi and epithelial cells.



Faculty conversing, L to R: Seong H. Cho, MD, Roger W. Fox, MD, Mark C. Glaum, MD, PhD
Dona Shearer, RN, Dennis K. Ledford, MD

DIVISION OF ALLERGY AND IMMUNOLOGY

FELLOWS-IN-TRAINING

Amber N. Pepper, M.D., 2nd year fellow, will graduate in June 2018. Dr. Pepper received her medical degree from the University of South Florida Morsani College of Medicine in Tampa, FL. She also completed her residency in Internal Medicine at the University of South Florida Morsani College of Medicine. Dr. Pepper has specific interests in asthma, allergic rhinitis, drug allergy, allergen immunotherapy, and medical education. Her long term goal is to promote patient and physician understanding of these conditions to improve medical outcomes.



L to R: Kirk Shepard, MD, Tara Saco, MD, Emma Westermann-Clark, MD, Shiven Patel, MD, Amber Pepper, MD

Emma Westermann-Clark, M.D., 2nd year fellow, will graduate in June 2018. Dr. Westermann received her medical degree from the University of Florida College of Medicine in Gainesville, Florida. She completed a Master's Degree in health policy at Harvard University. She did an Internal Medicine residency at the University of South Florida Morsani College of Medicine in Tampa, Florida. Her interests include food allergy, mucosal immunology, and immunodeficiency.

Shiven S Patel, M.D., 1st year fellow, will graduate in June 2019. Dr. Patel received his medical degree from the University of South Carolina School of Medicine in Columbia, South Carolina. He completed his residency in Internal Medicine at University of South Florida Morsani College of Medicine in Tampa, FL. His primary interests include asthma, allergic rhinitis, and food allergy.

Tara V. Saco, M.D., 1st year fellow, will graduate in June, 2019. Dr. Saco received her medical degree from the University of South Florida Morsani College of Medicine. She completed her residency in Internal Medicine at the University of South Florida Morsani College of Medicine. Her primary interests include asthma, anaphylaxis, mast cell disorders, primary immunodeficiencies, autoimmune disorders, urticaria and angioedema. She plans on pursuing a career in academics and clinical research, with a focus on asthma and mast cell disorders.

Kirk Shepard II, M.D., 1st year fellow, will graduate in June, 2019. Dr. Shepard received his medical degree from Chicago Medical School in North Chicago, Illinois. He completed residency in Internal Medicine at the Medical College of Wisconsin Affiliated Hospitals in Milwaukee, Wisconsin. Dr. Shepard's primary interests include asthma, food allergy, immunotherapy, and medical education.



Richard F. Lockey, MD, Division Director (2nd from left) and L to R: Peter Ricketti, DO, Adeb Bulkhi, MD, Sultan Alandijani, MD



Richard F. Lockey, MD with fellows and lab members at a poster presentation, AAAAI annual meeting, March 3 - 6, 2017, Atlanta, Georgia.

L to R: Alexander Czachor, Travis Herrin, Sanjay Mahendrasah, Richard F. Lockey, MD (Division Director), Adeb Bulkhi, MD, Bhumika Patel, MD, Sonia Joychan, MD, Johana Castro-Wagner, MD, Chen Lin, MD

RESEARCH STAFF MEMBERS

Jutaro Fukumoto, M.D., Ph.D., Research Associate

A Ra Jo, Ph.D., Biological Scientist

Ramani Soundararajan, Ph.D., Scientific Researcher

Kim Teng, Senior Biological Scientist

Alexander Czachor, BS, Laboratory Technician

Cayla Fezzie, BS, MS, Laboratory Technician

Matthew D. Alleyn, BS, Laboratory Administrator

Mason T. Breitzig, BS, Laboratory Administrator

STUDENTS AND VISITING RESEARCH SCHOLARS

M. Helena Hernandez Cuervo, MD, Graduate Student

Wenjing Li, MD, Visiting Research Scholar

Venkata R. Narala, PhD, Visiting Research Scholar

Michelle Kaminsky, Research Assistant/Student

Andrew McGill, Graduate Student

Sahebgowda Patil, Graduate Student

Irene John, Undergraduate Student

Sudarshan Krishnamurthy, Undergraduate Student

Isabelle Puppa, Undergraduate Student

Sngri Ross, Undergraduate Student

Smita Saji, Undergraduate Student

Sriraja Srinivas, Undergraduate Student

Bryann Tan, Undergraduate Student

ADMINISTRATIVE PERSONNEL

- * **Peggy Hales**, Program Assistant
- * **Rebecca Carter**, Administrative Secretary
- * **Geeta Gehi**, Administrative Secretary
- * Also James A. Haley Veterans' Hospital, Tampa, FL

DIVISION'S CLINICAL RESEARCH UNIT

Catherine Renee Smith, CMA, CCRC, Head Coordinator, Clinical Research Unit & American Lung Association Coordinator

Michelle Twitmyer, BS, CCRC, Clinical Research Coordinator

Tiffani Kaage, BS, CRC, Clinical Research Coordinator

Clinical Research Unit



Left to Right: Michelle Twitmyer, Catherine Renee Smith, Tiffani Kaage



III. JOY MCCANN CULVERHOUSE AIRWAY DISEASE RESEARCH CENTER

A. Basic Research Projects

1. Bitter taste receptors (TAS2R) as novel therapeutic targets for airway relaxation. (PI: Camoretti-Mercado)

Asthma and chronic obstructive pulmonary disease (COPD) are characterized by airflow limitation and elevation of bronchoconstricting and pro-inflammatory agents in the lung. Airway smooth muscle (ASM) is a major driver of airway narrowing. G-protein coupled receptors regulate ASM contraction and relaxation by increasing intracellular calcium or cAMP, respectively. Activation of the recently described TAS2Rs present on the ASM augments calcium but paradoxically, causes relaxation. A second, selective and more efficient TAS2R-stimulated pathway was discovered. It relaxes ASM through inhibition of calcium flux and cell depolarization caused by ASM bronchoconstrictors.

2. Drug discovery for airway smooth muscle (ASM) bitter taste receptor (TAS2R) agonists (PI: Camoretti-Mercado)

Medicines used for obstructive respiratory diseases are ineffective for a subset of asthmatics and COPD patients. TAS2Rs have emerged as potential therapeutic targets because their activation elevates calcium but inhibits ASM contraction and bronchoconstriction. Structurally different agonists can stimulate TAS2Rs. A library of over 29 million compounds was screened and seven identified that elevate calcium specifically in ASM cells. Of these, none blocked calcium elicited by histamine or bradykinin, but three inhibited the elevation of calcium caused by acetyl choline and angiotensin II. Both are expected to oppose cell contraction. Further investigation on structure-function relationships will advance the development of improved ASM relaxants with high potency and efficacy.

3. Bitter taste receptors (TAS2R) function in human airway smooth muscle cells is partially gustducin-Independent (PI: Camoretti-Mercado)

TAS2R stimulation in the tongue with a variety of bitter compounds promotes activation of the trimeric G-protein gustducin, a member of the G_i family. Mice harboring the α -gustducin subunit knockout partially conserved bitter taste function, mediated by $G_{\alpha_{i-1}}$. The requirement of α -gustducin in human ASM cells to stimulate and inhibit TAS2R action was investigated. $G_{\alpha_{i-1}}$, $G_{\alpha_{i-2}}$ and α -transducing-2 but not α -gustducin were detected in ASM cells. Pertussis toxin (PTX) was utilized to globally inactivate G_i proteins and it was discovered that TAS2R stimulation and inhibitory functions exhibit heterogeneous PTX sensitivity.

4. Airway responsiveness and remodeling in mice that overexpress S100A12 in smooth muscle (PI: Camoretti-Mercado)

S100A12 is a peptide found in increased quantities in the serum and sputum of patients with allergic asthma. It is proposed as a mediator of asthma pathology and may represent a biomarker for this disease. We generated transgenic mice expressing S100A12 in their smooth muscle and tested its role in mediating airway inflammation in an ovalbumin-allergic lung inflammation model. Compared to wild type sensitized and challenged animals, S100A12 mice showed reduced inflammation and eosinophilia, less mucus production, thinner ASM, and innate respiratory hyporesponsiveness. In vitro, S100A12 stimulation induced ASM cell apoptosis, which could at least partially explain the observed loss of the ASM layer and consequent broncho-protection in these mice.

5. Expression of active Akt1 promotes ASM cell hypertrophy (PI: Camoretti-Mercado)

Akt1 signaling is activated during ASM cell differentiation, concomitant with expression of the contractile phenotype and cell hypertrophy. We expressed a constitutionally active Akt1 mutant in ASM cells and observed induction of cell hypertrophy, augmented cell proliferation and expression of the marker, PCNA (proliferating cell nuclear antigen), with no selective up regulation of contractile proteins. We used human specimens from asthmatic and non-asthmatic donors and demonstrated activated Akt1 and its downstream target SP6 in smooth muscle bundles of asthmatics compared to non-asthmatics.

6. Role of plasminogen activator inhibitor-1 in the airway remodeling of asthma (PI: Cho).

The most highly induced gene in human mast cells (MC) cDNA microarray is plasminogen activator inhibitor-1 (PAI-1). PAI-1 promotes tissue remodeling in a mouse model of asthma and in patients with severe asthma. A low molecular weight PAI-1 inhibitor was found to reduce inflammation and fibrosis in a murine model of chronic asthma. A gain-of-function genetic polymorphism of PAI-1 is associated with the development of asthma and decreased lung function. Therefore, PAI-1 can be a potential target for asthma prevention and the treatment of severe asthma.

7. Role of mitochondrial aldehyde dehydrogenase 2 (ALDH2), 4-Hydroxy-2-nonenal (4-HNE), and BMI-1 in hyperoxia and mitochondrial dysregulation (PI: Kolliputi)

Reactive oxygen species (ROS) are known to give rise to several toxic byproducts including 4-HNE. ALDH2 is a well-known enzyme responsible for detoxifying molecules like 4-HNE, and could be critical for mitochondrial therapies. Notably, 4-HNE has been shown to form deleterious adducts with critical regulatory proteins including those important for mitochondrial fission and fusion. A new molecular activator, Alda-1, has been demonstrated to increase the efficacy of ALDH2 function during disease conditions. Therefore, it may be a potential therapeutic route for hyperoxia-induced acute lung injury and other pulmonary diseases involving mitochondrial dysregulation or ROS in general.

Additionally, a member of Polycomb Repressing Complex 1 named BMI-1, is known to acetylate chromatin and is highly expressed in some cancers. However, the properties and expression of BMI-1 in mitochondria remains unclear. It has been shown that downregulation of BMI-1 is associated with an increase in mitochondrial ROS production, alterations in ETC, and activation of the DNA Damage Response Pathway. It is possible that a better understanding of BMI-1 in the mitochondria will reveal if it is essential for survival during hyperoxic injury, and whether its overexpression in mice can be a novel therapeutic route.

8. Development and characterization of an animal model for idiopathic pulmonary fibrosis (PI: Kolliputi)

Idiopathic pulmonary fibrosis (IPF) is a chronic, progressive, fibrotic lung disease of unknown etiology. There is no animal model available that closely mimics the clinical and pathological features of IPF; this has hindered potential treatments for IPF. The goal of this project is to establish and characterize the clinical relevance of a new IPF animal model.

9. Exploring a novel epigenetic mechanism to understand the pathogenesis of pediatric eosinophilic esophagitis (PI: Kolliputi)

Eosinophilic esophagitis (EoE) is a significant public health problem that negatively impacts the quality of life for those affected. Current treatment includes symptomatic management with topical glucocorticoids, proton pump inhibitors, and elimination diets. Its pathogenesis is thought to have an environmental component, thus a better understanding of gene-environment interactions would significantly advance the field. We are exploring gene-environment interactions by analyzing the RNA epitome using RNA and DNA sequence information of EoE patients before and after treatment with individualized elimination diets. These analyses should provide information about the etiology of the disease and identify potential therapeutic targets.

10. Enhancing immunogenicity of RSV vaccines by altering NS1 function (PI: Teng)

This is part of a program project in collaboration with Dr. Mark Peeples (Nationwide Children's Hospital, Columbus, OH). The hypothesis that decreasing the ability of NS1 to inhibit interferon responses can enhance the immunogenicity of RSV vaccine candidates is being researched.

11. Structural determinants of NS2 for pathogenic functions (PI: Teng)

We have previously published that NS2 blocks interferon induction by binding to RIG-I. In addition NS2 appears to have additional functions associated with viral pathogenesis, including NFkB induction and STAT2 degradation. Trying to separate these activities by mutagenesis to understand how NS2 accomplishes each function is under investigation. The focus is on differentially altering the functions to develop an attenuated RSV vaccine candidate that maintains its immunogenicity.

12. Mechanism of RSV temperature sensitivity due to cis-acting sequences (PI: Teng)

Previous studies show that a single nucleotide change in the M2 transcription start sequence is sufficient to confer temperature sensitivity to recombinant RSV. The mechanism is being investigated by which this mutation affects RSV replication and transcription at non-permissive temperatures.

13. RSV matrix (M) protein trafficking and virus assembly (PI: Teng)

This is a long-term collaboration with Drs. David Jans and Reena Ghildyal (Monash University, Melbourne, AUS) to determine the role of M protein trafficking in RSV morphogenesis and the importance of nuclear translocation in M function.

14. Rapid identification of natural products with antiviral activity against Zika virus (PI: Teng)

This is a collaboration with Dr. Bill Baker (Chemistry) to identify compounds from Florida mangrove endophytic fungi that have antiviral effect against Zika virus.



USF Faculty awards:

L to R: Michael Teng, PhD, Excellence in Basic Research Award

Farnaz Tabatabaian, MD, Excellence in Patient Care Award

Thomas Casale, MD, Excellence in Clinical Research Award

B. Clinical Research Projects

1. Age-related pathogenesis of chronic rhinosinusitis and nasal polyps (PI: Cho)

Chronic rhinosinusitis (CRS) is one of the most common chronic diseases in the United States, with an estimated prevalence of 10% of the adult population. The prevalence of CRS sharply increases after age 50 such that those age 60 years and above are twice more likely to have CRS than adults age 19-39 years (1). A large cohort study in the US also shows that the incidence of CRS with nasal polyps (NP; CRSwNP) between ages 65-74 is almost two-fold higher compared with CRS without NP or control. We found that there is a significant decrease of eosinophilic inflammation, B lymphocyte activation and reduction of innate immune molecules with the aging process. We are investigating the age-related pathogenesis of CRS and nasal polyps using human endoscopic sinus surgery samples and a murine model of nasal polyps.

2. Effects of pine cone extract on IgE levels in patients with allergic rhinitis (PI: Ledford)

Pine cones and their aqueous extracts (PCE) were thought to have medicinal properties as far back as 2000 years ago in Japanese populations. Anecdotal reports suggest that the use of PCE improves allergic rhinitis symptoms; it significantly reduces serum IgE levels in mouse models. The purpose of this study is to determine if oral PCE extract administered in a double-blind fashion significantly reduces IgE levels in patients with evidence of perennial allergic rhinitis.

3. A comparison of microRNA in patients with allergic rhinitis and other forms of rhinitis (PI: Ledford)

The evaluation of rhinitis is often hindered by limited measures to assess the pathogenesis of mucosal disease. This project builds upon a prior study and involves sampling the nasal mucosa of the inferior turbinates in subjects with various forms of rhinitis diagnosed with currently available clinical procedures. The expression of microRNA will be related to the diagnosis and current therapy. The intent is to explore possible biologic pathways that are modulated in different forms of rhinitis as well as to assess the feasibility of using microRNA as a diagnostic tool.

4. Pollen and fungal spores counts and molecular quantification of outdoor allergens (PI: Glaum)

The Division houses the Pollen and Mold Counting Station for Tampa that has two devices adapted to collect pollen and fungal spores. One collector utilizes traditional methods, the other is adapted to collect pollen samples suitable for molecular analysis. The collectors are located on the roof of the MDC 19 Building at the Morsani College of Medicine. Allergen Science & Consulting performs pollen and spore counts once a week, as a courtesy to the Division. The purpose of this study is to determine if it is feasible to utilize molecular methods to quantify aeroallergen content from volumetric air samples. Pollen-specific genes will be identified, quantitated and compared to pollen levels obtained by established standard counting methods.

- 5. Effect of oxymetazoline hydrochloride in combination with nasal glucocorticoid on the apnea hypopnea index (AHI) (PI: Lockey)**

“Nocturnal Oxyhemoglobin Saturation, Snoring, and Sleep Quality in Subjects with Persistent Nasal Congestion. A Double Blinded, Placebo Control, Cross Over Prospective Trial” is designed to evaluate the effectiveness on the apnea/hypopnea index (AHI) of adding oxymetazoline to intranasal mometasone, and on other sleep parameters. The study will be carried out in subjects with persistent nasal congestion secondary to allergic or non-allergic rhinitis despite treatment with the highest recommended doses of intranasal mometasone.
- 6. Evaluation of calcium and vitamin D intake in children on inhaled or intranasal corticosteroids compared to normal children (PI: Lockey)**

The specific aims of this project are to evaluate the dietary calcium intake of asthmatic children (4-17 years) who are receiving long-term treatment with inhaled or intranasal corticosteroids versus healthy controls using a validated food frequency questionnaire.
- 7. Differences in mold counts from January 1995 to December 2011 (PI: Lockey)**

Allergic diseases are due to complex interactions between genetic and environmental factors. Airborne mold and pollens are known to trigger allergic respiratory disease in sensitive individuals. Yet little is known about possible changes as related to climate change in pollen and mold counts over the last 16 years. Daily pollen and fungal spores sample data between January 1995 to December 2010 are available for Sarasota, FL. These data will be compared to weather data for Sarasota available from the National Climatic Data Center. The objectives of this study are to determine if changes in pollen/mold counts can be correlated with climate changes.
- 8. FARE (Food Allergy Research & Education) Clinical Center of Excellence (Co-PI: Glaum)**

The Division of Allergy and Immunology has been approved as a Food Allergy Research & Education (FARE) Clinical Center of Excellence. FARE Clinical Network is a nationwide network of leading research and clinical care facilities with a common goal of ensuring that patients with food allergies have access to state-of-the-art diagnosis, treatment and research. Under FARE’s leadership and coordination, the Division will assist in developing the best practices for the care of patients with food allergies, serve as a site for clinical trials for the development of new therapeutics, and contribute to the development of a national food allergy patient registry and biorepository.

C. Clinical Research Unit (CRU)

The University of South Florida, Asthma, Allergy and Immunology CRU was established in 1977 to improve the treatment of patients who suffer from asthma, allergic and immunologic diseases.

The CRU provides quality research in a variety of clinical areas which include the following: allergic conjunctivitis; allergen immunotherapy; allergen skin testing; allergic rhinitis; asthma; atopic eczema; bronchitis, acute and chronic; contact dermatitis; chronic obstructive pulmonary disease; exercise induced asthma; headache (migraine and tension); hereditary angioedema; immunodeficiency diseases; insect allergy; intravenous immunoglobulin; nasal polyps; sinusitis, acute and chronic; temporomandibular joint disease; urticaria and vasomotor rhinitis.

Studies funded by pharmaceutical companies are conducted at the Division's CRU. The CRU is also a member of the American Lung Association's Asthma Clinical Research Center network, one of 19 centers throughout the United States.

Clinical Research Unit (CRU) Studies

ML29510 XTEND-CI (Xolair treatment efficacy of longer duration in chronic idiopathic urticaria): a phase IV, multicenter, randomized, double-blind, placebo-controlled study to evaluate the efficacy and safety of omalizumab through 48 weeks in patients with chronic idiopathic urticaria

Double-blind, randomized, placebo-controlled, parallel-group, phase IV study to evaluate the effect of acclidinium bromide on long-term cardiovascular safety and copd exacerbations in patients with moderate to very severe COPD (ASCENT COPD) LAS-MD-45 (D6560C00002)

MB29599 A prospective, single arm, longitudinal cohort study to assess biomarkers in real world patients with severe asthma

ROF-MD-07 A 52-week, double-blind, randomized, placebo-controlled, parallel-group study to evaluate the effect of roflumilast 500 µg on exacerbation rate in patients with chronic obstructive pulmonary disease (COPD) treated with a fixed-dose combination of long-acting beta agonist and inhaled corticosteroid (LABA/ICS)

A9111007 A randomized, double-blind, placebo-controlled, parallel group study to assess the efficacy, safety, and tolerability of pf-03715455 administered twice daily by inhalation for 12 weeks in subjects with persistent moderate to severe asthma who remain uncontrolled despite treatment with inhaled corticosteroids (ICS) and long-acting beta2 agonists (LABA)

OPN-FLU-NP-3101 A 16-week randomized, double-blind, placebo-controlled, parallel-group, multicenter study evaluating the efficacy and safety of intranasal administration of 100, 200, and 400 µg of fluticasone propionate twice a day (BID) using a novel bi-directional device in subjects with bilateral nasal polyposis followed by an 8-week open-label extension phase to assess safety

AF219-012 A 12-week study to assess the efficacy and safety of af-219 in subjects with treatment refractory chronic cough

ARC003 PEANUT allergy oral immunotherapy study of AR101 for desensitization in children and adults (PALISADE)

EFC13579 A randomized, double blind, placebo-controlled, parallel group study to evaluate the efficacy and safety of dupilumab in patients with persistent asthma

U-SS-M-AS312 A randomized, double-blind, double-dummy, placebo-controlled, four way crossover multicenter study to compare the bronchoprotective effects of the test product

albuterol sulfate HFA pMDI (Cipla, Ltd, India) with the reference product, albuterol sulfate HFA pMDI Proventil® HFA (Merck & Co., Inc., US)

SL75.14 A randomized, double-blind, placebo-controlled, multi-center study of the efficacy and safety of STG320 sublingual tablets of house dust mite (HDM) allergen extracts in adults and adolescents with HDM-associated allergic rhinitis

VX14-787-103 A phase 2b, randomized, double-blind, placebo-controlled, parallel-group, multicenter study of 2 dose levels of vx-787 administered as monotherapy and one dose level of VX-787 administered in combination with oseltamivir for the treatment of acute uncomplicated seasonal influenza a in adult subjects

ARC004 peanut allergy oral immunotherapy study of AR101 for desensitization in children and adults (PALISADE) follow-on study

ARC007 Real-world AR101 market-supporting experience study in peanut-allergic children ages 4 to 17 years (RAMSES)

ARC008 A multicenter, open-label, long-term safety study of AR101 characterized oral desensitization immunotherapy in subjects who participated in a prior AR101 Study

ARC011 Real-world AR101 market-supporting experience study in peanut-allergic children, active treatment arm

Open-Label Extension Study (RAMSES OLE)

Chronic Refractory Cough Cohort Study (COCO)

GA39855 A phase III, randomized, multicenter, double-blind, placebo-controlled clinical trial of omalizumab in patients with chronic rhinosinusitis with nasal polyps

Losartan Effects on Emphysema Progression (LEEP)

A double-blind, randomized, placebo controlled study of the efficacy and safety of three doses of orvepitant in subjects with chronic refractory cough

A randomized, subject- and investigator-blinded, placebo-controlled, multi-center, multiple dose study to assess the efficacy and safety of CJM112 in patients with inadequately controlled moderate to severe asthma

Patient Empowered Strategy to Reduce Asthma Morbidity in Highly Impacted Populations (PREPARE)

A phase 2/3 study investigating the pharmacokinetics, safety, and efficacy of dupilumab in patients aged ≥ 6 months to < 6 years with severe atopic dermatitis

A randomized, double-blind, placebo-controlled study to investigate the efficacy and safety of dupilumab administered concomitantly with topical corticosteroids in patients, ≥ 6 years to < 12 years of age, with severe atopic dermatitis

An open-label, randomized, actual use study of dupilumab auto-injector device in patients with atopic dermatitis

A randomized, 24-week treatment, double-blind, placebo-controlled efficacy and safety study of dupilumab 300 mg every other week, in patients with bilateral nasal polyposis on a background therapy with intranasal corticosteroids

HELP Study™: A multicenter, randomized, double-blind, placebo-controlled efficacy and safety study to evaluate DX-2930 for long-term prophylaxis against acute attacks of hereditary angioedema (HAE)

IV. BASIC AND CLINICAL RESEARCH SUPPORT

ENDOWMENTS

Joy McCann Culverhouse Endowment and Chair in Allergy and Immunology

Mabel and Ellsworth Simmons Endowment and Professorship of Allergy and Immunology

(Both endowments are used to support research and teaching within the Division)

EXTRAMURAL FUNDING

Government Funding

National Institute of Allergy and Infectious Diseases

National Heart, Lung and Blood Institute

Non-Profit Funding

American Lung Association

American Heart Association

Patient Centered Outcomes Research Institute

Food Allergy Network

Florida Health

Pharmaceutical Funding (past or present)

Ablynx, NV

Afferent

Aimmune Therapeutics

Almirall Pharmaceuticals

AstraZeneca Copleware

CSL Behring

Cytos

Dyax Corporation

Forest Laboratories

Genentech Inc

GlaxoSmithKline

Jerini, US

Merck and Co., Inc.

MedImmune

Novartis Pharmaceuticals

Pfizer

Pharming Inc.

Roche

Sanofi-Aventis Pharmaceuticals

Schering-Plough Corporation

Shire

Stallergenes

Teva Pharmaceuticals

Vertex

Viropharma

V. FACULTY AND STAFF AWARDS

Narasaiah Kolliputi, Ph.D., Associate Professor of Medicine and Pediatrics, Division of Allergy and Immunology, was selected for the 2017 Faculty Outstanding Research Achievement Award. The annual awards, which are part of an open competition judged by the USF System Research Council, are given to USF faculty members who have received national and international peer recognition for their research in the previous calendar year.

Michael N. Teng, PhD., Associate Professor of Medicine, Molecular Medicine, and Pediatrics, Division of Allergy and Immunology, received the Excellence in Teaching Award from the Graduate Program in Integrated Biomedical Sciences, University of South Florida Morsani College of Medicine, 2017.



Narasaiah Kolliputi, PhD, receiving the USF 2017 Faculty Outstanding Research Achievement Award

L to R: Dr. Paul R. Sanberg, Senior Vice-President for Research, Narasaiah Kolliputi, PhD, Associate Professor of Medicine & Pediatrics, Judy Genshaft, President, University of South Florida

VI. Major Accomplishments:

Rosa Codina, PhD

Promoted to Affiliate Associate Professor, Department of Internal Medicine, University of South Florida Morsani College of Medicine, July 1, 2017.

Richard F. Lockey, MD, Roger W. Fox, MD, Dennis K. Ledford, MD, Mark C. Glaum, MD, PhD, Thomas B. Casale, MD

Selected as "Tampa Top Doctors, 2017".

Richard F. Lockey, MD

Editor-in-Chief, *Impact Review*, Morsani College of Medicine, Tampa, FL.

Narasaiah Kolliputi, PhD

Received a new three-year grant (project period 09/01/2017 - 09/31/2020) from NHBLI/NIH entitled “Molecular Mechanisms of Hyperoxic Lung Injury” in the total amount of \$1,121,250.00.

Invited to serve on the October, 2017 Lung Injury, Repair and Remodeling study section, National Institutes of Health.

Invited to serve as a new member of the Respiratory, Cell & Molecular Biology Program Committee for ATS 2017-2018.

Invited to serve as an editorial board member of the AJP Lung journal.

Served as Chairman and Ad hoc study section member, National Institutes of Health/National Heart Lung and Blood Institute.

Emma Westermann-Clark, MD

2017-2018 Research Grant Awardee

Research grant submission entitled “The role of Matrix Metalloproteinase 7 in a Novel Model of Idiopathic Pulmonary Fibrosis” selected for funding support as a part of the GME Research Grant Program. Total allotted funds - \$50,000.

Division of Allergy and Immunology, Department of Internal Medicine

Selected as a World Allergy Organization (WAO) Center of Excellence for the term 2016 – 2019. The purpose of WAO Centers of Excellence is to intensify and accelerate multi-disciplinary scientific and clinical innovation, education, and advocacy worldwide providing excellence in education, research, and training to various stakeholders in allergy, asthma and clinical immunology.

VII. VISITING PROFESSOR EDUCATIONAL PROGRAM

Napoleon Monroe

Managing Director

New Directions Technology Consulting

Medical Devices

Lancaster, PA

Thursday, March 16, 2017, 7:00 – 8:00 AM

“Connected Combination Products and the Creative Reconstruction of Treatment”

Robert Schleimer, PhD

The Roy and Elaine Patterson Professor

Chief, Allergy-Immunology

Northwestern Feinberg School of Medicine

240 E. Huron Street

Room M-318

Chicago, IL 60611

Thursday, March 23, 2017, 7:00 – 8:00 AM

“Pathogenic mechanisms in chronic rhinosinusitis”

Jeffrey Miller, MD

Allergist/Immunologist

538 New Litchfield Street

Torrington, CT

Wednesday, March 29, 2017, 7:00 – 8:00 AM

Arthritis & Allergy Associates PC

Torrington, Connecticut

“Dust Mites and Their Symbiotic Relationship with Humans”

Thomas O’Riordan, MD

Pulmonologist

Sanofi

26 Research Way

East Setauket, NY 11733

Thursday, June 1, 2017, 7:00 – 8:00 AM

“Evolving Concepts of Type 2 Inflammation in Asthma: Insights from the Dupilumab Program”

Ronald L. Rabin, MD

Chief, Laboratory of Immunology

Division of Bacterial, Parasitic and Allergenic Products

Center for Biologics Evaluation and Research

Office of Vaccines Research and Review

US Food and Drug Administration

Bethesda, Maryland

Thursday, August 3, 2017, 7:00 – 8:00 AM

“Regulation of Allergenic Extracts in the United States”

Harry L. Malech M.D.

Chief, Genetic Immunotherapy Section

Deputy Chief, Laboratory of Clinical Immunology and Microbiology

National Institute of Allergy and Infectious Diseases, NIH

Bethesda, MD

Wednesday, September 27, 2017, 7:00 – 8:00 AM

“Lentivector gene therapy clinical trials for primary immune deficiencies: X-linked Severe Combined Immune Deficiency and X-linked Chronic Granulomatous Disease”

Leonardo Puerta, PhD

Professor de Inmunología

Universidad de Cartagena

Cartagena, Columbia

Thursday, November 2, 2017, 7:00 – 8:00 AM

“Modifying Mite Allergenicity”

Luis Caraballo, MD

Honorary Professor of Immunology and Allergology

Director, Institute for Immunological Research

The University of Cartagena

Cartagena de Indias, Colombia

Friday, November 3, 2017, 7:00 – 8:00 AM

“Potential Asthma Anti-Inflammatory Molecules from Parasites”

VIII. PUBLICATIONS FROM THE DIVISION

BOOK CHAPTERS PUBLISHED

Ricketti PA, Lockey RF: Honeybee venom allergy in beekeepers. In: Beekeeping - From Science to Practice. Vreeland R, Sammataro D (eds). Springer International Publishing, Switzerland. pp 195-213, 2017.

Pesek R, Lockey RF: Adverse reactions to skin testing and immunotherapy with Hymenoptera venoms and whole-body extracts. In: Stinging Insect Allergy. Freeman TM, Tracy JM (eds). Springer International Publishing, Switzerland. Chpt 8, pp 125-140, 2017.

SCIENTIFIC ARTICLES PUBLISHED

Saco T, Glaum MC, Ledford DK, Lockey RF: Onset of psoriatic arthritis associated with multiple wasp stings. *Ann Allergy Asthma Immunol* 2017; 118(2):227-228.

Cox L, Sanchez-Borges M, Lockey RF: Rostrum: World Allergy Organization systemic allergic reaction grading system: Is a modification needed? *J Allergy Clin Immunol-In Prac* 2017; 5(1):58-62.

Banerji A, Busse P, Shennak M, Lockey RF, et al: Inhibiting plasma kallikrein for hereditary angioedema prophylaxis. *N Engl J Med* 2017; 376(8):717-28.

Kim DW, Kulka M, Jo A, Eun KM, Arizmendi N, Tancowny BP, Hong SN, Lee JP, Jin HR, Lockey RF, Kim DK, Cho SH: Cross-talk between human mast cells and epithelial cells by IgE-mediated periostin production in eosinophilic nasal polyps. *J Allergy Clin Immunol-Prac* 2017; 139(5):1692-1695 e6.

Pepper AN, Westermann-Clark E, Lockey RF: Rostrum: The high cost of epinephrine autoinjectors and possible alternatives. *J Allergy Clin Immunol-Prac* 2017; 5(3): 665-668.

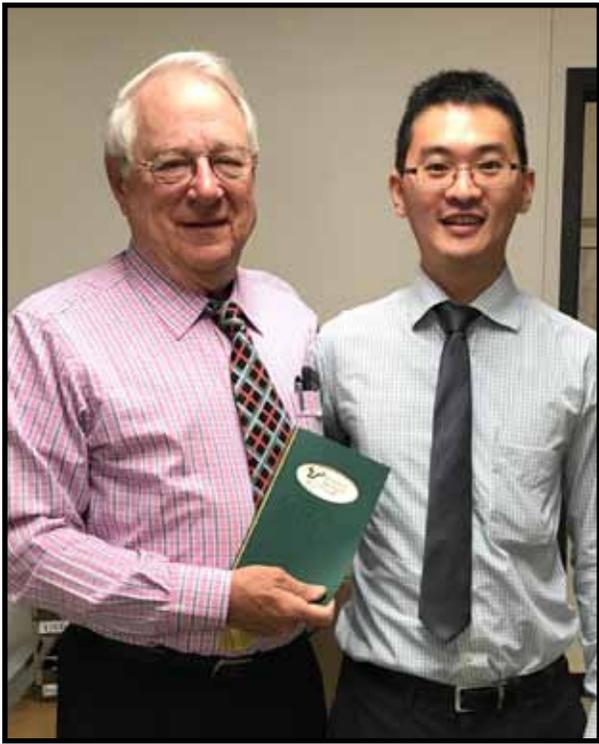
Nolte H, Casale TB, Lockey RF, et al: Epinephrine use in clinical trials of sublingual immunotherapy tablets. *J Allergy Clin Immunol Prac* 2017; 5(1):84-89.e3.

Riedl MA, Grivcheva-Panovska V, Moldovan D, Lockey RF, et al: Recombinant human C1 esterase inhibitor for prophylaxis of hereditary angioedema: a phase 2, multicenter, randomized, double-blind, placebo-controlled crossover trial. *Lancet* 2017; 390(10102):1595-1602.

Ledford D, Busse W, Trzaskoma B, Omachi TA, et al: A randomized multicenter study evaluating Xolair persistence of response after long-term therapy. *Journal of Allergy and Clinical Immunology* 2017; 140(1): 162-169.e2.

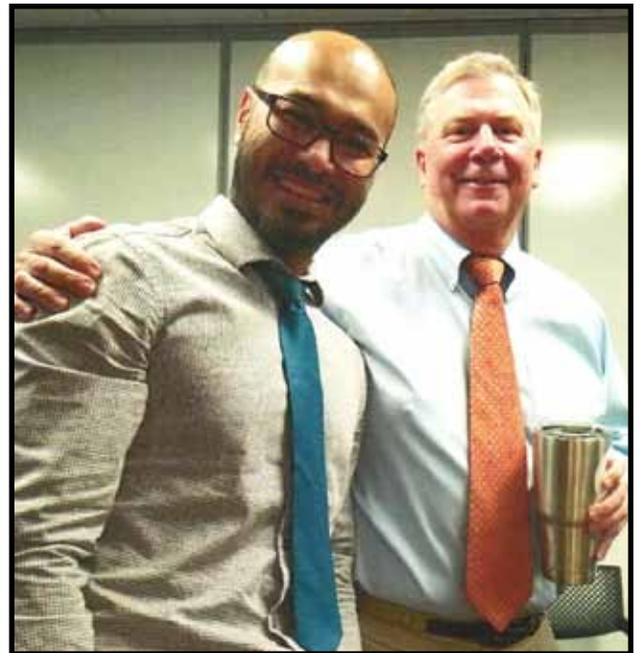
Afrin LB, Fox RW, Zito SL, Choe L, Glover SC: Successful targeted treatment of mast cell activation syndrome with tofacitinib. *Eur J Haematol* 2017; 99(2):190-193.

Maurer M, Kaplan A, Rosén K, Holden M, Iqbal A, Trzaskoma BL, Yang M, Casale TB: The XTEND-CIU study: long term use of omalizumab in chronic idiopathic urticaria. *J Allergy Clin Immunol* 2017; pii: S0091-6749(17)31745-1. doi: 10.1016/j.jaci.2017.10.018. [Epub ahead of print]



Richard F. Lockey, MD with Chen Lin, MD, one of the 2017 allergy and immunology fellowship program graduates.

Roger W. Fox, MD with Sultan Alandijani, MD (2017 fellow)



Kirk Shepard, fellow, 2017 – 2019
Made it for the 7 AM conference just in time!!

Chipps BE, Zeiger RS, Luskin AT, Busse WW, Trzaskoma BL, Antonova EN, Pazwash H, Limb SL, Solari PG, Griffin NM, Casale TB: Baseline asthma burden, comorbidities, and biomarkers in omalizumab-treated patients in PROSPERO. *Ann Allergy Asthma Immunol* 2017; pii: S1081-1206(17)31067-0. doi: 10.1016/j.anai.2017.09.056. [Epub ahead of print]

Casale TB, Win PH, Bernstein JA, Rosén K, Holden M, Iqbal A, Trzaskoma BL, Yang M, Antonova EN, Murphy T, Scarupa MD, Sofen H, Kaplan A: Omalizumab response in patients with chronic idiopathic urticaria: Insights from the XTEND-CIU study. *J Am Acad Dermatol*. 2017; pii: S0190-9622(17)32536-7. doi: 10.1016/j.jaad.2017.10.010. [Epub ahead of print]

Casale TB, Chipps BE, Rosén K, Trzaskoma B, Haselkorn T, Omachi TA, Greenberg S, Hanania NA: Response to omalizumab using patient enrichment criteria from trials of novel biologics in asthma. *Allergy* 2017; doi: 10.1111/all.13302. [Epub ahead of print]

Casale TB, Cox LS, Wahn U, Golden DBK, Bons B, Didier A: Safety review of 5-grass pollen tablet from pooled data of clinical trials. *J Allergy Clin Immunol Pract* 2017; 5(6):1717-1727. e1. doi: 10.1016/j.jaip.2017.04.020. [Epub 2017 Jul 19].

Casale TB, Onder RF, Berkowitz RB, Korenblat PE: Nasal carbon dioxide used as needed in the symptomatic treatment of seasonal allergic rhinitis. *J Allergy Clin Immunol Pract*. 2017; pii: S2213-2198(17)30424-5. doi: 10.1016/j.jaip.2017.05.028. [Epub ahead of print]

Dixon AE, Castro M, Gerald LB, Holbrook JT, Henderson RJ, Casale TB, Irvin CG, Black K, Wise RA, Sugar EA; American Lung Association Airways Clinical Research Centers' Writing Committee: Effect of intranasal corticosteroids on allergic airway disease in asthma. *J Allergy Clin Immunol-Pract* 2017; 5(4):1125-1128.e3

Nelson HS, Calderon MA, Bernstein DI, Casale TB, Durham SR, Andersen JS, Esch R, Cox LS, Nolte H: Allergen immunotherapy clinical trial outcomes and design: working toward harmonization of methods and principles. *Curr Allergy Asthma Rep* 2017;17(3):18.

Ricketti PA, Alandijani S, Lin CH, Casale TB: Investigational new drugs for allergic rhinitis. *Expert Opin Investig Drugs* 2017; 26(3):279-292.

Demoly P, Makatsori M, Casale TB, Calderon MA: The potential role of allergen immunotherapy in stepping down asthma treatment. *J Allergy Clin Immunol-Pract*. 2017; 5(3):640-648.

Kim DW, Kulka M, Jo AR, Eun KM, Arizmendi N, Tancowny BP, Hong SN, Lee JP, Jin HR, Lockey RF, Kim DK, Cho SH: Cross-talk between human mast cells and epithelial cells by IgE-mediated periostin production in eosinophilic nasal polyps. *J Allergy Clin Immunol* 2017;139(5):1692-1695.

Kim DK, Jin HR, Eun KM, Mo JH, Cho SH, Oh S, Cho D, Kim DW. The role of interleukin-33 in chronic rhinosinusitis. *Thorax* 2017; 9(4):299-306.

Chen J, Zhou Y, Zhang L, Wang Y, Pepper AN, Cho SH, Kong W: Individualized treatment of allergic rhinitis according to nasal cytology. *Allergy Asthma Immunol Res* 2017; 9(5):403-409.

Kim DW, Cho SH: Emerging endotypes of chronic rhinosinusitis and its application to precision medicine. *Allergy Asthma Immunol Res* 2017; 9(4):299-306.

Chen J, Zhou Y, Wang Y, Zheng Y, Lai X, Westermann-Clark E, Cho SH, Kong W. Specific immunoglobulin E and immunoglobulin G4 toward major allergens of house-dust mite during allergen-specific immunotherapy. *Am J Rhinol Allergy* 2017; 31(3):156-160.

Sherenian MG, Cho SH, Levin A, et al: PAI-1 gain-of-function genotype, factors increasing PAI-1 levels, and airway obstruction: the GALA II Cohort. *Clin Exp Allergy* 2017 May 24. doi: 10.1111/cea.12958. [Epub ahead of print]

Denlinger L, Ramratnam S, Ross K, Phillips B, Bhakta N, Cardet JC, Castro M, Peters S, Phipatanakul W, Bacharier L, Bleecker E, Comhair S et al, for the NHLBI SARP Investigators: Inflammatory and co-morbid features of patients with severe asthma and frequent exacerbations *American Journal of Respiratory and Critical Care Medicine* 2017; 95(3): 302-313.

Cardet JC, Louisias M, King TS, Castro M, Codispoti CD, Dunn R, Engle L, Giles BL, Holguin F et al, for the NHLBI AsthmaNet Investigators: Income is an independent risk factor for worse asthma outcomes. *J Allergy Clin Immunol* 2017. Accepted for publication, available online PMID: 28535964.

Teague WG, Phillips BR, Fahy JV, Cardet JC, et al: Baseline features of the severe asthma research program (SARP 111) Cohort: Differences with age. *J Allergy Clin Immunol* 2017 Aug 30. pii: S2213-2198(17)30526-3. doi: 10.1016/j.jaip.2017.05.032. [Epub ahead of print].

Denlinger LC, Phillips BR, Ramratnam S, Ross K, Bhakta NR, Cardet JC, et al: Inflammatory and Comorbid Features of Patients with Severe Asthma and Frequent Exacerbations. *Am J Respir Crit Care Med*. 2017;195(3):302-313.

Tian Z, Zhang, H., Dixon J, Traphagen N, Wyatt, T, Kolliputi N, et al: Cigarette smoke impairs A2A adenosine receptor mediated wound repair through up-regulation of Duox-1 expression. *Scientific Reports* 2017; 7:44405.

Sriperumbudur A., Breitzig M, Lockey RR, Kolliputi N: Hedgehog: the key to maintaining adult lung repair and regeneration. *Journal of cell communication and signaling* 2017; 11: 95-96.

Saco TV, Breitzig MT, Lockey RF, Kolliputi N: Epigenetics of Mucus Hypersecretion in Chronic Respiratory Diseases. *Am J Respir Cell Mol Biol* 2017 Nov 2. doi: 10.1165/rcmb.2017-0072TR. [Epub ahead of print]. PMID: 29096066.

Prakash YS, Halayko AJ, Camoretti-Mercado B, et al: ATS Assembly on Respiratory Structure and Function;.An Official American Thoracic Society Research Statement: Current Challenges Facing Research and Therapeutic Advances in Airway Remodeling. *Am J Respir Crit Care Med* 2017;195(2): e4-e19.

Soria I, Alvarez J, Manzano AI, Fernández-Caldas E, et al: Mite allergoids coupled to nonoxidized mannan from *Saccharomyces cerevisiae* efficiently target canine dendritic cells for novel allergy immunotherapy in veterinary medicine. *Vet Immunol Immunopathol* 2017 Aug;190:65-72. doi: 10.1016/j.vetimm.2017.07.004. Epub 2017 Jul 23.

Cantillo JF, Puerta L, Lafosse-Marin S, Subiza JL, Caraballo L, Fernandez-Caldas E: *Allergens involved in the cross-reactivity of Aedes aegypti with other arthropods*. *Ann Allergy Asthma Immunol* 2017;118(6):710-718.

Cantillo JF, Puerta L, Puchalska P, Lafosse-Marin S, Subiza JL, Fernández-Caldas E: Allergenome characterization of the mosquito *Aedes aegypti*. *Allergy* 2017;72(10):1499-1509.

Guzmán-Fulgencio M, Caballero R, Lara B, Mena M, Tejera M, Sastre A, Subiza JL, Fernández-Caldas E, Casanovas M: Safety of immunotherapy with glutaraldehyde modified allergen extracts in children and adults. *Allergol Immunopathol (Madr)* 2017; 45(2):198-207.

Lockey RF, Teng MN: Human passive cutaneous anaphylaxis in the 21st century: Worth the risk? *J Allergy Clin Immunol* 2017 139:1795-6.

Fernández-Caldas E, Cases B, El-Qutob D, Cantillo JF: Mammalian raw materials used to produce allergen extracts. *Ann Allergy Asthma Immunol* 2017;119(1):1-8.

Sánchez-Borges M, Fernández-Caldas E, Thomas WR, Chapman MD, Lee BW, Caraballo L, Acevedo N, Chew FT, Ansotegui IJ, Behrooz L, Phipatanakul W, Gerth van Wijk R, Pascal D, Rosario N, Ebisawa M, Geller M, Quirce S, Vrtala S, Valenta R, Ollert M, Canonica GW, Calderón MA, Barnes CS, Custovic A, Benjaponpitak S, Capriles-Hulett A: International consensus (ICON) on: clinical consequences of mite hypersensitivity, a global problem. *World Allergy Org J* 2017; 10(1):14.

Turkeltaub PC, Cheon J, Friedmann E, Lockey RF: The influence of asthma and/or hay fever on pregnancy: data from the 1995 National Survey of Family Growth. *JACI-In Prac*, 2017; 5(6):1679-1690.

REVIEW ARTICLES/EDITORIALS

Ferguson JE, Patel S, Lockey RF: Acute asthma, prognosis and treatment. *JACI* 2017; 139(2):438-47.

Lockey RF: The importance of knowing how allergen extracts are manufactured. *Annals of Allergy Asthma Immunol* 2017;118(1):2-3.

Codina R, Lockey RF: Pollen used to produce allergen extracts. *Ann Allergy Asthma Immunol* 2017; 118(2):148-153.

Lockey RF, Teng MN: Human passive cutaneous anaphylax in the 21st century: Worth the risk? *J Allergy Clin Immunol* 2017;139(6):1795-1796.

Saco TV, Pepper A, Lockey RF: Benralizumab for the treatment of asthma. *Expert Review of Clinical Immunology (IERM)* 2017; 13(5):405-413.

Mario Sánchez-Borges, Victoria Cardona, Margitta Worm, Ignacio J Ansotegui, Motohiro Ebisawa, Yehia El-Gamal, Stanley Fineman, Mario Geller, Alexei Gonzalez Estrada, Paul A. Greenberger, Richard F. Lockey, Aziz Sheikh, Luciana Tanno, Bernard Y Thong, on behalf of the WAO Anaphylaxis Committee: In-flight Allergic Emergencies. *World Allergy Organ J* 2017;10(1):15.

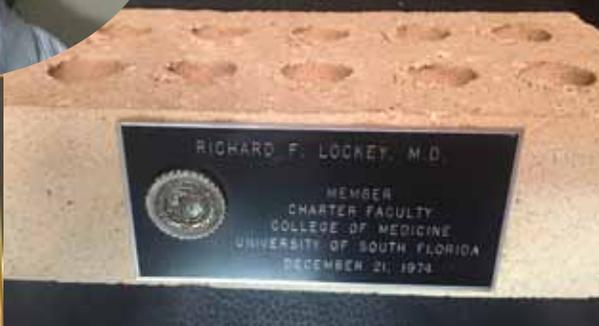
Hudey SN, Westermann-Clark E, Lockey RF: Cardiovascular and diabetic medications that cause bradykinin-mediated angioedema. *JACI-Prac* 2017; 5(3):610-615.

- Ledford DK: Increased IgE in IgA deficiency. *J Allergy Clin Immunol-Prac* 2017; 5(6):1795.
- Ledford DK, Cem Akin: Tryptase Increase without Mastocytosis or Anaphylaxis. *J Allergy Clin Immunol-Prac* 2017; 5(3): 869.
- Ledford DK: Henoch-Schönlein Purpura and Influenza Vaccine. *J Allergy Clin Immunol-Prac* 2017; 5(1): 210.
- Casale TB: Biologics and biomarkers for asthma, urticaria, and nasal polyposis. *J Allergy Clin Immunol* 2017;139(5):1411-1421.
- Tanno LK, Simons FER, Sanchez-Borges M, Casale TB, et al: Applying prevention concepts to anaphylaxis: A call for worldwide availability of adrenaline auto-injectors. *Clin Exp Allergy* 2017; 47:1108-1114.
- Tabatabaian F, Ledford DK, Casale TB: Biologic and new therapies in asthma. *Immunol Allergy Clin North Am* 2017;37(2):329-343.
- Esch RE, Codina R: Fungal raw materials used to produce allergen extracts. *Ann Allergy Asthma Immunol* 2017; 118:399-405.
- Tschudy MM, Sharfstein J, Matsui E, Barnes CS, Chacker S, Codina R, Cohn JR, Sandel M, Wedner HJ: Something new in the air: Paying for community-based environmental approaches to asthma prevention and control. *J Allergy Clin Immunol* 2017; 140:1244-9.
- Pepper AN, Renz H, Casale TB, Garn H: Biologic Therapy and Novel Molecular Targets of Severe Asthma. *J Allergy Clin Immunol Pract* 2017; 5(4):909–916.
- Carnés J, Iraola V, Cho SH, Esch RE: Mite allergen extracts and clinical practice. *Ann Allergy Asthma Immunol* 2017; 118:249-256.
- Pepper AN, Calderón MA, Casale TB: Sublingual Immunotherapy for the Polyallergic Patient. *J Allergy Clin Immunol Pract* 2017; 5(1):41-45.
- Lin CH, Lockey RF: Prevention of asthma: fish or fish oil? *JACI-In Prac*, 2017; 5(6):1798-1800.

INTERNET PUBLICATIONS

Carroll MP, Jr, Ricketti P, Lockey RF: "Chronic Headache and Facial Pain". Interactive case report available at: http://www.worldallergy.org/interactive_case_reviews/. Posted May, 2017.

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