## Baylor College of Medicine



# DEPARTMENT OF MEDICENE

## **2022 ANNUAL REPORT**

The Margaret M. and Albert B. Alkek DEPARTMENT OF MEDICINE ACADEMIC ANNUAL REPORT 2022

**Baylor College of Medicine** 

### CHAIR'S MESSAGE

Dear Colleagues:

It is my pleasure to present to you the Department of Medicine's annual report for the year 2022. I am proud to say that we have achieved many significant milestones in the past year.

In the past year, we have made strategic investments in research, clinical care programs, medical education and training. These investments have allowed us to expand our capabilities and improve our offerings, which has resulted in a stronger competitive position for our patients, trainees and workers.



Hashem B. El-Serag M.D., M.P.H.

Looking ahead, we are optimistic about the future and are confident in our ability to continue delivering value to our patients and shareholders. We remain committed to innovation, integrity and excellence in our business practices and we are excited about the opportunities that lie ahead.

Sincerely,

Hashem B. El-Serag, M.D., M.P.H.

## **2022 ORGANIZATIONAL OVERVIEW**

#### CHAIR

Hashem B. El-Serag, M.D., M.P.H.

#### **OFFICE OF THE CHAIR**

Vice Chair for Clinical Affairs Vice Chair for Education Vice Chair for Faculty and Staff Development Vice Chair for Harris Health System/Ben Taub Hospital Vice Chair for Quality Improvement and Innovation Vice Chair for Research Vice Chair for Veterans Affairs

Mandeep Bajaj, M.B.B.S. Richard J. Hamill, M.D. Sandra Haudek, Ph.D. Hemant Roy, M.D. Kyler Godwin, Ph.D. Rolando Rumbaut, M.D., Ph.D. Biykem Bozkurt, M.D., Ph.D.

#### SECTIONS

Cardiology Cardiovascular Research Endocrinology, Diabetes, and Metabolism Epidemiology and Population Sciences Gastroenterology and Hepatology General Internal Medicine Geriatrics and Palliative Medicine Health Services Research Hematology and Oncology Immunology, Allergy, and Rheumatology Infectious Diseases Nephrology Pulmonary, Critical Care and Sleep Medicine Transition Medicine

#### **Chief of Section**

Christie Ballantyne, M.D. Christie Ballantyne, M.D. Mark Herman, M.D. Christopher Amos, Ph.D. Fasiha Kanwal, M.D., M.S.H.S. Joslyn Fisher, M.D., M.P.H. Aimee Garcia, M.D. Laura Petersen, M.D., M.P.H., F.A.C.P. Martha Mims, M.D. Rashmi Maganti, M.D. Thomas Giordano, M.D., M.P.H. Wolfgang Winkelmayer, M.D., Sc.D. Ivan Rosas, M.D. Cynthia Peacock, M.D.

The Department of Medicine at Baylor College of Medicine is the professional home to over 1,800 professionals distributed across 14 sections. We have campus sites at Baylor St. Luke's Medical Center, the McNair Campus, Michael E DeBakey VA Medical Center, Harris Health System, Texas Children's Hospital, and the Pavilion for Women. We also have strong associations with numerous centers, programs, and organized research units. Our team is thrilled to celebrate our departmental achievements in research, patient care, and medical education and training.

## THE DEPARTMENT OF MEDICINE

#### RESEARCH

In 2022, the research efforts of our department faculty were supported by \$120.3M in total extramural research funding including:

- \$77.2M from the NIH
- \$8.5M from the Veteran's Administration
- \$12.2M from other federal agencies

- \$17.7M from state and other non-federal sources
- \$4.7M from industry support

Two of our sections have NIH T32 grants to support research training in the fields of gastroenterology and infectious diseases.

#### **CLINICAL CARE**

Our physicians practice in Baylor St. Luke's Medical Center, the McNair Campus, Ben Taub Hospital, Michael E. DeBakey VA Medical Center and Houston Methodist Hospital. Many specialty and subspecialty services provided at these locations are nationally recognized as sites of premier clinical quality.

Patients receive state-of-the-art consultations, diagnoses and compassionate care from our world-renowned clinical staff. Our doctors specialize in diagnosing and treating various diseases ranging from heart disease, diabetes and allergies to breast cancer and cystic fibrosis. Teens with developmental disabilities transitioning into adult care receive personalized, quality care and social services through our unique Transition Medicine group.

#### **EDUCATION**

The Department of Medicine's education efforts train the next generation of leaders in medicine through medical school, graduate medical training, fellowships and internships. The Department of Medicine provides undergraduate medical education (UME) students a balance of training, exposure, and experience, which prepares them for graduate programs. Our faculty teaches two-thirds of the UME courses. Students first attend foundational sciences curriculum courses and then their clinical curriculum courses. Students choose one sub-internship, seven core clerkships and five or six clinical electives.

Students within the Internal Medicine sub-internship develop skills required for their internship. During these rotations, medical students experience increased autonomy, acting as interns supervised directly by senior residents and the attending physician. Students hone in on their history and physical skills, write orders and independently develop diagnostic and therapeutic plans. They expand their medical knowledge by using experiential and self-directed learning.

Our residencies are authorized by the Accreditation Council for Graduate Medical Education and its respective Residency Review Committees. We enroll highly competitive applicants each year and continue to match outstanding residents. Our graduates become leaders in Internal Medicine and its specialties, both academically and in clinical practice.

Beyond residency training, the Department of Medicine offers fellowships for two to four years of training in each major subspecialty, such as gastroenterology, cardiovascular disease, etc. This experience allows physicians to learn unique concepts, information and procedures for a particular subspecialty, with an opportunity to research if desired. Our department has more than 220 residents and more than 150 fellows.

Affiliations with leading research and healthcare institutions in the Texas Medical Center provide access to diverse people and resources. Our students and trainees can access numerous patients during these clerkships in various settings through our affiliation with eight leading healthcare institutions—all located in the world's largest medical center.

## SECTION OF INFECTIOUS DISEASES

#### SECTION ACCOMPLISHMENTS

The Infectious Disease section continues to take a leadership role in the US response to the novel coronavirus pandemic caused by the Severe Acute Respiratory Coronavirus-2 (SARS CoV-2). Dr. Hana El Sahly, Dr. Robert Atmar, and Dr. Jennifer Whitaker led or participated in numerous studies of drugs and vaccines to combat the pandemic. The Vaccine Research Center's leader, Dr. Hana El Sahly, was co-Principal Investigator for the phase 3 study of the Moderna mRNA-1273 vaccine efficacy.

Our faculty have played major roles in Baylor College of Medicine's on going response to the novel coronavirus pandemic caused by the Severe Acute Respiratory Coronavirus-2 (SARS CoV-2) and the new outbreak of the Monkeypox virus in 2022, serving as leaders in the Incidence Command Center and sub-committees and in infection control at Baylor St. Luke's Medical Center, Ben Taub Hospital and the Michael E. DeBakey VA Medical Center (MEDVAMC).

SECTION CHIEF Thomas Giordano, M.D., M.P.H.

The Section continues to contribute to national practice guidelines and national infectious diseases organizations, with members on

the Advisory Committee on Immunization Practices (ACIP) and the Department of Health and Human Services Panel on Antiretroviral Guidelines for Adults and Adolescents; members on NIH review panels; and in leadership committees of the Infectious Diseases Society of America, the American Society of Tropical Medicine and Hygiene and the Society for Healthcare Epidemiology of America. The Section's faculty completed hundreds of interviews with local and national media to help keep the general public informed on the COVID-19 and Monkeypox outbreaks.

Clinical highlights include participating in the "long COVID" multi-disciplinary services at Baylor Medicine and MEDVAMC, in multi-disciplinary transplant infectious diseases services at BSLMC, and participating in a new mycobacteria clinic for Harris Health System.

The section initiated a new "Tropical and Global Medicine" track for fellows for the 2022-2023 academic year in collaboration with the National School of Tropical Medicine at BCM. The section's faculty continue to have leadership roles in undergraduate and graduate medical education for the Department of Medicine as well as Baylor College of Medicine's School of Medicine and National School of Tropical Medicine.

The Infectious Diseases faculty were authors on over 60 peer-reviewed publications with impact factors >4, numerous book chapters, and the primary members of the Section had over \$516,442 in new funding during 2021-2022.

#### FACULTY

#### Section Leadership

- Thomas Giordano, M.D., M.P.H., Chief of the Section of Infectious Diseases
- Robert Atmar, M.D., Chief of Infectious Diseases, Ben Taub Hospital and Smith Clinic
- Muhammad Rizwan Sohail, M.D., Medical Director for Infectious Diseases, Baylor Medicine
- Maria Rodriguez-Barradas, M.D., Chief of Infectious Diseases, Michael E. DeBakey VA Medical Center (MEDVAMC)
- Indira Mysorekar, Ph.D., Chief of Basic and Translational Research, Section of Infectious Diseases
- Jose Serpa-Alvarez, M.D., M.S., Program Director for the Infectious Diseases fellowship training program; Chief of Education, Section of Infectious Diseases; Medical Director of Thomas Street Health Center, Harris Health System
- Prathit Kulkarni, M.D., Associate Program Director for the Infectious Diseases fellowship training program

#### FACULTY

#### Primary

#### **Distinguished Professor**

• Daniel Musher, M.D.

#### Professor

- Robert Atmar, M.D.
- Thomas Giordano, M.D., M.P.H.
- Richard Hamill, M.D.
- Maria Rodriguez-Barradas, M.D.
- Jose Serpa-Avarez, M.D., M.S.
- Muhammad Rizwan Sohail, M.D.

#### **Associate Professor**

- Mayar Al Mohajer, M.D., MBA
- Bich N. Dang, M.D.
- Penny Jaffe, M.D.
- George Robert Parkerson, M.D., M.P.H.
- Stacey Rose, M.D.

#### **Assistant Professor**

- Monisha Arya, M.D., M.P.H.
- Katharine Breaux, P.A.
- Galant Chan, M.D.
- Andrew Chou, M.D.
- Eva Clark, M.D., Ph.D.
- Yuriko Fukuta, M.D., Ph.D.
- Melanie Goebel, M.D.
- Ahmed HaM.D.i, M.D.
- Sarwat Khalil, M.D.
- Prathit Kulkarni, M.D.
- Tyler Lambing, M.D.
- Cezarina Mindru, M.D.
- Shital Patel, M.D.
- Alison Robins, M.D.
- Shahriar Tavakoli Tabasi, M.D.
- Huan Xu, M.D.

#### Instructor

• Oyebunmi Kutemi, N.P., M.S., M.S.N., A.G.N.P.-C.

#### **Co-Primary**

#### Professor

- Hana El Sahly, M.D.
- Mary Estes, Ph.D.
- Wendy Keitel, M.D.
- Andrew Rice, Ph.D.

#### Secondary

#### **Associate Professor**

• Kenneth Muldrew, M.D., M.P.H.

#### **Assistant Professor**

Jennifer Whitaker, M.D.

#### **Assistant Professor**

- Andrew DiNardo, M.D., M.S.
- Rojelio Mejia, M.D.
- Jill Weatherhead, M.D., M.S.

#### Emeritus

• Robert Couch, M.D.

Temple Williams., M.D.

#### HONORS AND ACHIEVEMENTS

#### Mayar Al Mohajer, M.D.

- Member, American Institutes of Research (AIR) and the IDSA Technical Expert Panel for the Misdiagnosis of Urinary Tract Infections (UTIs) in Women
- Chair, IDSA committee planning the ID fellows' day QI workshop at ID Week and the ID fellows' QI curriculum
- Appointed Chief, ID at BSLMC, the position formerly held by Dr. Barry Zeluff
- Treasurer, Certification Board of Infection Control and Epidemiology
- Recipient, Innovation in Clinical Care Award, BSLMC
- Recipient, Rising Star Award, American College of Healthcare Executives, Southeastern Texas Chapter

#### Monisha Arya, M.D.

• Author, "The Must-Have Guidebook for Writing, Publishing, and Presenting: 150 Pro Tips for Career Success."

#### Robert Atmar, M.D.

Top Doctor, Houstonia Magazine

#### Galant Chan, M.D.

- Moderator, National Virtual Workshop, IDSA, "Medical Education Abstract Reviewing
- Recipient, Early Career Faculty Award for Excellence in Patient Care

#### Eva Clark, M.D.

• Session moderator, ID Week, "Travel in the Time of COVID: What's Hot in Pretravel" session

#### Bich Dang, M.D.

• Co-author, "Patient-Reported Experiences with Dialysis Care and Provider Visit Frequency" was selected as a top paper to be presented at Kidney Week

#### Hana El Sahly, M.D.

• Recipient, Michael E. DeBakey Award for Excellence in Research, BCM's highest research award

#### Richard Hamill, M.D.

- Editorial Board, Journal of Infection
- Chair, Adjudication Committee for mRNA-1273-P301; A phase 3, randomized, stratified, observer-blind, placebo-controlled study to evaluate the efficacy, safety, and immunogenicity of the mRNA-1273 sARS-CoV-2 vaccine in adults aged 18 years and older.
- Member, Invasive Mycoses Guidelines Committee. Prevention and treatment of opportunistic infections in HIV-infected adults and adolescents: recommendations from the Centers for Disease Control and Prevention, the National Institutes of Health, and the HIV Medical Association of the Infectious Diseases Society of America. Available at http://aidsinfo.nih.gov/contentfiles/lvguidelines/adult\_oi.pdf.
- Co-Director, Pri-Med Annual Conference
- Top Doctor, Texas Monthly

#### Prathit Kulkarni, M.D.

- Featured Educator, IDSA Medical Education Community of Practice (MedEd COP)
- Visiting Professor, 2021 ID Week Visiting Professor Program
- Mentor, ID Week Mentorship Program
- Top Doctor, Houstonia Magazine
- Moderator, National Virtual Workshop, IDSA, "Medical Education Abstract Reviewing" session
- Recipient, Best Inpatient Wards Teaching Award, VA
- Recipient, Best Inpatient Subspecialty Teaching Award, VA

#### Cezarina Mindru, M.D.

- Top Doctor, Houstonia Magazine
- Invited Lecturer, COVID-19 and transplantation at the VA National Surgery Office FY2022 Enhancing Transplant Care for Veterans Conference
- Part of the MEDVAMC team that was awarded the Gold Enroller certificate and the Intrepid Hall of Fame certificate for being the 1st site to reach randomization double digits at the national VA Cooperative Study Program meeting

#### Daniel Musher, M.D.

• Published his 599th paper

#### Indira Mysorekar, M.D.

- Member, Editorial Board of *Continence*
- Recipient, 2022 Herr Award by the American Society of Reproductive Immunology for her outstanding contributions to the field of immunology in the urogenital tract
- Invited Lecturer, American Society for Microbiology, 2022 ASM Microbe meeting, "Mutualism and immunological tolerance during pregnancy"
- Invited Lecturer, Urinary Tract Infection Global Alliance, 4th Clinical and Scientific Advances in Urinary Tract Infections meeting, "New Frontiers in Therapeutic Regimens for Treatment and Mitigation of UTIs"
- Invited Lecturer, American Urogynecologic Society and the International Urogynecological Association, 2022 AUGS/IUGA Scientific Meeting, "Age-related inflammasome in pelvic floor and lower urinary tract dysfunction"

#### Shital Patel, M.D.

- Participant, IDSA Leadership Institute: Rising Leaders Program
- Collaborated with the Houston AETC team to hold the Oral Health and HIV Symposium: An Educational Program for Dental Professionals

#### Stacey Rose, M.D.

- Top Doctor, Houstonia Magazine, 2021
- Top Doctor, *Houstonia Magazine*, 2022
- Associate Dean of Curriculum, BCM's School of Medicine
- Fellow, Infectious Diseases Society of America
- Recipient, Women of Excellence Award, Baylor College of Medicine
- Vice Chair, IDSA Education Committee

#### Jose Serpa Alvarez, M.D.

- Medical Director, HIV Services and Thomas Street Health Center for Harris Health System
- Recipient, 2021-2022 Faculty of the Year Award, ID Section

#### Rizwan Sohail, M.D.

• Presenter, ID Week, 2021, "Updates in S. aureus bactermia" presentation

#### Sergio Trevino Castillo, M.D.

• Recipient, Best Impatient Subspecialty Teaching Attending, Internal Medicine Residency Program

#### Jill Weatherhead, M.D.

- Session Panelist, ID Week, 2021, "Women in ID" session
- Recipient, Women of Excellence Award, Baylor College of Medicine
- Member, Authorship Group of the Panel on the Prevention and Treatment of Opportunistic Infections in HIV-Exposed and HIV-Infected Children (Peds OI Panel)

#### **RESEARCH ACTIVITIES**

#### Grants

#### Eva Clark, M.D., Ph.D.

 NIH; Impact of Intestinal Helminth Infection on HPTV Co-Infection and the Cervico-Vaginal Environment; \$189,086

#### Indira Mysorekar, M.D.

 NIH; Mechanism of Age-Associated Inflammation and Lymphoid Neogenesis in the Urinary Bladder; \$87,838

#### Maria Rodriguez-Barradas, M.D.

- CDC; Active Surveillance to Quantify the Burden of Viral Gastroenteritis in U.S. Veterans Affairs Patient Population; \$212,318
- NIH; Multidimensional Outcome Prediction Algorithm for High Risk COVID-19; \$27,200

#### Publications (37)

- Academic Medicine (IF 6.89): 1
- AIDS (IF 4.17): 2
- American Journal of Infection Control (IF 4.30): 3 •
- American Journal of Medicine (IF 5.92): 3
- Archives of Sexual Behavior (IF 4.50): 1
- Blood Advances (IF **7.6**): 1

- Cell Report (IF **9.99**): 2
- Cell Stem Cell (IF 24.63): 1
- Circulation: Cardiovascular Quality and Outcomes (IF 8.27): 1
- Clinical Infectious Diseases (IF 9.07): 9
- Clinical Microbiology Infection (IF 7.11): 2

- Clinical Microbiol Review (IF 50.13): 1
- Critical Care Medicine Journal (IF 9.29): 1
- Epidemiology (IF 4.82)
- European Respiratory Journal (IF **16.67**): 1
- Frontiers in Pharmacology (IF **5.51**): 1
- Frontiers in Public Health (IF **5.99**): 1
- Genome Medicine (IF 11.11): 1
- Heart Rhythm (IF **6.34**): 1
- Implementation Science (IF 4.52):1
- International Journal of Infectious Diseases (IF 10.68): 1
- International Journal of Nursing Studies (IF 5.83): 1
- JMIR Formative Research (IF 7.08): 1
- JMIR Public Health and Surveillance (IF 14.56): 1
- Journal of Infectious Diseases (IF 5.22): 1

#### Books and Book Chapters

#### Eva Clark, M.D.

- Chapter 32: Viral and Rickettsial Diseases. SJ McPhee and M Papadakis (Ed), Current Medical Diagnosis and Treatment 2022. McGraw
- Section 145: Nonvenereal Treponematoses. Feigin and Cherry's Textbook of Pediatric Infectious Diseases, 9th Edition

#### Richard J. Hamill, M.D.

 Mycotic Infections. In: Papadakis MA, McPhee SJ, Rabow MW, eds. Current Medical Diagnosis & Treatment 2022

#### Indira Mysorekar, M.D.

- Pelvic Floor: Foundational Science and Mechanistic Insights for a Shared Disease Model. American Urogynecologic Society and International Urogynecological Association.
- Chapter 4: The Role of Aging and Immunity in the Pathogenesis of Pelvic Organ Prolapse and Stress Urinary Incontinence

#### Jose Serpa Alvarez, M.D.

- Taenia (Multiceps) multiceps and Taenia serialis (Coenurosis). In: Long S, ed. Principles and Practice of Pediatric Infectious Diseases, 6th Edition. Philadelphia: Elsevier (2022)
- Taenia solium, Taenia asiatica, and Taenia saginata (Taeniasis and Cysticercosis). In: Long S, ed. Principles and Practice of Pediatric Infectious Diseases, 6th Edition. Philadelphia: Elsevier (2022)

#### Huan Xu, M.D.

- Promoting de-implementation of inappropriate antimicrobial use in cardiac device procedures by expanding audit and feedback: protocol for hybrid III type effectiveness/implementation quasi-experimental study. Implement Sci. 2022 Jan 29;17(1): 12.
- Taenia solium, Taenia asiatica, and Taenia saginata: Taeniasis and Cysticercosis. Principles and Practice of Pediatric Infectious Diseases, 10 Mar 2022; 280,1435-1442.e6.
- Taenia (Multiceps) muticeps and Taenia serialis: Coenurosis. Principles and Practice of Pediatric Infectious Diseases, 10 Mar 2022; 282, 1448-1449.e6.

- Journal of the American Heart Association (IF 6.10): 1
- Journal of Urology (IF 7.45):1
- Lancet Respiratory Medicine (IF 30.70): 3
- Mayo Clinic Proceedings (IF 11.1): 1
- mBio (IF **6.78**): 3
- MMWR Morb Mortal Weekly Report (IF **17.58**): 2
- MMWR Recommendations and Reports (IF 33.79): 2
- Nature Communications (IF 12.12): 2
- New England Journal of Medicine (IF 91.24): 8
- Pathogens (IF 7.46): 1
- Telemedicine Report (IF 5.231): 1
- Viruses (IF **5.71**): 4

#### CENTERS

#### The Texas Developmental Center for AIDS Research (Texas D-CFAR)

The Texas D-CFAR was funded by NIH in April 2021 and is administratively housed in the Section of Infectious Diseases. Dr. Giordano is the Director of the Texas D-CFAR. The Texas D-CFAR supports the overall mission of the national CFAR program by facilitating high-priority HIV research and supporting the effort to end the HIV epidemic in the US. Three institutions collaborate in this D-CFAR: Baylor College of Medicine in Houston, The University of Texas Health Science Center at Houston, and the Texas Biomedical Research Institute in San Antonio. The Texas D-CFAR has focused its activities in the five-year funding period on the research theme "Ending HIV and Optimizing HIV Health in Texas." To accomplish its goals, the Texas D-CFAR:

- 1. Provides organizational and financial management and facilitates activities and programs that strengthen and enrich the D-CFAR research and intellectual environment.
- 2. Supports targeted high-priority interdisciplinary pilot research projects, assists in responding to new HIV related research initiatives, and facilitates research on ending HIV and improving health of PWH in Texas.
- 3. Provides state-of-the-art expertise, advice and services to facilitate the range of HIV-related research for D-CFAR investigators. The Texas D-CFAR has an Administrative Core, a Developmental Core, a Basic Science Core and a Clinical and Biostatistics Core to meet investigator needs and catalyze innovative research.

The scientific cores build on outstanding strengths in virology, non-human primate resources, clinical trials research and biostatistics. The D-CFAR engages a Community Advisory Board and Internal and External Advisory Boards for guidance. The Community Advisory Board coupled with outstanding institutional support, the D-CFAR stimulates new research and collaborations among basic, translational, clinical, health services and public health researchers. The D-CFAR significantly advances knowledge needed to end HIV and improve the health of PWH in Texas and similar areas, train the next generation of scientists, and grow into a full CFAR, thereby contributing to ending the HIV epidemic in Texas, the U.S. South, and beyond.

#### Vaccine Research Center at Baylor College of Medicine

The Vaccine Research Center promotes human health by developing effective methods for treating and preventing infectious diseases through clinical and laboratory research and educational activities. This center is focused on supporting existing vaccine and antimicrobial research programs that are ongoing at BCM, including preclinical and clinical programs. The group supports investigators and clinical collaborators who have expertise and capabilities for developing cutting edge programs in systems biology, immunogenetics, molecular virology and cellular immunology. The initiative expands vaccine and antimicrobial development programs in both animal models and human volunteer research programs so that hypothesis-driven research can be initiated and supported. The center provides a critical mass in bioinformatics expertise for analyzing and providing statistical support for systems biology and immunogenetics research. This expands and codifies an educational program designed to train the next generation of vaccinologists.

The Vaccine Research Center is home to one of nine NIH-sponsored Vaccine and Treatment Evaluation Units (VTEUs); one of five U.S. Influenza Vaccine Effectiveness Units (laboratory component); a U01 grant for evaluation of predictors of recurrent wheezing/asthma in infants; a site for screening and evaluation of antivirals and vaccines for prevention and treatment of paramyxovirus infections (such as respiratory syncytial virus, or RSV) using in vitro and animal models. It has taken a leadership role in the US response to the novel coronavirus pandemic caused by the Severe Acute Respiratory Coronavirus-2 (SARS CoV-2) and the response to the Monkeypox outbreak in the US in 2022.

Infectious Diseases faculty who are members of the Vaccine Research Center include Dr. Hana El Sahly (PI), Robert Atmar, Dr. Wendy Keitel, and Dr. Jennifer Whitaker.



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