

A photograph of the Baylor St. Luke's Medical Center building at dusk. The building is a modern, multi-story structure with a glass facade that reflects the sky and surrounding environment. The name "Baylor St. Luke's Medical Center" is visible on the upper left side of the building. A dark blue rectangular box is positioned in the upper right corner of the image, containing the text "Baylor College of Medicine".

Baylor
College of
Medicine

Baylor St. Luke's
Medical Center

DEPARTMENT OF MEDICINE

2022 ANNUAL REPORT

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

Baylor College of Medicine

CHAIR'S MESSAGE

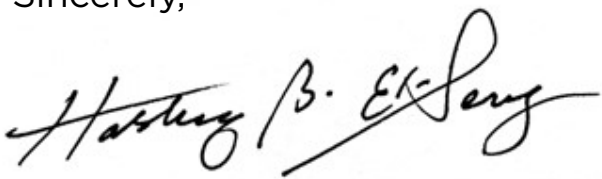
Dear Colleagues:

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.

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,

A handwritten signature in black ink, reading "Hashem B. El-Serag". The signature is fluid and cursive, with the first name "Hashem" and last name "El-Serag" being the most prominent parts.

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



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 Winkelmayr, 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 EPIDEMIOLOGY AND POPULATION SCIENCES

SECTION ACCOMPLISHMENTS

- The Section's annual grant funding was \$13.1 million; The Cancer Prevention & Research Institute of Texas (CPRIT) funded \$4.8 million.
- Hoda Badr, Ph.D., and Martha Mims, M.D. (hematology-oncology) received a new R01 grant, "OPTIMISE: A shared care approach for improving comprehensive care of cancer patients with comorbidities in a safety-net system." Dr. Badr also received a new R21 grant, "Adaptation and Evaluation of SHARE: A Palliative Care Intervention for Head and Neck Cancer Patients and their Caregivers."
- Elaine Symanski, Ph.D., received a new R01, "Source-specific multi-pollutant exposures and the neighborhood context in disparities in stillbirth." She continues to serve as the contact PI for the Maternal and Infant Environmental Health Riskscape, a collaboration with Texas Southern University that includes pilot awards.
- Aaron Thrift, Ph.D., received a cancer prevention award, "Optimizing population selection for primary (*Helicobacter pylori* screening) and secondary (endoscopic screening and surveillance) prevention of gastric cancer," from the Cancer Prevention & Research Institute of Texas.
- A new Core for population studies was established under the leadership of Abi Oluyomi, Ph.D., and Hoda Badr, Ph.D., and is initially being supported by the Dan L. Duncan Comprehensive Cancer Center. The Core promotes geospatial analytics, informatics, and design for population and behavioral studies.
- The Section played a leading role developing several initiatives related to cirrhosis and hepatocellular carcinoma. Chris Amos, Ph.D., and Aaron Thrift, Ph.D., led the Data Analysis Core of the Prevention of Hepatocellular Carcinoma Related to Metabolic Syndrome P01, led by Hashem El-Serag, M.D.. Dr. Thrift leads the Informatics core for The Texas Collaborative Center for Hepatocellular Cancer (TeCH), funded by CPRIT.
- Several Section members continue to be very actively involved in managing of large center grants. Dr. Elaine Symanski serves as a PI of the Center for Precision Environmental Health, supported by NIEHS, and Dr. Amos, Dr. Thrift, Dr. Whitworth, and Dr. Oluyomi also have leadership roles in this grant. Dr. Amos serves as Associate Director for Population and Quantitative Science. Dr. Badr serves as the Program Leader for Cancer Prevention and Population Sciences at the Dan L. Duncan Comprehensive Cancer Center.
- Dr. Hoda Badr and the Baylor CEAL team partnered with Harris County Precinct 2 Commissioner Adrian Garcia's office to design "Día de la Salud," a free community health fair for the whole family.



SECTION CHIEF
Christopher Amos, Ph.D.



Community health fair takes a “whole family” approach to providing COVID-19 vaccines and healthcare needs.



Dr. Badr and the Baylor community hosted a health fair in Aldine, Texas.

FACULTY

Section Leadership

- Christopher Amos, Ph.D., Chief
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FACULTY

Professor

- Christopher Amos, Ph.D.
- Yong Li, Ph.D.

Associate Professor

- Hoda Badr, Ph.D.
- Chao Cheng, Ph.D.
- Ivan Gorlov, Ph.D.
- Olga Gorlova, Ph.D.
- Charles Minard, Ph.D.
- Bo Peng, Ph.D.
- Aaron Thrift, Ph.D.
- Kristina Whitworth, Ph.D.

Assistant Professor

- Jinyoung Byun, Ph.D.
- Kristina Dahlstrom, Ph.D.
- Younghun Han, Ph.D.
- Yafang Li, Ph.D.
- Yanhong Liu, Ph.D.
- Abiodun Oluyomi, Ph.D.
- Musaffe Tuna, Ph.D.

Instructor

- Xinfang Yu, Ph.D.
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HONORS AND ACHIEVEMENTS

Chris Amos, Ph.D.

- Member, Board of Scientific Counselors, National Human Genome Research Institute
- Editor, Current Epidemiology Reports – Statistical Genetics
- Editor, Genes and Immunity
- Editor, Human and Molecular Genetics

Hoda Badr, Ph.D.

- Public Member Elect, American Board of Anesthesiology (ABA) Board of Directors
- Advisory Board Member, Cancer Caregiver Survivorship Program Development, Cancer Support Community
- Expert Advisory Council Member, National Alliance for Caregiving, Promoting Culturally Responsive Resources and Support for Family Caregivers in Diverse Communities

Yong Li, Ph.D.

- Member, American Association for the Advancement of Science
- Chair, Department of Defense Peer Reviewed, Cancer Program Translational Team Science Award Panel 2
- Chair, Department of Defense Peer Review Cancer Program Lymphoma Panel 1
- Member, NIH Cancer Biomarker Study Section

Aaron Thrift, Ph.D.

- Invited Lecturer, Digestive Disease Week, “Understanding current trends in gastric cancer and key risk factors for disease” San Diego, CA
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RESEARCH ACTIVITIES

Grants

Christopher Amos, Ph.D.

- Foundation ARC (France): Genexposomic Cohort – Canc’Air Project; \$43,586 [subcontract to Institut National De La Sante ET DE LA Recherche Medicale (France)]
- Tempus: Tempus Priority Study Agreement Baylor College of Medicine; \$60,000
- NCI: Integrative Analysis of Lung Cancer Etiology and Risk; \$228,106
- NCI: Leader of the Data Analysis Core, Prevention of Hepatocellular Carcinoma Related to Metabolic Syndrome, El-Serag HB, PI; \$5,698,827

Hoda Badr, Ph.D.

- NCI: OPTIMISE: A Shared Care Approach for Improving Comprehensive Care of Cancer System; Badr/Mims, MPI; \$3,288,670
- ACS: Determinants of Disparities in Post-Surgical Outcomes in GI Cancer; \$1,068,750

Yanhong Liu, Ph.D.

- NIH: Evaluating Etiological Impact of Metatranscriptomic and Immunological Features for Lung Cancer; \$160,000

Charles Minard, Ph.D.

- TDSHS: Workplace Violence Against Nurses Grant Program (subcontract to TCH); \$8,700

Aaron Thrift, Ph.D.

- CPRIT: Optimizing Population Selections for Primary (Helicobacter Pylori Screening) and Secondary (Endoscopic Screening and Surveillance) Prevention of Gastric Cancer; \$1,920,700
- NCI: Prevention of Hepatocellular Carcinoma Related to Metabolic Syndrome; El-Serag HB, PI, National Cancer Institute; \$5,698,827
- CPRIT: Novel Metabolomics and Radiomics for Predicting HCC Risk, El-Serag HB, PI; \$1,995,127

Kristina Whitworth, Ph.D.

- NIH: Study of Cleaners in San Antonio: Immunologic and Inflammatory Responses to Total Volatile Organic Compound (VOC) Exposure (subcontract to UTHSC); \$490,061

Publications (82)

- | | |
|---|---|
| • American Journal of Human Genetics (IF 11.042): 1 | • Blood Cancer Journal (IF 9.812): 3 |
| • American Journal of Cancer Research (IF 5.942): 2 | • BMC Cancer (IF 4.638): 1 |
| • American Journal of Gastroenterology (IF 12.045): 2 | • BMC Genomics (IF 4.547): 2 |
| • American Journal of Hematology (IF 13.265): 4 | • Breast Cancer Research (IF 8.408): 1 |
| • American Journal of Infection Control (IF 4.303): 1 | • British Journal of Cancer (IF 9.075): 2 |
| • Annals of Behavioral Medicine (IF 4.871): 1 | • British Journal of Ophthalmology (IF 5.908): 1 |
| • Antioxidants (Basel) (IF 7.675): 1 | • Cancer Epidemiology Biomarkers and Prevention (IF 4.344): 5 |
| • Autophagy (IF 13.391): 1 | • Cancer Medicine (IF 4.711): 1 |
| • Biomedicines (IF 4.757): 1 | • Cancer Research (IF 13.312): 3 |
| • Blood (IF 25.476): 1 | • Cancer Science (IF 6.518): 1 |
| • Blood Advances (IF 7.637): 1 | • Cancer Treatment Reviews (IF 13.608): 1 |

- Cancers (IF **6.575**): 2
- Citizen Science: Theory and Practice Journal (IF **4.50**): 1
- Clinical and Translational Medicine (IF **8.554**): 1
- Clinical Cancer Research (IF **13.801**): 1
- Clinical Gastroenterology and Hepatology (IF **13.576**): 2
- Current Problems in Cardiology (IF **16.464**): 1
- Diabetes Research and Clinical Practice (IF **8.18**): 2
- Environmental Pollution (IF **9.988**): 1
- Epidemiology (IF **4.86**): 1
- Epidemiology and Health (IF **5.919**): 1
- European Journal of Medical Research (IF **4.981**): 1
- Frontiers in Cell and Developmental Biology (IF **6.081**): 1
- Frontiers in Immunology (IF **8.786**): 2
- Frontiers in Oncology (IF **5.738**): 1
- Gastroenterology (IF **33.883**): 1
- Gastrointestinal Endoscopy (IF **10.396**): 2
- Genetics in Medicine (IF **8.864**): 1
- Genome Medicine (IF **15.266**): 1
- Genome Research (IF **9.438**): 1
- Genomics (IF **4.31**): 1
- Gut (IF **31.793**): 1
- Hepatology (IF **17.298**): 1
- Human Genetics (IF **5.881**): 2
- Human Molecular Genetics (IF **5.121**): 2
- International Immunopharmacology (IF **5.714**): 1
- International Journal of Cancer (IF **7.316**): 2
- International Journal of Hygiene and Environmental Health (IF **4.379**): 1
- International Journal of Molecular Sciences (IF **6.208**): 2
- JNCI-Journal of the National Cancer Institute (IF **11.816**): 3
- Journal of Clinical Sleep Medicine (IF **4.324**): 1
- Journal of Experimental and Clinical Cancer Research (IF **11.16**): 1
- Journal of Hazardous Materials (IF **14.224**): 1
- Journal of Hepatology (IF **30.083**): 4
- Journal of Infection and Public Health (IF **7.537**): 1
- Journal of Neuro-Oncology (IF **4.506**): 1
- Journal of Thoracic Oncology (IF **20.121**): 1
- Journals of Gerontology - Series A Biological Sciences and Medical Sciences (IF **6.591**): 1
- Laboratory Investigation (IF **5.502**): 2
- Molecular Cancer (IF **41.444**): 1
- Molecules (IF **4.927**): 1
- Nature (IF **69.504**): 2
- Nature Communications (IF **17.694**): 2
- Nature Genetics (IF **41.307**): 1
- Neoplasia (IF **6.218**): 1
- Neuro-Oncology (IF **13.029**): 1
- Neuro-Oncology Advances (IF **10.091**): 1
- Nicotine & Tobacco Research (IF **5.825**): 1
- NPJ Precision Oncology (IF **10.092**): 1
- Nutrients (IF **6.706**): 2
- Oncogene (IF **8.756**): 1
- Oncoimmunology (IF **7.723**): 1
- Pigment Cell & Melanoma Research (IF **4.159**): 1
- PLOS Computational Biology (IF **4.779**): 1
- PLOS Medicine (IF **11.613**): 2
- Preventive Medicine (IF **4.637**): 1
- Research and Practice in Thrombosis and Haemostasis (IF **4.44**): 1
- Scientific Reports (IF **4.996**): 9
- The Journal of Allergy and Clinical Immunology: In Practice (IF **14.290**): 3
- Translational Oncology (IF **4.803**): 1
- Vaccines (Basel) (IF **4.961**): 3

Books and Book Chapters

Christopher Amos, Ph.D.

- Christiani D, Amos CI. Chapter 74: Lung Cancer: Epidemiology. In *Murray and Neidel's Textbook of Respiratory Medicine*, Seventh Edition, Ed. V. Courtney Broaddus, Joel D. Ernst, Talmadge E. King, Jr. Stephen C. Lazarus, Kathleen F. Sarmiento, Lynn M. Schnapp, Renee D. Stapleton, Michael B. Gotwa. Pp 1018-1028, Elsevier Health Sciences, Philadelphia, May 28, 2021.

Hoda Badr, Ph.D.

- Badr H. Couple Relationships and Cancer In: Carr BI, Steel JL, editors. *Psychological aspects of cancer: A guide to emotional and psychological consequences of cancer, their causes and their management*, 2nd Ed. New York, NY: Springer; 2022, Chp 3, pp 41-52.

CENTERS

Institute for Clinical and Translational Research

The Institute for Clinical and Translational Research (ICTR) managed scientific reviews for all new human subjects and protocols to evaluate the scientific and institutional value, prioritize studies and expedite their deployment in clinical venues. ICTR also helped to deploy the Datathon, which provided data for quality improvement – and population science-related studies. Data was provided from the Faculty Group Practice and Baylor College of Medicine data and Baylor St. Luke's Medical Center to qualifying investigative teams. Next year, the Datathon will also embrace research-related projects. The ICTR facilitated the purchase of i2b2, a software environment that facilitates access to de-identified population-level information about cohorts derived from the faculty group practice at Baylor College of Medicine and Baylor St. Luke's Medical Center. The ICTR also organized training programs for i2b2 and slicer/dicer, software used by clinicians for similar purposes of identifying patients for studies.



The 2022 Epidemiology and Population Sciences Faculty and Fellows.

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