

12th Annual

Research Day



June 11-12

2024

Texas Medical Center

Baylor
College of
Medicine

MICHAEL E. DeBAKEY
DEPARTMENT OF
SURGERY

12th Annual Research Day

We are excited to present our twelfth annual Research Day, which highlights the academic achievements of our department trainees and staff. The mission of the department's research program is to conduct important research in surgical disease that will improve treatment and quality of life for affected patients and to train future leaders in academic surgery. This year's symposium underscores both aspects of this mission by highlighting the exciting research activities of our residents, fellows, staff, and students. Our trainees and staff will present work that spans our divisions and affiliated hospitals. Their accomplishments also reflect the outstanding mentorship provided by our faculty members.

Venue

**Jan and Dan Duncan
Neurological Research Institute
at Texas Children's Hospital
(Duncan NRI)**
1250 Moursund Street
7th Floor Ting Tsung and
Wei Fong Chao Foundation
Conference Center
Houston, Texas 77030



**Jan and Dan Duncan
Neurological Research Institute**

Book of Abstracts

Attendees with Baylor College of Medicine credentials may view the book of abstracts. Scan the code below.



Program Chairs



Todd K. Rosengart, M.D., M.B.A.
Professor and Chair
Michael E. DeBakey
Department of Surgery
DeBakey-Bard Chair of Surgery
Baylor College of Medicine

Professor of Heart and Vascular Disease
Texas Heart Institute



Livia S. Eberlin, Ph.D.
Associate Professor
and Vice-Chair for Research
Michael E. DeBakey
Department of Surgery
Translational Research and Innovations
Endowed Chair
Baylor College of Medicine

Scientific Committee

Riham Abouleisa, Ph.D.
Ghanashyam Acharya, Ph.D.
Swathi Balaji, Ph.D.
Neal Barshes, M.D., M.P.H.
E. Ramsay Camp, M.D.
Johnny Chen, M.D., Ph.D.
Ramiro Fernandez II, M.D.
N. Thao N. Galvan, M.D., MPH
Ravi Ghanta, M.D.
Erin Greenleaf, M.D., M.S.
Kimberly Holloway, Ph.D.
Hee-Jin Jang, M.D., Ph.D.
Lara Landry, Ph.D., PharmD
Hyun-Sung Lee, M.D., Ph.D.
Yanming Li, Ph.D.
Samer Mattar, M.D.
Tamer Mohamed, Ph.D.
Nandan K. Mondal, Ph.D.
Bijan Najafi, Ph.D., MSc.
Abbas Rana, M.D.
Hu Ying Shen, M.D., Ph.D.

Crystal Shin, Ph.D.
James W. Suliburk, M.D.
Deborah Surman, M.A.
Sanjeev Vasudevan, M.D.
Chad Wilson, M.D., M.P.H.
Amy Wood, M.P.H.
Sarah Woodfield, Ph.D.
Yuan Xu, M.D., Ph.D.
Qizhi Cathy Yao, M.D., Ph.D.
Feibi Zheng, M.D., M.B.A.

Planning Committee

Ashley Benning
Jaye Chambers
Scott Holmes, CMI
Jordan Lockhart, BS
Georgia Rochester
Scott Weldon, MA, CMI

Tuesday, June 11, 2024

4:00-6:00pm **Poster Reception**

Resident and Fellow Poster Competition

Poster #1

“Culture-Free Identification of Microbes in Seconds Directly from Clinical Samples using the MasSpec Pen Technology”

Dr. Manoj Kumar

Mentor: Dr. Livia S. Eberlin

Poster #2

“Enhancing Gait Performance in Frail Hemodialysis Patients through a 12-Week Intradialytic Electrical Stimulation in Plantar Area: A Challenging Walking Task Approach in a Randomized Controlled Trial”

Dr. Myeounggon Lee

Mentor: Dr. Bijan Najafi

Poster #3

“Smart Offloading for Diabetic Foot Ulcers: Enhancing the Wound Healing with Offloading Devices using Smart Sensor”

Dr. Gozde Cay

Mentor: Dr. Bijan Najafi

Poster #4

“The Balance Between Family Goals and Career Decisions Amongst Surgical Trainees”

Dr. Sarah Peiffer

Mentor: Dr. Alice King

Poster #5

“Critical Role of Endothelial Injury in the Initiation of Aortic Dissection”

Dr. Chen Zhang

Mentor: Dr. Ying H Shen

Poster #6

“Contemporary Experience with the Use or Repair of Homograft Roots in 130 Proximal Aortic Repairs”

Dr. Monika Halas

Mentor: Dr. Joseph S. Coselli

Poster #7

“Pediatric Synovial Sarcoma: Incidence and Survival in the United States, 2001-2020”

Dr. Brian Hickner

Mentor: Dr. Ekene Onwuka

Poster #8

“Resident Perceptions of Robotic Surgery Training at a Single Institution”

Dr. Sophia Williams-Perez

Mentor: Dr. Derek Erstad

Poster #9

“Reoperation After Prior Aortic Root Replacement: Evolution of Technique Over 30 Years”

Dr. Anna Xue

Mentor: Dr. Joseph S. Coselli

Poster #10

“Breadth of Care: Treatment of Pediatric Patients with Portal Vein Thrombosis”

Dr. Emma Hills

Mentor: Dr. N. Thao N. Galvan

Poster #11

“Managing Bilateral Discontinuous Pulmonary Arteries of Ductal Origin in Single Ventricle Physiology”

Dr. Raymond Lopez

Mentor: Dr. Iki Adachi

Poster #12

“A Chemoresistance Signature to Predict FOLFIRINOX Sensitivity in Pancreatic Adenocarcinoma”

Dr. Zachary Gao

Mentor: Dr. E. Ramsay Camp

Poster #13

“Multi-center Validation of a Novel Quality Improvement Protocol to Avoid Post-ileostomy Morbidity from Dehydration, while Allowing Earlier Discharge”

Dr. Stephanie Keeling

Mentor: Dr. Atif Iqbal

Poster #14

“Investigating the Burden of Traumatic Injuries and Access to Trauma Centers in Rural Riyadh”

Dr. Lubna Khan

Mentor: Dr. Norah Alsubaie

Student Poster Competition

Poster #15

“Increased Lower Extremity Amputation Rates for Medicaid Patients with Primary Chondrosarcoma”

Luke J Dotson

Mentor: Dr. Russell A. Ward

Poster #16

“Pediatric Kidney Intent-to-Treat Survival Index”

Josephine Schmidt

Mentor: Dr. Abbas Rana

Poster #17

“Essential Surgery Skills Course: A One Week Training Program to Prepare Surgeons for Humanitarian Deployment”

Kala Pham

Mentor: Dr. Rachel W. Davis

Poster #18

“Intra-Arterial Magnesium Therapy After Mechanical Thrombectomy in Acute Ischemic Stroke”

Maximillian Feygin

Mentor: Dr. Omar Tanweer

Poster #19

“Unlocking the Potential of Urinary Exosomes: A Prospective Study in Predicting Infections after Mechanical Circulatory Support”

Adel Hassan

Mentor: Dr. Nandan K. Mondal

Poster #20

“Soluble Mesothelin-Related Protein (SMRP) as a Predictor for Response and Survival in Pleural Mesothelioma Patients Receiving Checkpoint Immunotherapy”

Sonali Mitra

Mentor: Dr. Hyun-Sung Lee

Poster #21

“Mapping the Molecular Landscape of 9p21 Loss in Bladder Cancer through Desorption Electrospray Ionization Mass Spectrometry Imaging”

Meredith Spradlin

Mentor: Dr. Livia S. Eberlin

Poster #22

“Pharmacological or Genetic Inhibition of LTCC Promotes Cardiomyocyte Proliferation through Inhibition of Calcineurin Activity”

Nourhan Baraka

Mentor: Dr. Riham R. Abouleisa

Poster #23

“Optimal Sequencing of Chemotherapy and Surgery for Pancreas Cancer”

Thao-Mi Ha

Mentor: Dr. William E. Fisher

Poster #24

“Can we use the MasSpec Pen Technology for Molecular Identification of MPNST and Surgical Margin Assessment?”

Ashley Montgomery

Mentor: Dr. Livia S. Eberlin

Poster #25

“Outcomes of Thoracoabdominal Aortic Aneurysm Repair in Patients with and without Peripheral Vascular Disease”

Alexis Nichols

Mentor: Dr. Subhasis Chatterjee

Poster #26

“An Index to Predict Waitlist Time for Pediatric Lung Transplant Candidates”

Jose Ramirez

Mentor: Dr. Abbas Rana

Poster #27

“Mechanical Tension Induced Changes in Dermal Fibroblasts PKM2 and Hsp27 Phosphorylation Regulates Fibrotic Responses”

Pranav Bommekal

Mentor: Dr. Swathi Balaji

Poster #28

“Mass Spectrometry Imaging Serves as a Powerful Tool to Predict Response to Immunotherapy in Triple Negative Breast Cancer”

Keziah Liebenberg

Mentor: Dr. Livia S. Eberlin

Poster #29

“Deep Vein Thrombosis after Lung Transplantation: A Contemporary Evaluation of Risk Factors”

Kenyon Agrons

Mentor: Dr. Ramiro Fernandez II

Clinical, Research, and Education Staff Poster Competition

Poster #30

“Assessing Cognitive Frailty Remotely: An Innovative, Cost-Effective Tool and Objective Method to Identify Cognitive Frailty Individuals Using AI”

David A De Leon-Garza

Mentor: Dr. Bijan Najafi

Poster #31

“WGCNA Analysis Highlighted Neovascularization Mediated by Dual-Acting Lignin Composites with Sustained Oxygenation and ROS-scavenging in Promoting Diabetic Wound Healing”

Tanuj Prajapati

Mentor: Dr. Swathi Balaji

Poster #32

“Neuromuscular Electrical Stimulation for Lower Extremity Muscle Deconditioning in Lung Transplant Recipients”

Miguel Bargas-Ochoa

Mentor: Dr. Bijan Najafi

Poster #33

“Analytical Validation of Mass Spectrometry Imaging for Classification of Thyroid Fine Needle Aspiration Biopsies”

Rachel DeHoog

Mentor: Dr. James W. Suliburk

Poster #34

“Transcutaneous Electrical Nerve Stimulation for Fibromyalgia-like Syndrome in Patients with Post-Acute Sequelae of Sars-Cov-2: A Pilot Randomized Controlled Trial”

Tina Phan

Mentor: Dr. Bijan Najafi

Poster #35

“Comparative Assessment of In Silico Genotyping Tools and the Influence of HLA Variants on Immunotherapy Efficacy in Malignant Pleural Mesothelioma”

Priyanka Ranchod

Mentor: Dr. Hyun-Sung Lee

Poster #36

“Soluble MHC Immunopeptidomes Reflect Tumor-Immune Landscape in Pleural Mesothelioma”

Jong Min Choi

Mentor: Dr. Hyun-Sung Lee

Poster #37

“Multi-Level Thrombotic/Embolic Burden and Its Role in Sex-Related Outcomes in Acute Limb Ischemia”

Ilse Torres Ruiz

Mentor: Dr. Jayer Chung

Poster #38

“Stemness Factors Sall4 and Gata4 induce Partially Reprogrammed Stem-Like Cells in Cardiac Fibroblasts: A Potential Mechanism in Post-Infarct Cardiac Repair”

Saliha Pathan

Mentor: Dr. Jianchang Yang

Poster #39

“Magnetic Localization Approach: Prospective Evaluation of Magseed® Marker for Axillary Lymph Node Metastases in Breast Cancer Patients”

Margarita Riojas Barrett

Mentor: Dr. Alastair Thompson

Poster #40

“Unveiling Prognostic Circulating Proteomes in Patients with Pleural Mesothelioma Receiving Checkpoint Immunotherapy”

Claire Lee

Mentor: Dr. Hyun-Sung Lee

Poster #41

“Identification of Normal and Abnormal DNA Methylation-Expression Patterns in Aggressive Meningiomas”

Sean Lau

Mentor: Dr. Patel Akash

Poster #42

“Exploring the Feasibility of a Tele-exergame Exercise Program to Prevent Deconditioning in Hospitalized Veterans”

Naima Rodriguez

Mentor: Dr. Bijan Najafi

Poster #43

“Transcutaneous Electrical Nerve Stimulation (TENS) for patients with Chemotherapy Induced Peripheral Neuropathy (CIPN): a Randomized Control Trial Protocol”

Bernardo Martinez-Leal

Mentor: Dr. Bijan Najafi

Poster #44

“Improving Patient Reported Outcomes by Implementing a Structured Pre- and Postoperative Activity Program in Patients Undergoing Elective Hernia Repair”

Heather West

Mentor: Dr. Michele Loor

Keynote Speaker

Dr. Daniel Orringer
Associate Professor
NYU Langone Health



Dr. Daniel Orringer is a distinguished neurosurgeon specializing in the treatment of tumors affecting the brain and spinal cord. With a primary focus on tumors located in critical regions responsible for motor and language function, Dr. Orringer is dedicated to ensuring his patients achieve the highest quality of life post-surgery. His approach integrates cutting-edge imaging techniques to precisely target and remove tumors while preserving healthy tissue.

Committed to a comprehensive, multi-disciplinary approach, Dr. Orringer collaborates closely with experts in neurology, neuro-oncology, neuropathology, neuroradiology, and speech and language pathology to provide personalized care for each patient.

Dr. Orringer's academic journey began with a BA in molecular and cell biology from Cornell University, graduating magna cum laude. He then pursued his MD at the Ohio State University, followed by residency training at the University of Michigan. Dr. Orringer further honed his expertise through a fellowship in neurosurgical oncology at Brigham and Women's Hospital and Harvard Medical School.

Currently, Dr. Orringer serves as a neurosurgeon at NYU Langone's Brain and Spine Tumor Center, a prestigious role within the renowned Perlmutter Cancer Center. His unwavering dedication to advancing patient care and outcomes underscores his commitment to excellence in neurosurgery.

Wednesday, June 12, 2024

7:00-8:00am Registration and Breakfast

Research Day Symposium

8:00-8:30am Welcome

Dr. Todd K. Rosengart

College Remarks

Dr. Carolyn L. Smith

Opening Remarks

Dr. Livia S. Eberlin

Office of Surgical Research Highlights

Dr. Lara Landry

Introduction of Keynote Speaker

Dr. E. Ramsay Camp

8:30-9:20 Keynote Address

Cancer Revealed: Seeing the Invisible in Brain
Tumor Surgery - Dr. Daniel Orringer

9:20-9:30 University of Alabama at
Birmingham Exchange Resident
Presentation

Feasibility of Post-operative Telehealth for Pediatric
Surgical Patients in a Low-Resource Setting
Dr. Madhushree S. Zope

9:30-10:20 **Resident and Fellow Quick Shot
Scientific Presentations**

Moderators: Drs. Eric Silberfein
and Sarah E. Woodfield

“Circulating ADAMTS13: A Promising Predictor of Thromboembolic Events in Heart Failure Patients with Mechanical Circulatory Support”

Dr. Shiyi Li

Mentor: Dr. Nandan Kumar Mondal

“Biodegradable Magnesium Wires Promote Neovascularization and Neuronal Growth for Wound Regeneration”

Dr. Nabila Anika

Mentor: Dr. Swathi Balaji

“TFAM Drives Compensatory Induction of Nuclear-encoded Mitochondrial Genes”

Dr. Fuhai Li

Mentor: Dr. Ying H. Shen

“Robotic Assisted Versus Open Sternotomy Single Vessel Left Internal Mammary Artery to Left Anterior Descending Coronary Artery Bypass Grafting”

Dr. Katherine Nordick

Mentor: Dr. Kenneth K. Liao

“Outcomes in Patients Undergoing Distal Aortic Repair to Treat Late Anastomotic Pseudoaneurysm Development”

Dr. Ryan Nowrouzi

Mentor: Dr. Joseph S. Coselli

“The role of YAP-1 on Hepatoblastoma Vascular Invasion”

Dr. Andy Espinoza

Mentor: Dr. Sanjeev A. Vasudevan

“Shifting Paradigm: Outcomes with Neoadjuvant Chemotherapy for cT4 and cN2 Colon Cancer”

Dr. Bennett Hartley

Mentor: Dr. Derek J. Erstad

“Determinants of Academic Success in Pediatric Surgeon-Scientists”

Dr. Michael B. Gyimah

Mentor: Dr. Lily Cheng

10:20-10:35 **Break – Visit Posters**

10:35-11:15 **Resident and Fellow Clinical
Research Abstracts of Distinction**

Moderators: Drs. Shanda Blackmon
and James W. Suliburk

“Evaluating Access to Trauma Care in Houston to Inform Supportive Policies”

Dr. Katayoun Madani

Mentor: Dr. Rachel W. Davis

“Heart Evaluation and Related Transplant Survival (HEART) Score: A Novel Method to Predict Patient Survival Following Heart Transplantation”

Dr. Tyler Guinn

Mentor: Dr. Kenneth K. Liao

“Remote Patient Monitoring through Best Buy Health Digital System Could be a Better Alternative to Detect Alterations in Activities of Daily Living Due to Falls”

Dr. Abderahman Ouattas

Mentor: Dr. Bijan Najafi

“Outcomes of Gastroschisis and Omphalocele Treated at Children’s Surgery Verified Centers in Texas”

Dr. Alexander Mina

Mentor: Dr. Alice King

11:15-11:55 **Resident and Fellow Basic
Science Abstracts of Distinction**

Moderators: Drs. Swathi Balaji and R. Taylor Ripley

“Coagulopathy and Tumor Progression in Pancreatic Ductal Adenocarcinoma (PDAC)”

Dr. Dongliang Liu

Mentor: Dr. Qizhi Cathy Yao

“Improving Lung Cancer Diagnosis: Exploring the Potential of the MasSpec Pen in Non-small Cell Lung cancer Detection and Subtyping”

Dr. Yasmin Shanneik,

Mentor: Dr. Livia S. Eberlin

“Ad-SGE-DKK3 Gene Therapy Against Resistance to Immune Checkpoint Blockade in Malignant Mesothelioma”

Dr. Ji Seon Shim

Mentor: Dr. Hyung-Sung Lee

“CD36-Retinoic Acid-FABP5-PPAR δ Signaling Axis Modulates Cardiomyocytes’ Ability to Proliferate in Neonatal Mice”

Dr. Abou Bakr Salama

Mentor: Dr. Tamer Mohamed

11:55-12:35pm

Student Quick Shot Presentations

Moderators: Drs. Tamer Mohamed
and Crystal Shin

“Neoadjuvant Versus Adjuvant Chemotherapy for the Treatment of Osteosarcoma”

Trevor Trudeau

Mentor: Dr. Russell Ward

“Creating a Risk Score for Prolonged Length of Stay Following Pediatric Lung Transplants”

Ruhi Thapar

Mentor: Dr. Abbas Rana

“Impact of a Preclinical Elective Course and Surgical Skills Workshops on Student Preparation for Surgical Clerkships”

Srinithya Gillipelli

Mentor: Dr. Cary Hsu

“Postoperative Pain Management During Orthognathic Surgery in Cleft Lip and Palate Patients Using Liposomal Bupivacaine”

Yang Ding

Mentor: Dr. Edward Buchanan

“Case Selection in Transoral Endoscopic Thyroidectomy and Parathyroidectomy Vestibular Approach (TOETVA and TOEPVA)”

Mohan Saxena

Mentor: Dr. Raymon H. Grogan

“An Indocyanine Green-based Liquid Biopsy Test for Circulating Tumor Cells for Pediatric Liver Cancer”

Priyanka Rao

Mentor: Dr. Sarah Woodfield

12:35-1:15 **Clinical, Research, and Education
Staff Quick Shot Presentations**
Moderators: Dr. Atif Iqbal and Holly Clayton

“Activation of a GPCR, ORL1 receptor: A Novel Therapy to Prevent Heart Failure Progression”

Beverly Dixon

Mentor: Dr. Megumi Mathison

“Heart Slice-Based Bioreactor Co-Culture System to Study Cardio-Oncology”

Kamal Abou Farraj

Mentor: Dr. Tamer Mohamed

“Improving Depression Detection and Measuring the Impact of Depression upon Survival in Chronic Limb-threatening Ischemia (CLTI)”

Cuneyt Koksoy

Mentor: Dr. Jay Chung

“Fistula Risk Score as a Predictor of Successful early discharge after pancreaticoduodenectomy”

Erick Carrasco Barcnas

Mentor: Dr. William E. Fisher

“Education and Understanding in Breast Reconstruction”

Katie Cardenas

Mentor: Dr. Marco Maricevich

“Unique Morphometric and Histopathologic Features of Hearts in Pediatric Cirrhosis”

Dalia Bashir

Mentor: Dr. Moreshwar Desai

1:15-1:30 **Research Day Awards**

Department of Surgery Research Seed Grant Winners

2024 Department of Surgery Quality Improvement
Seed Grant Awards for Advanced Practice Providers

Celebrating Excellence
in Resident Education,
Patient Care, Research and Innovation

Baylor
College of
Medicine