



14<sup>th</sup> Annual

# Research Day

April 7-8

2026

Baylor College of Medicine

Baylor  
College of  
Medicine

MICHAEL E. DeBAKEY  
DEPARTMENT OF  
SURGERY

## 14<sup>th</sup> Annual Research Day

We are excited to present our fourteenth 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.

### Program Chairs



**Todd K. Rosengart, M.D., MBA**

Professor and Chair  
Michael E. DeBakey  
Department of Surgery  
DeBakey-Bard Chair of Surgery  
Baylor College of Medicine  
Professor of Heart & Vascular  
Disease  
Texas Heart Institute



**Livia S. Eberlin, Ph.D.**

Professor and  
Vice-Chair for Research  
Michael E. DeBakey  
Department of Surgery  
Translational Research and  
Innovations Endowed Chair  
Baylor College of Medicine

### Venue

**Baylor College of Medicine**

One Baylor Plaza  
McMillan Auditorium  
and Alkek Lobby  
Houston, Texas 77030

### Scientific Committee

Riham Abouleisa, Ph.D.  
Ghanashyam Acharya, Ph.D.  
Swathi Balaji, Ph.D.  
Neal Barshes, M.D., MPH  
Shanda Blackmon, M.D.  
Ruth Alves Pereria Costa, M.D.  
E. Ramsay Camp, M.D.  
Changyi "Johnny" Chen, M.D.  
Jayer Chung, M.D.  
Holly Clayton, MPAS  
Ronald T. Cotton, M.D.  
Fernanda Cristina Paccola Mesquita, M.D.  
Livia S. Eberlin, Ph.D.  
Moomtahina Fatima, M.D.  
Ramiro Fernandez II, M.D.  
William Fisher, M.D., Ph.D.  
Nhu Thao Nguyen Galvan, M.D.  
Ravi K. Ghanta, M.D., Ph.D.  
Susan Green, MPH  
Erin Greenleaf, M.D.  
Raymon Grogan, M.D.  
Natasha Hansraj, M.D.  
Kimberly Holloway, Ph.D.  
Lyahn Hwang, M.D.  
Atif Iqbal, M.D.  
Hee-Jin Jang, M.D., Ph.D.  
Hyun-Sung Lee, M.D., Ph.D.  
Yanming Li, Ph.D.  
Samer Mattar, M.D.  
Pabel Miah, D.O.  
Angel Moctezuma Ramirez, M.D.  
Tamer Mohamed, Ph.D.  
Nandan K. Mondal, Ph.D.  
Besma Nejm, M.D.  
Steven Norris Palmer, Ph.D.

Abbas Rana, M.D.  
Euberto Mendez Reyes, M.D., MPH  
R. Taylor Ripley, M.D.  
Alejandro Zulbaran y Rojas, M.D.  
Anna Segura, M.D.  
Hu Ying Shen, M.D., Ph.D.  
Erik Suarez, M.D.  
James W. Suliburk, M.D.  
Sanjeev Vasudevan, M.D., Ph.D.  
Deborah Vela, M.D.  
Yaxin Wang Payne, Ph.D.  
Chad Wilson, M.D., MPH  
Amy Wood, MPH  
Sarah Woodfield, Ph.D.  
Yuan Xu, M.D., Ph.D.  
Qizhi "Cathy" Yao, M.D., Ph.D.

### Planning Committee

Jaye Chambers  
Morgan Leann Fields  
Scott Holmes, CMI  
Georgia Rochester  
Holly Shilstone  
John Valenta, Ph.D.  
Maria Vega  
Maria Zueva

Tuesday April 7, 2026

## Poster Session

4:00-6:00pm (Alkek Lobby) see pg. 7

Wednesday April 8, 2026

## Research Symposium

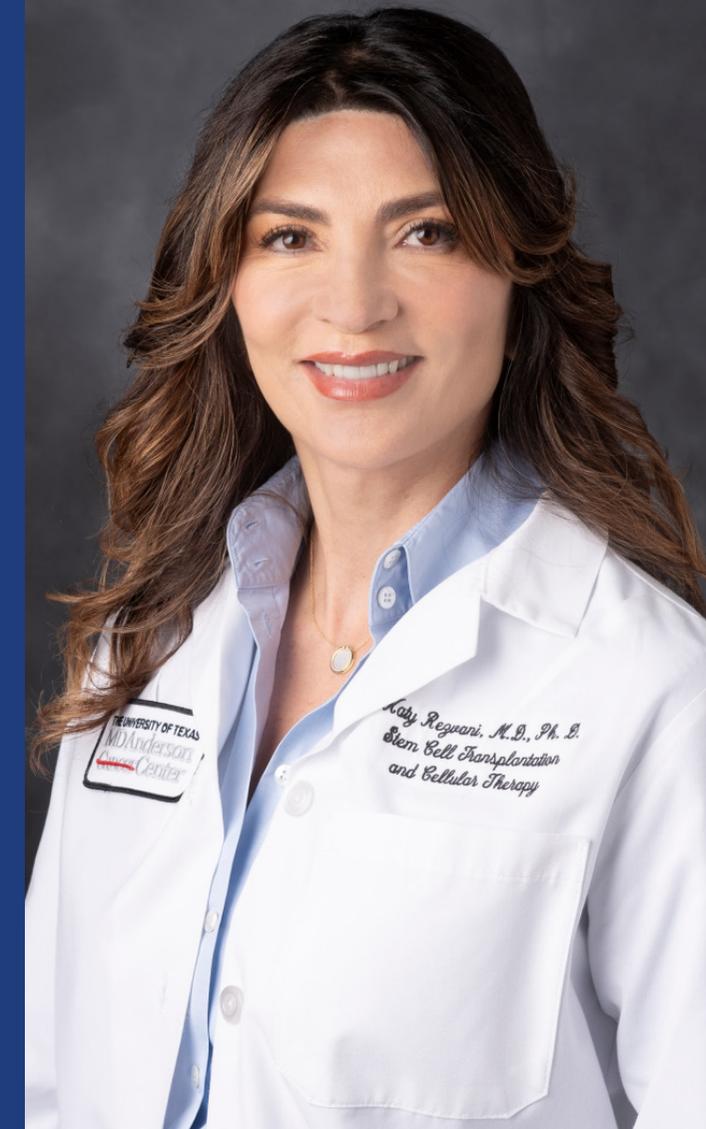
(McMillan Auditorium)

- |             |  |
|-------------|--|
| 6:30-7am    | <b>Registration and Breakfast</b>  |
| 7-7:30am    | Welcome<br>Dr. Todd K. Rosengart<br><br>Surgical Education Remarks<br>Dr. Ronald T. Cotton<br><br>Office of Surgical Research Highlights<br>Dr. Livia S. Eberlin                                   |
| 7:30-8:10am | <b>Keynote Address</b><br>“Engineered NK Cell Therapies: from Bench to Bedside”<br>Dr. Katy Rezvani  |
| 8:10-8:30am | UAB Resident Research Day Exchange Program Introduction<br>Dr. Sanjeev Vasudevan<br><br>Sialylation in Mouse Model of CRC alters metabolism worsening obstruction<br>Dr. Meredith L. Johnson (UAB) |
| 8:30-8:45am | <b>Break - Refreshments</b>  |

## Keynote Speaker Katy Rezvani, M.D., Ph.D.

### “Engineered NK Cell Therapies: from Bench to Bedside”

Dr. Katy Rezvani, is a professor of medicine at The University of Texas MD Anderson Cancer Center, where she serves as the vice president and head of the Cell Therapy Institute for Discovery & Innovation, Barnts Family Distinguished Chair for Cancer Research, and medical director of the GMP Facility. She leads a research lab with a focus on natural killer (NK) cell biology and developing novel NK cell engineering strategies for cancer, with the aim of translating these discoveries to the clinic. Dr. Rezvani completed her medical training at University College London, England and her PhD at Imperial College London. She completed her training in immunology and transplantation biology at the National Institutes of Health, Bethesda, MD. She has co-authored over 250 peer-reviewed publications and received multiple prizes and awards, including the American Society of Hematology *E. Donnall Thomas Award*.



# Abstracts of Distinction Oral Presentation Competition

## 8:45-9:20am **Resident and Fellow - Clinical**

Moderators: Holly Clayton, Dr. Ryan Dumas and Dr. Lyahn Hwang

“How Many Are Enough? Developing Program-Specific Recommendations for Absite Practice Question Use”

**Dr. Emma Burke**

Mentor: Dr. Peter Boedeker

“Playback with a Purpose: Implementing Trauma Video Review for Leadership Development in Surgical Fellowship Training”

**Dr. Abigail B. Smith**

Mentor: Dr. Caitlin Fitzgerald

“Textbook Outcomes following Fenestrated-Branched Endovascular Aortic Repair – A Prospective Non-Randomized Cohort Study”

**Dr. Hannah V. Oden-Brunson**

Mentor: Dr. Gustavo Oderich

## 9:20-9:55am **Student**

Moderators: Drs. Shanda Blackmon, Ramiro Fernandez and Atif Iqbal

“Analysis of Failure to Rescue in Adult Patients Who Undergo Open, Proximal Aortic Repair”

**Kyle Blackburn**

Mentor: Dr. Subhasis Chatterjee

“Structured Real-Time Audit Identifies Barriers to VTE Prophylaxis Compliance”

**Teresa Lyons**

Mentor: Dr. Atif Iqbal

“Evaluation of the MassSpec Pen Technology for Molecular Identification of Soft-Tissue Sarcomas and Surgical Margin Assessment”

**Ashley E. Montgomery**

Mentor: Dr. Livia S. Eberlin

## 9:55 – 10:10am **Break/Refreshments**

## 10:10 -10:45am **Staff**

Moderators: Drs. Jayar Chung, Abbas Rana and D. Taylor Ripley

“Overcoming Therapeutic Resistance in Esophageal Adenocarcinoma”

**Dr. Naren Li**

Mentor: Dr. R. Taylor Ripley

“Engineering and Validation of Novel Cardiomyocyte Cell Line for High Throughput Screening of Mitochondrial Therapeutics”

**Dr. Saliha Pathan**

Mentor: Dr. Ravi Ghanta

“Wearable-Derived Metrics Predict Depression in Patients with Chronic Limb-Threatening Ischemia (CTLI)”

**Dr. Ilse Torres Ruiz**

Mentor: Dr. Jayar Chung

## 10:45-11:20am **Resident and Fellow – Basic Science**

Moderators: Drs. Tamer Mohamed, H. Ying Shen, and Sarah Woodfield

“Identifying Barriers and Facilitators to Receipt of Chemotherapy in Pancreatic Ductal Adenocarcinoma”

**Dr. John C. Johnson**

Mentor: Dr. E. Ramsay Camp

“Combinatorial Gene Therapy Completely Recovers the Cardiac Functions after Myocardial Infarction”

**Dr. Abou Bakr M. Salama**

Mentor: Dr. Tamer Mohamed

“In Vivo Delivery of Sting siRNA via Lipid Nanoparticles: A Therapeutic Strategy for Aortic Aneurysm and Dissection”

**Dr. Sanjib Sarkar**

Mentor: Dr. Hu Ying Shen

## 11:20am-12pm **Presentation of Awards**

# Posters

## Residents and Fellows

### Poster No. 1

“Institutional Descriptive Review of Pediatric Robotic General Surgery: Case Volume and Procedural Diversity”

Dr. Dailen Alonso

Mentor: Dr. Ekene Onwuka

### Poster No. 2

“Effect of Prehospital Pelvic Binders on Patient Outcomes”

Dr. A. Antoine

Mentor: Dr. Chad Wilson

### Poster No. 3

“Facial Nerve Reconstruction Outcomes in the Oncologic Setting”

Dr. Richard Appel

Mentor: Dr. Z-Hye Lee

### Poster No. 4

“The Benefit of Race Neutral EGFR Calculation for Black Patients Awaiting Kidney Transplant: A Single Center Experience of Policy in Practice”

Dr. Alexandra Buda

Mentor: Dr. N. Thao N. Galván

### Poster No. 5

“A New Technique for Decreasing Donor Site Morbidity in Pediatric Free Fibula Transfers to the Upper Extremity”

Dr. Heather R. Burns

Mentor: Dr. William Pederson

### Poster No. 6

“Is More Always Better? Single versus Combination Antibiotic Prophylaxis in Low-Grade Colon Injuries: A Sub-Analysis of an East Multicenter Trial”

Dr. Kayla Callaway

Mentor: Dr. Caitlin Fitzgerald

### Poster No. 7

“Guiding Intraoperative Management: Handheld Mass Spectrometry Capable of Identifying Lung Pathology Based on Molecular Profiles”

Dr. Reginald Chounoune

Mentor: Dr. Shanda Blackmon

### Poster No. 8

“Risk Factors and Outcomes of Relapsed Wilms Tumor”

Dr. Andy F. Espinoza

Mentor: Dr. Sanjeev Vasudevan

### Poster No. 9

“Outcomes of Upper versus Lower Extremity Access among Patients Treated by Multibranched Endovascular Aortic Repair of Complex Aortic Aneurysms in the International Multicenter Aortic Research Group”

Dr. Zemina C. Ferreira

Mentor: Dr. Gustavo Oderich

### Poster No. 10

“Fibroblast Exosome Regulation by Mechanical Tension Influences Scarring Heterogeneity”

Dr. Mary Elizabeth Guerra

Mentor: Dr. Swathi Balaji

### Poster No. 11

“Implantable Epicardial Cell-Based Therapeutic Hydrogel Provide Localized Healing after Myocardial Infarction through Immunomodulation”

Dr. Tyler Guinn

Mentor: Dr. Ravi K. Ghanta

### Poster No. 12

“Histone Deacetylase Inhibition Enhances Chemotherapy Response and Survival in Preclinical Models of Malignant Rhabdoid Tumor”

Dr. Brian T. Hickner

Mentor: Dr. Sanjeev Vasudevan

### Poster No. 13

“Clinical Risk Factors for Chronic Lung Allograft Dysfunction in the Modern Era: A Single Center Cohort Study”

Dr. Emma Hills

Mentor: Dr. Gabriel Loor

**Poster No. 14**

“Burst Wave Laser Lithotripsy of Calcified Heart Valves”

Dr. Nitesh Katta

Mentor: Dr. Thomas Miilner

**Poster No. 15**

“Accelerating Adoption of Watch & Wait in Rectal Cancer: Evidence of a Paradigm Shift across All Ages”

Dr. Stephanie S. Keeling

Mentor: Dr. George Chang

**Poster No. 16**

“Evaluating Gulf Cooperation Council Trauma Care Infrastructure: Key Components and Gaps.”

Dr. Lubna Khan

Mentor: Dr. Hassan Mashbari

**Poster No. 17**

“Technique for Achieving Symmetry in Breast Reduction and Mastopexy after Contralateral Diep Flap Reconstruction”

Dr. Brody W. King

Mentor: Dr. Lucas Dvoracek

**Poster No. 18**

“Molecular Profiling of Pediatric Sarcoma Tissues Using MassSpec Pen and Desi Mass Spectrometry”

Dr. Manoj Kumar

Mentor: Dr. Livia S. Eberlin

**Poster No. 19**

“Fasciocutaneous Flaps Perform Equally in Pediatric Free Tissue Transfer: A 14-Year Single-Institution Review”

Dr. Olivia G. Leonovicz

Mentor: Dr. Jenny Lee Nguyen

**Poster No. 20**

“Celsior Cold Storage Preserves Endothelial Integrity and Reduces Myocardial Edema in Human Hearts from Circulatory Death with Short Warm Ischemia”

Dr. Shiyi Li

Mentor: Dr. Nandan Mondal

**Poster No. 21**

“Von Willebrand Factor (VWF) Promotes Pancreatic Cancer Progression, Thrombosis, and Immune Suppression”

Dr. Dongliang Liu

Mentor: Dr. Riham Abouleisa

**Poster No. 22**

“Indications and Outcomes in Endoscopic Carpal Tunnel Release at a Veteran Affairs Medical Center”

Dr. Raymond A. Lopez

Mentor: Dr. Christine Yin

**Poster No. 23**

“Tissue Perfusion Pressure: A Novel Hemodynamic Measure to Assess Risk of Acute Kidney Injury after Cardiac Surgery”

Dr. Travis J. Miles

Mentor: Dr. Ravi Ghanta

**Poster No. 24**

“National Benchmarks and Disparities in Pediatric Penetrating Head Injury”

Dr. Alexander S. Mina

Mentor: Dr. Pryor Howard II

**Poster No. 25**

“MCL-1 Inhibitors and Antidepressants as Enhancers of Chemotherapy Response in Pleural Mesothelioma”

Dr. Francisco A. Molina-Pelayo

Mentor: Dr. R. Taylor Ripley

**Poster No. 26**

“TAAA Repair among Latinx Patients with Heritable Thoracic Aortic Disease”

Dr. Henry A. Olano-Soler

Mentor: Dr. Vicente Orozco-Sevilla

**Poster No. 27**

“Advanced Practice Providers in Pediatric Plastic Surgery: A Single Institution Analysis of Clinical and Surgical Productivity”

Dr. Matthew J. Parham

Mentor: Dr. Larry Hollier

**Poster No. 28**

“Pediatric Regenerative Peripheral Nerve Interface and Targeted Muscle Reinnervation at the Time of Major Lower Extremity Amputation: 1-Year Outcomes”

Dr. Sofia Perez-Otero

Mentor: Dr. William Pederson

**Poster No. 29**

“Cross-Presentation of Fibroblast-Derived Peptides Drives Immune Checkpoint Inhibitor Associated Myocarditis”

Dr. Ji Seon Shim

Mentor: Dr. Hyun-Sung Lee

**Poster No. 30**

“Preoperative Ultrasound Localization of Biopsy Clip and Localization Marker as an Adjunct to Breast Conserving Surgery: A Practical Strategy to Improve Margin Status and Reduce Excision Rates”

Dr. Annie Snitman

Mentor: Dr. Pabel Miah

**Poster No. 31**

“Yin and Yang Quantifying Postoperative Symmetry in Unilateral Cleft Lip and Palate”

Dr. Raghav Upadhyaya

Mentor: Dr. Amy Xue

**Poster No. 32**

“Novel Surface-Enhanced Raman Spectroscopy (SERS) Fiber-Optic Sensor for Sensitive Detection of Biological Samples for Cancer Diagnosis”

Dr. Nidheesh Velluva Rayaroth

Mentor: Dr. Thomas Milner

**Poster No. 33**

“Mass Spectrometry Imaging of Alzheimer’s Disease Vulnerable and Resilient Neocortical Areas in Postmortem Formalin-Fixed Paraffin-Embedded and Fresh Frozen Human Brains”

Dr. Tassia Venga Mendes

Mentor: Dr. Livia S. Eberlin

**Students****Poster No. 34**

“Urinary Galectin-3 and NGAL Predict Early Renal Outcomes after Left Ventricular Assist Device Implantation”

Rishav Bhattacharya

Mentor: Dr. Nandan Mondal

**Poster No. 35**

“Mechanism-Stratified Complications after Operative Management of Low-Grade Colon”

Dominique I Cope

Mentor: Dr. Caitlin Fitzgerald

**Poster No. 36**

“Exploring Mitogen-Associated Protein Kinases’s (MAPK) Role as a Key Hypoxia Regulator in Extracranial Malignant Rhabdoid Tumors (MRTS)”

Hannah M. Engebretson

Mentor: Dr. Sarah Woodfield

**Poster No. 37**

“Endoscopic Submucosal Dissection versus Surgical Resection in the Definitive Management of T1 Colon Cancer Outcomes from Single-Center Experience”

Dr. Remy Fenrich

Mentor: Dr. Jeremy Ward

**Poster No. 38**

“Financial Impact of Cleft Lip and Palate Surgery in Peru”

Srinithya R. Gillipelli

Mentor: Dr. Jessica Ching

**Poster No. 39**

“Integrating Spatial Metabolomics and Spatial Transcriptomics on the Same Cancer Tissue Sections to Detect Gene Metabolite Correlations”

Trevor M. Godfrey

Mentor: Dr. Livia S. Eberlin

**Poster No. 40**

“Relationship between Three-Dimensional Airway Metrics and Apnea-Hypopnea Index in Orthognathic Surgery Candidates”

Julian J. Gonzales

Mentor: Dr. Edward Buchanan

**Poster No. 41**

“Intrathoracic Implant-based Therapy for Rare Cardiothoracic Conditions: A Case Series of Efficacy and Outcomes”

Margaret Hancock

Mentor: Dr. Sebastian Wincour

**Poster No. 42**

“Characterizing One-Year Mortality in Early Survivors of Thoracoabdominal Aortic Repair”

Anirudha R Karla

Mentor: Dr. Joseph Coselli

**Poster No. 43**

“Using LVAD as a Sensor on a Mock Circulatory Loop”

Simon Kiang

Mentor: Dr. Yaxin Wang

**Poster No. 44**

“A Tunable In Vitro Shear Stress Platform for Modeling Ischemia-Reperfusion Induced Endothelial Injury”

Christophe Kwizera

Mentor: Dr. Camila Hochman-Mendez

**Poster No. 45**

“National Trends in Acute Limb Ischemia: A Comparison of Survival and Limb Salvage in Endovascular versus Open Treatments”

Sai Prasada Rao K. Manikonda

Mentor: Dr. Jayar Chung

**Poster No. 46**

“A Pan-Cancer Metabolic Classifier for Cancer Detection across Ambient Mass-Spectrometry Techniques.”

Jacob I. Mardick

Mentor: Dr. Livia S. Eberlin

**Poster No. 47**

“The Impact of Operative Time of Day on Short- and Long-Term Post-Transplant Mortality: A National Analysis of Adult Heart, Lung, Liver, and Kidney Recipients”

Eric H. Nguyen

Mentor: Dr. Abbas Rana

**Poster No. 48**

“Role of Endothelial Cell-Secreted Factors in Promoting Vascular Invasion in Hepatoblastoma”

Priyanka Rao

Mentor: Dr. Sarah Woodfield

**Poster No. 49**

“NEOVAD V3: Computational Design and Experimental Validation of a Fully Magnetically Levitated Pediatric LVAD”

Christopher Tan

Mentor: Dr. Yaxin Wang

**Poster No. 50**

“Vascularized Composite Allotransplantation a Decade Later: A Contemporary Analysis of National Outcomes”

Kevin Vargas

Mentor: Dr. Abbas Rana

**Staff****Poster No. 51**

“Cysteine and Glycine-Rich Protein 3 (CSRP3) Inhibits Adult Cardiomyocyte Cell Cycle Entry through Regulating YAP”

Kamal Abou Farraj

Mentor: Dr. Tamer Mohamed

**Poster No. 52**

“Targeting the Mitochondrial Transfer Conduit: A Therapeutic Strategy for Drug Resistance in Thoracic Cancers”

Jaylon Aggison

Mentor: Dr. Yuan Xu

**Poster No. 53**

“Engineered mRNA-LNP to Treat Myocardial Infarction using Mitochondrial Biogenesis”

Suridh Chakravarty

Mentor: Dr. Ravi Ghanta

**Poster No. 54**

“Identifying PPIF as a Key Mitochondrial Regulator of Endothelial Injury during Lung Ischemia-Reperfusion Injury”

Guanxing Chen

Mentor: Dr. Ramiro Fernandez

**Poster No. 55**

“Tumor-Infiltrating Natural Killer Cell Profiling for Therapeutic Stratification in Patients with Resectable Non-Small Lung Cancer”

Dr. Atsushi Ito

Mentor: Dr. Hyun-Sung Lee

**Poster No. 56**

“Cell Cycle Reprogramming Mediates Acquired Oxaliplatin Resistance in Pancreatic Cancer”

Harinarayanan Janakiraman

Mentor: Dr. E. Ramsay Camp

**Poster No. 57**

“Tabular Foundation Model to Predict Hospital Stay Cost for Isolated CABG Procedure Patients”

Ishan Khurjekar

Mentor: Dr. Ravi Ghanta

**Poster No. 58**

“Ubiquitin-Conjugating Enzyme E2C Gene (UBE2C) is a Novel Post-Translational Modification Driver that Regulates Cardiomyocyte Cell Cycle through Regulation of RHOA Activity”

Rebecca Liu

Mentor: Dr. Riham Abouleisa

**Poster No. 59**

“Am I Doing this Right? Creating an Observation Tool to Ensure Educational Program Implementation Fidelity”

Christopher Mairena

Mentor: Dr. Peter Boedeker

## Projects in Progress

**Poster No. 60**

“Reconstructive Techniques and Outcomes Following Necrotizing Soft-Tissue Infection: A Systematic Review”

Stephen Chen

Mentor: Dr. Justin McCarty

**Poster No. 61**

“Mitochondrial Dynamics Modulation Improves Mitochondrial Function and Ameliorates Lung Ischemia Reperfusion Injury”

Mickael F. Gergeis

Mentor: Dr. Ramiro Fernandez

**Poster No. 62**

“Cangrelor as Chemoprophylaxis to Prevent Hepatic Artery Thrombosis in Pediatric Liver Transplants”

Omid Hosseini

Mentor: Dr. Thao Galván

**Poster No. 63**

“A Mechanically Bio-Mimetic Membrane Bioreactor for Heart Slices”

Joern Huelsmann

Mentor: Dr. Tamer Mohamed

**Poster No. 64**

“Salt peak identification of mass spectra collected during high-grade serous ovarian carcinoma debulking surgery”

Faith E. Jackobs

Mentor: Dr. Livia S. Eberlin

**Poster No. 65**

“Updates for SLIC LVAD”

Ethan Maddin

Mentor: Dr. Nobuyuki Kurita

**Poster No. 66**

“Feasibility of Simplified Lymphatic Microsurgical Preventing Healing Approach (SLYMPHA) in Community Hospitals: A Technical Guide for Lymphatic-Venous Bypass for Breast Surgeons”

Bernardo Martinez Leal

Mentor: Dr. Pabel Miah

**Poster No. 67**

“Engineered Cell Therapies for Local Production of Anti-Fibrotic Biologics in Idiopathic Pulmonary Fibrosis”

Miguel A. Mendez-Sosa  
Mentor: Dr. Ravi Ghanta

**Poster No. 68**

“Carotid Stenosis in Patients Undergoing Head and Neck Radiation”

Jenny Nguyen  
Mentor: Dr. Erin Greenleaf

**Poster No. 69**

“Functional Recovery of Rejected Human Lungs Using a Novel EVLP System”

Brian Quach  
Mentor: Dr. Chris Chan

**Poster No. 70**

“Synostosis of Uninvolved Sutures following Endoscopic Suturectomy in Nonsyndromic Single-Suture Craniosynostosis”

Arren E. Simpson  
Mentor: Dr. Laura Monson

**Poster No. 71**

“Combination of PRMT5 and MCL-1 Inhibitors Overcomes Immune Checkpoint Inhibitor Resistance in Pleural Mesothelioma”

Siqi Wu  
Mentor: Dr. R. Taylor Ripley

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

Baylor  
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