

14th Annual

Research Day

April 7-8

2026

Baylor College of Medicine

Baylor College of Medicine

MICHAEL E. DEBAKEY DEPARTMENT OF SURGERY

14th 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 Nejim, 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

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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 **Registration and Breakfast**

7-7:30am
Welcome
Dr. Todd K. Rosengart

Surgical Education Remarks
Dr. Ronald T. Cotton

Office of Surgical Research Highlights
Dr. Livia S. Eberlin

7:30-8:10am **Keynote Address**
"Engineered NK Cell Therapies: from Bench to Bedside"
Dr. Katy Rezvani

8:10-8:30am
UAB Resident Research Day Exchange Program Introduction
Dr. Sanjeev Vasudevan

Sialylation in Mouse Model of CRC alters metabolism worsening obstruction
Dr. Meredith L. Johnson (UAB)

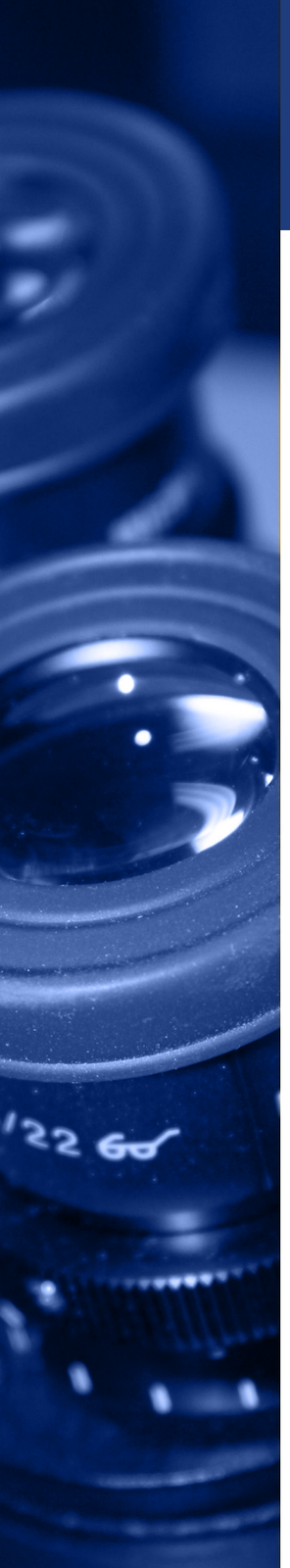
8:30-8:45am **Break - Refreshments**

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. Jayer 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. Jayer Chung

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

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

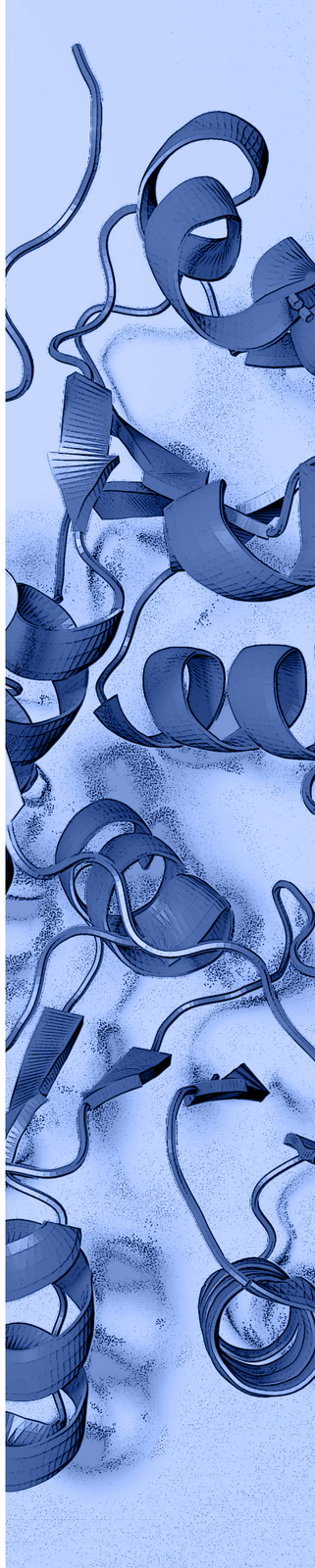
"Identifying Barriers and Facilitators to Receipt of Chemotherapy in Pancreatic Ductal Adenocarcinoma"
Dr. John C. Johnson
Mentor: Dr. E. Ramsay Camp

"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

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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. Zemia C. Ferreira
Mentor: Dr. Gustavo Oderich

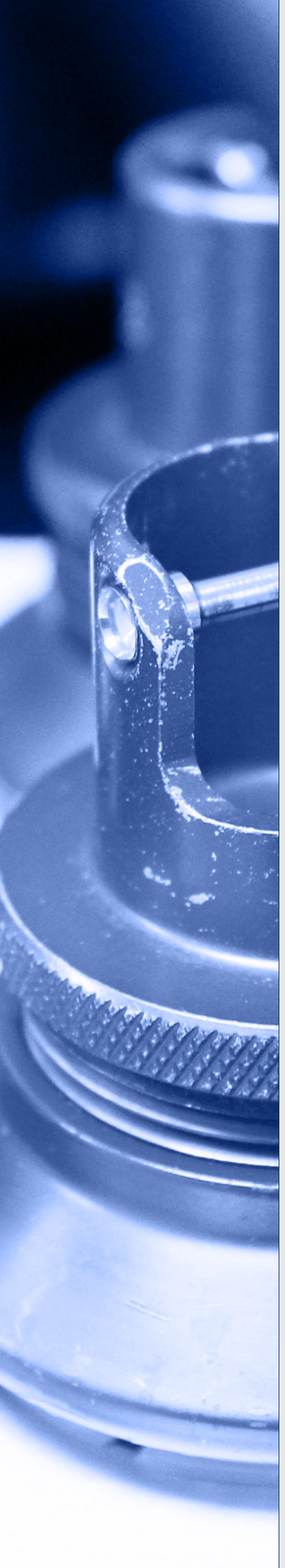
Poster No. 10
"Fibroblast Exosome Regulation by Mechanical Tension Influences Scarring Heterogeneity"
Dr. Mary Elizabeth Guerra
Mentor: Dr. Swathi Balaji

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 Reductioin 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 Edma 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. Qizhi Yao

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 Reair 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. Raghave 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

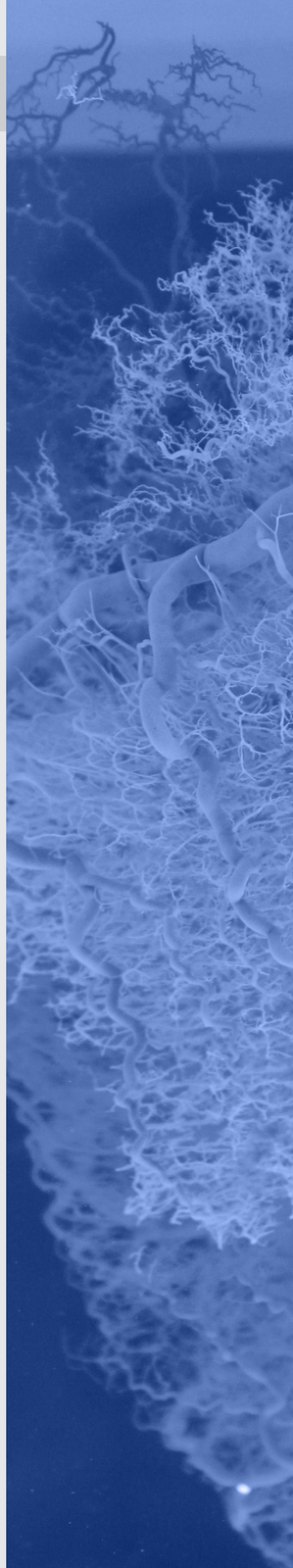
Poster No. 36
“Exploring Mitogen-Associated Protein Kinases’s (MAPK) Role as a Key Hypoxia Regulator in Extracranial Malignant Rhabdoid Tumors (MRTS)”
Hannah M. Engebretson
Mentor: Dr. Sarah Woodfield

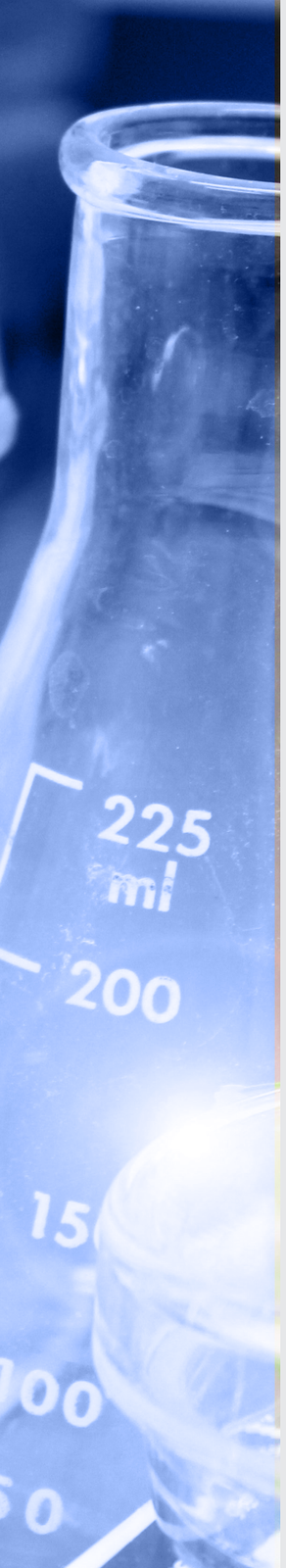
Poster No. 37
“Endoscopic Submucosal Dissection versus Surgical Resection in the Definitive Management of T1 Colon Cancer Outcomes from Single-Center Experience”
Dr. Remy Fenrich
Mentor: Dr. Jeremy Ward

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. Jayer 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

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