Seventeenth Annual
Richard L. Simmons Lecture in Surgical Science and Department of Surgery Research Day

Wednesday, May 8, 2019
University Club
Ballrooms A and B
Richard L. Simmons, MD, graduated magna cum laude in biochemical sciences from Harvard University and was elected to Phi Beta Kappa. He earned his MD at Boston University, graduating summa cum laude, and was elected to AOA. He completed his surgical residency at New York Presbyterian Hospital, where he was a National Institutes of Health (NIH) postdoctoral fellow, a visiting fellow in surgery at Columbia University, and an American Cancer Society (ACS) clinical fellow. During this time, he also won the Mead Johnson Award of ACS and was a clinical and research fellow in surgery at Massachusetts General Hospital and a research fellow at Harvard Medical School. He became principal investigator of an RO1 grant as a resident and was NIH funded for more than 40 consecutive years thereafter.

After heading the surgical research team of the U.S. Army in Vietnam in 1967, Simmons joined the surgical faculty of the University of Minnesota, where he was a Markle scholar in academic medicine and held professorships in both surgery and microbiology. Between 1987 and 1998, Simmons served as chair of the Department of Surgery at the University of Pittsburgh School of Medicine, and in 1996, he became the medical director of UPMC—a position he held until 2015.

During his tenure at Pitt, Simmons has received many honors. Locally, he was given the annual award from the Southwestern Pennsylvania Chapter of ACS and the Gift of Life Award from the National Kidney Foundation of Western Pennsylvania and was named Man of the Year (1998) in Science by Vectors of Pittsburgh. He was selected by Archives of Surgery as one of two dozen 20th-century surgeons who have made significant contributions to surgery, and in 2001, ACS dedicated the Surgical Forum to Simmons. In 2004, Simmons received the Medawar Prize for his work in transplantation immunology and infectious disease. He was awarded the Thomas E. Starzl Prize in Surgery and Immunology in 2005 and the Lifetime Achievement Award from the Society of University Surgeons in 2010. The Allegheny County Medical Society Foundation honored Simmons with the Ralph C. Wilde Leadership Award in March 2014. Most recently, Simmons was awarded the Pioneer Award from the American Society of Transplant Surgeons and the Scientific Medallion from the American Surgical Association. Simmons is past chair of the Surgical Forum and past president of the Society of University Surgeons, American Society of Transplant Surgeons, and Surgical Infection Society. Simmons also has served as a member of the Board of Directors of the American Board of Surgery. He has authored or edited 15 books and more than 1,300 articles. In 1994, he was elected to the Institute of Medicine of the National Academies.

Simmons continues to serve the Department of Surgery as chair emeritus and as an advisor and mentor.
George Miller, MD, is a highly experienced hepatobiliary surgeon and physician-scientist with an extensive background in the evaluation and treatment of people with liver, bile duct, and pancreatic tumors. In addition to his appointments as H. Leon Pachter Professor of Surgery and Cell Biology, he is Vice Chair of Research in the Surgery Department and director of the T32 training program in gastrointestinal oncology at NYU School of Medicine. Miller also is the leader of the Laura and Isaac Perlmutter Cancer Center Immunology Program.

After receiving his BA from Columbia University and his MD from McGill University, Miller completed a general surgery residency at NYU School of Medicine. He completed a postdoctoral research fellowship studying cancer immunology and immunotherapy and clinical fellowships in surgical oncology and hepatobiliary and pancreatic surgery at Memorial Sloan Kettering Cancer Center.

Miller directs the S. Arthur Localio Laboratory where he investigates the immunologic regulation of liver and pancreatic cancers. The lab has been supported by more than 40 federal and nonfederal grants since 2009. His lab’s work has been published in high-impact journals that include Nature, Cell, Nature Medicine, Cancer Discovery, and Cancer Cell. The lab’s findings are being translated to four separate clinical trials in pancreatic cancer and three new innovative therapeutics. Miller’s lab has filed 10 patent applications based on its discoveries.
SCHEDULE

7:30–8 a.m. Poster Viewing
Ballrooms A and B

8–9 a.m. Richard L. Simmons Lecture in Surgical Science
Ballroom A
“New Approaches to Pancreatic Cancer Immunotherapy”

George Miller, MD
H. Leon Pachter Professor
Departments of Surgery and Cell Biology
Leader, Cancer Immunology Program
New York University (NYU) School of Medicine

9–9:30 a.m. Poster Viewing/Break
Ballrooms A and B

9:30–10:45 a.m. Oral Presentations
Session 1
Ballroom A

10:45–11:15 a.m. Poster Viewing/Break
Ballrooms A and B

11:15 a.m.–12:30 p.m. Oral Presentations
Session 2
Ballroom A

12:30–2 p.m. Buffet Luncheon
Ballroom B
**7:30–8 a.m.**
**Poster Viewing, Ballroom A**

**BASIC SCIENCE I (Left Station)**

**Tianmeng Chen**, Single Cell RNA Sequencing Reveals A New Monocyte Trajectory in Mouse Polytrauma Model (Advisor: Timothy R. Billiar, MD)

**Shuai Liu**, Mechanical Ventilation with Moderate Tidal Volumes Aggravates Extrapulmonary Sepsis-Induced Lung Injury via IL33-WISP1 Signaling Pathway (Advisor: Liming Zhang, MD)

**Rafael Ramos-Jimenez**, Traumatic Brain Injury in Adult Mice Results in Decreased Gut Commensals and Microbiome Diversity (Advisor: Michael Morowitz, MD)

**Jurgis Alvikas**, Novel Platelet-Targeted Nanotechnology to Target Deep Venous Thrombosis (DVT) (Advisor: Matthew Neal, MD)

**Nandan Nath**, Novel Graft Topography: Arterial Wrinkling to Prevent Platelet Aggregatior (Advisor: Edith Tzeng, MD)

**EPIDEMIOLOGY/CLINICAL OUTCOMES (Right Station)**

**Maria Cohen**, Sevoflurane is Associated with Worse Clinical Outcomes and Altered Inflammatory Markers in Blunt Trauma Patients: Pharmacogenomic Association with Single Nucleotide Polymorphisms rs4715332 and rs1695 (Advisor: Yoram Vodovotz, PhD)


**Osama Shah**, Identifying Genomic Alterations in Stage IV Breast Cancer Patients Using MammaSeq: An International Collaborative Study (Advisor: Adrian Lee, PhD)

**Pranav Murhy**, Prognostic Value of Systemic Immune-Inflammatory Index (S II) After Neoadjuvant Therapy in Patients with Pancreatic Cancer (Advisor: Michael Lotze, MD)

**Katrina Morgan**, Successful Pre-operative CT-Guided Localization of Pulmonary Nodules Using Microcoils and Methylene Blue Dye Prior to Thoracoscopic Resection in Pediatric Patients (Advisor: Marcus Malek, MD)

**Sidrah Khan**, Long-Term and Oncologic Outcomes of Robotic versus Laparoscopic Liver Resection for Metastatic Colorectal Cancer: A Multicenter, Propensity Score Matching Analysis (Advisor: Allan Tsung, MD)

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**7:30–8 a.m.**
**Poster Viewing, Ballroom B**

**BASIC SCIENCE II (Left Station)**

**Yue Wang**, Deep Serial Analysis of the TCR/BCR CDR3 Adaptome Repertoire in Peripheral Blood of Pancreatic Cancer Patients in a Randomized Study of Neoadjuvant Chemotherapy with or without Autophagy Inhibition (Advisor: Michael Lotze, MD)

**Daqiang Zhao**, Role of innate Allorecognition Pathways in Mouse Renal Allograft Rejection (Advisor: Fadi Lakkis, MD)

**Khodor Abou-Daya**, Tertiary Lymphoid Organs in Renal Chronic Allograft Rejection (Advisor: Martin Oberbarnscheidt, MD, PhD)

**Kathy Gonzalez**, Inhibition of Xanthine Oxidoreductase Accelerates Diabetic Wound Healing (Advisor: Edith Tzeng, MD)
QUALITY/EDUCATION/EPIDEMILOGY (Right Station)

Patrick Varley, Implementation of the Risk Analysis Index as a Prospective Frailty Screening Tool Within a Multi-Practice, Multi-Hospital Integrated Healthcare System  
(Advisor: Daniel Hall, MD, MDiv, MHSc)

Shreyus Kulkarni, Determinants of Surgeon Decision-Marking in Emergency General Surgery: A Qualitative Analysis  
(Advisor: Deepika Mohan, MD)

Patrick Varley, Cost-Effectiveness of Post-Discharge Thromboprophylaxis Following Resection for Pancreatic Cancer  
(Advisor: Allan Tsung, MD)

Elizabeth Andraska, Mesenteric Venous Thrombosis: Predictors of Anticoagulation Failure  
(Advisor: Rabih Chaer, MD)

Kate Dinh, Chemotherapy Trends for Metaplastic Breast Cancer: A National Cancer Database Review  
(Advisor: Emilia Diego, MD)

Kristina Nicholson, Molecular Testing of Bethesda III/IV Thyroid Nodules: A Cost-Effectiveness Analysis  
(Advisor: Linwah Yip, MD)

BASIC SCIENCE I (Left Station)

Xianghong Zhang, Calcium/Calmodulin Dependent Protein Kinase IV Regulates Mitochondrial Dynamics During Sepsis  
(Advisor: Matthew Rosengart, MD)

Zhongjie Yi, Itaconate-Activated Nrf2 Antioxidative Response in Hepatocytes Protects Liver from Ischemia and Reperfusion Injury  
(Advisor: Timothy R. Billiar, MD)

Tengfan Li, Local IL-33 Regulates Heart Transplant Infiltrating Myeloid Cells Metabolism and Differentiation to Protect Against Chronic Rejection  
(Advisor: Heth Turnquist, PhD)

V. Shaun Siow, cGAS is Critical in Modulating Intestinal Inflammation and Apoptosis  
(Advisor: Kevin Mollen, MD)

EPIDEMIOLOGY/CLINICAL OUTCOMES (Right Station)

Marissa Baron, Do Patient Characteristics Predict Success Following Pedal Soft Tissue Augmentation?  
(Advisor: Jeffrey Gusenoff, MD)

Christof Kaltenmeier, Factors Associated with Colon Cancer Patients Refusing Surgery and Their Survival: A National Cohort Study  
(Advisors: David Geller, MD and Samer Tohme, MD)

Conor Donnelly, Risk of Venous Thromboembolism Following Non-Trauma Massive Transfusion  
(Advisor: Matthew Neal, MD)

Amelia Lucisano, Characterization of Trauma-Induced Coagulopathy in Pediatric Patients with Severe Abusive Compared to Accidental Head Trauma  
(Advisor: Barbara Gaines, MD)

Phoebe Lee, Optimizing Outcomes for Nipple Sparing Mastectomy Patients  
(Advisor: Michael Gimbel, MD)
9–9:30 a.m.  
Poster Viewing, Ballroom B

**BASIC SCIENCE II (Left Station)**

**Samuel C. Butler,** Autophagy Inhibition and Chemotherapy Modulate PD-L1 and PD-L2 in Esophageal Adenocarcinoma Cell Lines  
(Advisor: Rajeev Dhupar, MD)

**WeiLin Liu,** IL-2-Expressing Oncolytic Virus in Combination with TLR9 Ligand Elicit Potent Abscopal Effect for Superior Therapeutic Efficacy  
(Advisor: David Bartlett, MD)

**Guang Fu,** The Role of TLR9 in Immune Microenvironment Development in the Peritoneal Cavity and Peripheral Blood  
(Advisor: Timothy R. Billiar, MD)

**Ping Sun,** Cell-Specific Roles of Caspase-11 on Liver Injury After Hemorrhagic Shock  
(Advisor: Melanie Scott, MD, PhD)

**Christof Kaltenmeier,** Neutrophil Extracellular Trap as a Biomarker for Overall and Recurrence-Free Survival in Patients with Primary Hepatic Cancers  
(Advisors: David Geller, MD and Samer Tohme, MD)

**QUALITY/EDUCATION/EPIDEMIOLOGY (Right Station)**

**Leah Furman,** Characterizing the Transition of Junior to Senior Surgery Resident  
(Advisors: Giselle Hamad, MD and Eliza Beth Littleton, PhD)

**Joanna NG Glazier,** The Development of Novel Low-Cost, High Impact Models—Can Simulation Survive in Plastic Surgery Education?  
(Advisor: Jeffrey Gusenoff, MD)

**Caroline Kettering,** Gender Disparities Among Burn Surgery Leadership  
(Advisor: Jenny Ziembicki, MD)

**Wendy Chen,** National Survey of Plastic Surgery Trainees: Current Status of Gender Bias and Sexual Misconduct  
(Advisor: Carolyn De La Cruz MD)

**Sarah Aljaied,** Fronto-Orbital Advancement Techniques for Craniosynostosis: A Systematic Review  
(Advisor: Jesse Goldstein, MD)

**Marissa Baron,** Undiagnosed Normocephalic Pancraniosynostosis Presenting as Bilateral Abducens Nerve Palsy  
(Advisor: Joseph Losee, MD)

10:45–11:15 a.m.  
Poster Viewing, Ballroom A

**BASIC SCIENCE I (Left Station)**

**Chigozirim Ekeke,** Between Push and Shove: Driving Effective Immunity in Malignant Pleural Disease  
(Advisor: David Bartlett, MD)

**Andrew Friday,** Identification of Human SIRPa Diversity that Could Regulate Innate Allorecognition  
(Advisor: Fadi Lakkis, MD)

**Xiao Cui,** Hepatocellular Carcinoma Derived FOXO1 Inhibited Tumor Progression Through Suppressing IL-6 Secretion from Macrophage  
(Advisor: David Geller, PhD)

**Jingjing Ji,** IL-25 Regulates Alveolar Macrophage Exosome Release in Response to LPS  
(Advisor: Jie Fan, MD, PhD)

**Khodor Abou-Daya,** Tissue Resident Memory T Cells in Mouse Renal Transplantation  
(Advisor: Fadi Lakkis, MD)
**EPIDEMIOLOGY/CLINICAL OUTCOMES (Right Station)**

**Samer Tohme**, Time to Surgery and Colon Cancer Survival in the United States  
(Advisor: David Geller, MD)

**Honghao Jiang**, Metabonomic Profiling of Plasma in Polytrauma Patients with TBI Using UPLC-MS  
(Advisor: Timothy R. Billiar, MD)

**Yanjun Zhong**, Early Alteration in Amino Acid Metabolic Pathway Associated with Persistent Multi-Organ Dysfunction Syndrome After Trauma in Humans  
(Advisor: Timothy R. Billiar, MD)

**Sara Myers**, Early Versus Late Venous Thromboembolism: A Secondary Analysis of Data from the PROPPR Trial  
(Advisor: Matthew Neal, MD)

**Katie Hrebinko**, Young Patients with Rectal Cancer Have More Aggressive Tumor Biology  
(Advisor: Jennifer Holder-Murray, MD)

**Asmita Chopra**, Impact of Neo-Adjuvant Chemotherapy on Survival in Patients with a Positive Surgical Margin Following Resection of Pancreatic Cancer  
(Advisor: Joal Beane, MD)

**10:45–11:15 a.m**  
**Poster Viewing, Ballroom B**

**BASIC SCIENCE II (Left Station)**

**Yiming Li**, TLR9 Signaling in Fibroblastic Reticular Cells Regulates Peritoneal Immunity  
(Advisor: Timothy R. Billiar, MD)

**Nolan Skirtich**, Pattern of Elastic Matrix Degradation Differentiates Adaptive Arterial Diameter Growth in Arteriogenesis From Pathologic Growth in Aneurysm  
(Advisor: Ryan McEnaney, MD)

**Dylan McCreary**, Developing Collateral Arteries Unravel Their Internal Elastic Laminae for Diameter Growth  
(Advisor: Ryan McEnaney, MD)

**Lauren Huckaby**, A Role for Estrogen in Extracellular Matrix Regulation by Thoracic Aortic Smooth Muscle Cells  
(Advisors: Thomas Gleason, MD and Julie Phillippi, PhD)

**Ricardo Ferrari**, Primary Muscle Satellite Cells (MuSC) in Peripheral Artery Disease Demonstrate Attenuated Myogenicity and Markers of Inflammasome Activity  
(Advisor: Ulka Sachdev, MD)

**QUALITY/EDUCATION/EPIDEMIOLOGY (Right Station)**

**Cindy Teng**, Predicting Postoperative Ileus After Colorectal Surgery in an Enhanced Recovery Protocol  
(Advisor: Jennifer Holder-Murray, MD)

**Kate Dinh**, Implementation of an Enhanced Recovery After Surgery (ERAS) Protocol Improves Post-Operative Nausea and Analgesia Following Total Mastectomy  
(Advisor: Emilia Diego, MD)

**Justin Beiriger**, Improving Free Flap Breast Reconstruction Using 3D Printed Templates to Map Perforator Artery Anatomy  
(Advisor: Michael Gimbel, MD)

**Esmaeel Reza Dadashzadeh**, Machine Learning for Prediction of Pathologic Pneumatosis Intestinalis Using CT Imaging  
(Advisor: Shandong Wu, MD)

**Vernissia Tam**, Improving Compliance to ERAS Clinical Pathways Using EMR Software  
(Advisor: Jennifer Holder-Murray, MD)
SESSION 1

9:30–9:45 a.m. Caroline Rieser, MD, Author/David Bartlett, MD, PI 
“Predicting Readmissions Following Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy: Derivation and Validation of a Risk Prediction Score”

9:45–10 a.m. Ranjeet Kalsi, MD, Author/Gittes Lab, PI 
“Chemical Pancreatectomy as a Revolutionary Treatment for Chronic Pancreatitis”

10–10:15 a.m. Hamza Yazdani, MD, Author/Samer Tohme, MD, PI and David Geller, MD, PI 
“Neutrophil Extracellular Traps (NETs) Promote Immune Escape and Metastatic Growth After Surgical Stress”

10:15–10:30 a.m. Katherine Reitz, MD, Author/Neal Lab, PI 
“Metformin, Preoperative Diseases of Aging, and Postoperative Survival in Adults with Type II Diabetes”

10:30–10:45 a.m. Anthony Cyr, MD, Author/Zuckerbraun Lab, PI 
“Metformin Rescues Age-Associated Decline in Mitochondrial and Immunologic Function in Murine and Human Lymphocytes”

SESSION 2

11:15–11:30 a.m. Danielle Gruen, MD, Author/Timothy Billiar, MD, PI, and Jason Sperry, MD, PI 
“Early Circulating Cytokines in Severely-Injured Trauma Patients are Associated with Distinct Clinical Outcomes and Responsiveness to Prehospital Plasma”

11:30–11:45 a.m. Ashley Lamparello, MD, Author/Timothy Billiar, MD, PI and Yoram Vodovotz, MD, PI 
“An Aging-Related Single Nucleotide Polymorphism is Associated with Distinct Inflammatory Profiles in Aged Blunt Trauma Patients”

11:45 a.m.–Noon Amelia Lucisano, MD, Author/Barbara Gaines, MD, PI 
“Firearm-Related Injury: A Source of Preventable Morbidity and Mortality in the Pediatric Population”

Noon–12:15 p.m. Catherine Go, MD, Author/Bryan Tillman, MD, PI 
“A Three-Tier Rescue Stent as a Comprehensive Solution to Noncompressible Hemorrhage”

12:15–12:30 p.m. John Griepentrog, MD, Author/Matthew Rosengart, MD, PI 
“Blue Spectrum Filtering Cataract Lenses Are Associated with Reduced Survival”
PAST LECTURERS

2003
“Hyperosmolar Solutions for Fluid Resuscitation During Critical Illness”
Ori D. Rotstein, MD
Professor of Surgery, Department of Surgery
University of Toronto

2004
“The Inflammatory Reflex”
Kevin J. Tracey, MD
Professor and Director, Center for Patient-Oriented Research
Program Director, General Clinical Research Center
North Shore-LIJ Research Institute

2005
“Why Are You Killing My Patient?”
Michael B. Yaffe, MD, PhD
Associate Professor of Biology
Massachusetts Institute of Technology

2006
“Reparative and Regenerative Medicine: A Surgeon’s Perspective”
Michael T. Longaker, MD, MBA, FACS
Deane P. and Louise Mitchell Professor
Director, Children’s Surgical Research Program
Deputy Director, Institute of Stem Cell Biology and Regenerative Medicine
Director, Program in Regenerative Medicine
Stanford University School of Medicine

2007
“How Microbial Pathogens Sense Host Stress and Respond Accordingly”
John C. Alverdy, MD, FACS
Professor of Surgery
Director, Minimally Invasive/Bariatric Surgery
University of Chicago

2008
“VEGF and VEGF Receptors in CRC: Beyond Angiogenesis”
Lee M. Ellis, MD, FACS
Professor of Surgery and Cancer Biology
William C. Liedtke Jr. Chair in Cancer Research Chair, Ad Interim, Department of Cancer Biology
University of Texas MD Anderson Cancer Center

2009
“Liver Translational Research: The Bench Work Does Matter”
David A. Geller, MD
Professor of Surgery
Codirector, UPMC Liver Cancer Center
University of Pittsburgh

2010
“Enhancing Vein Graft Patency: From the Molecular to the Obvious”
Colleen M. Brophy, MD
Professor of Surgery
Division of Vascular Surgery
Vanderbilt University

2011
“Memory, Surgery, and Surgical Research”
Daniel R. Meldrum, MD, FACS, FAHA
Professor of Surgery and Physiology
Section of Cardiothoracic Surgery
Indiana University School of Medicine

2012
“Advancing Translational Research in Pancreatic Cancer”
Diane M. Simeone, MD
Lazar J. Greenfield Professor of Surgery and Molecular and Integrative Physiology
Chief, Division of HPB and Advanced Gastrointestinal Surgery
University of Michigan Health System

2013
“Regenerative Medicine: Current Concepts and Changing Trends”
Anthony Atala, MD
Director, Wake Forest Institute for Regenerative Medicine
W.H. Boyce Professor and Chair, Department of Urology-Wake Forest School of Medicine

2014
“Small Molecules for Small Patients: A Surgical Journey into the Pathogenesis and Treatment of Necrotizing Enterocolitis”
David J. Hackam, MD, PhD, FACS
Watson Family Professor of Surgery
Associate Dean for Medical Student Research
Professor of Surgery and Cell Biology and Physiology, University of Pittsburgh School of Medicine
Codirector, Fetal Diagnosis and Treatment Center, Children’s Hospital of Pittsburgh of UPMC

2015
“The Challenges and Rewards of Translational Research—One Surgeon’s Journey”
Melina R. Kibbe, MD, FACS, FAHA
Professor and Vice Chair of Research
Edward G. Elcock Professor of Surgical Research
Department of Surgery, Northwestern University

2016
“Trauma Care: A Case Study in Translating Research into Policy”
Avery B. Nathens, MD, PhD, FRCS(C)
Surgeon-in-Chief, Sunnybrook Health Sciences Centre
Professor of Surgery, University of Toronto
DeSouza Chair in Trauma Research

2017
“Gut Integrity in Sepsis”
Craig M. Coopersmith, MD, FACS, FCCM
Professor and Vice Chair, Surgery
Emory University School of Medicine
Director, 5E Surgical ICU
Associate Director, Emory Critical Care Center

2018
“Considerations on the Creative Process in Clinical Problem Solving”
Elliot L. Chaikof, MD, PhD
Surgeon in Chief, Beth Israel Deaconess Medical Center Chair, Roberta and Stephen R. Weiner Department of Surgery
Johnson and Johnson Professor of Surgery
Harvard Medical School