

21st Annual Department of Plastic Surgery Research Day Friday, June 21, 2024



University of Pittsburgh Petersen Events Center GBU Life Campus View Room 3719 Terrace Street Pittsburgh, PA 15261

7:00 AM – 7:30 AM	Breakfast OF PI
7:30 AM – 7:45 AM	Introduction and Opening Remarks – Dr. J. Peter Rubin
7:45 AM – 8:45 AM	Benjamin Levi, MD Visiting Professor Dr. Lee Hudson-Robert R. Penn Chair Division Chief of General Surgery Director, Center for Organogenesis Regeneration & Trauma Associate Professor in Surgery, University of Texas Southwestern Medical Center "From Forest Fires to the Front Lines: Advances in Burn Care and Reconstruction"
8:45 AM – 9:00 AM	Break/Vendor Exhibits
9:00 AM – 10:30 AM	Session I – Clinical Research I Presentations
10:30 AM - 10:45 AM	Break/Vendor Exhibits
10:45 AM – 12:00 PM	Session II – Education, Quality and Innovation Presentations
12:00 PM – 1:00 PM	Benjamin Levi, MD Visiting Professor Dr. Lee Hudson-Robert R. Penn Chair Division Chief of General Surgery Director, Center for Organogenesis Regeneration & Trauma Associate Professor in Surgery, University of Texas Southwestern Medical Center "How Musculoskeletal Tissues Turn to Steel and Leveraging this to Enhance Regeneration in the Steel City"
1:00 PM - 2:30 PM	Session III – Clinical Research II Presentations
2:30 PM – 2:45 PM	Break/Vendor Exhibits
2:45 PM – 3:25 PM	Session IV – Basic Science Presentations
3:25 PM – 3:30 PM	Concluding Remarks - Dr. Jesse Goldstein and Dr. Kacey Marra
3:30 PM	Adjournment
3:30 PM – 5:30 PM	Reception and Award Presentations

Course Directors:

Jesse A. Goldstein, MD Chief, Division of Pediatric Plastic Surgery Endowed Chair for Pediatric Plastic Surgery Research Craniofacial Fellowship Director Associate Program Director Professor, Department of Plastic Surgery Children's Hospital of Pittsburgh University of Pittsburgh Medical Center University of Pittsburgh, Pittsburgh, PA

Kacey G. Marra, PhD, FTERM Professor and Vice Chair of Research Department of Plastic Surgery Professor of Bioengineering University of Pittsburgh, Pittsburgh, PA

Intended Audience:

The target audience for the meeting includes plastic surgeons in practice and in training, both private and academic, and members of the plastic surgery research community.

Learning Objectives:

At the conclusion of this activity, attendees should be able to: Demonstrate knowledge of current concepts in plastic and reconstructive surgery;

Access clinical data that will have a direct impact on the everyday practice of plastic surgery;

Integrate basic science research to assist in making better clinical and operative decisions; and

Implement techniques in the areas of patient safety, clinical/surgical outcomes, and complications that will improve their performance and patient outcomes.

Accreditation and Credit Designation Statement:

In support of improving patient care, the University of Pittsburgh is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Physician (CME)

The University of Pittsburgh designates this live activity for a maximum of 6.5 AMA PRA Category 1 CreditsTM. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Physician Assistant (AAPA)

The University of Pittsburgh has been authorized by the American Academy of PAs (AAPA) to award AAPA Category 1 CME credit for activities planned in accordance with AAPA CME Criteria. This activity is designated for 6.5 AAPA Category 1 CME credits. PAs should only claim credit commensurate with the extent of their participation.

Other health care professionals will receive a certificate of attendance confirming the number of contact hours commensurate with the extent of participation in this activity.

Link to website for CME:

https://cce.upmc.com/department-plastic-surgery-21st-annual-research-day

Or scan here:



Visiting Professor and Keynote Speaker

Benjamin Levi, MD

Dr. Lee Hudson-Robert R. Penn Chair Division Chief of General Surgery

Director, Center for Organogenesis Regeneration & Trauma Associate Professor in Surgery, University of Texas Southwestern Medical Center



Benjamin Levi, M.D., holds the Dr. Lee Hudson-Robert R. Penn Chair in Surgery and Plastic and Reconstructive Surgery and serves as Chief of the Division of General Surgery and Director of the Center for Organogenesis Regeneration and Trauma (CORT) at University of Texas Southwestern/Parkland Hospital. He specializes in acute and reconstructive burn surgery, scar reconstructive surgery and surgical critical care. He earned his undergraduate degree at Washington University in Spanish and Biology followed by Medical School at Northwestern University. He did his Plastic Surgery Residency at University of Michigan and Fellowship in Surgical Critical Care and Burn Surgery at Massachusetts General Hospital. He started his career as a surgeon scientist at University of Michigan where he was on faculty for 6 years and directed the Burn/Wound and Regenerative Medicine Laboratory before being recruited to UT Southwestern faculty in 2020 to lead the Division of General Surgery which represents a talented and diverse group of 25 faculty who provide outstanding care to patients at Parkland Hospital and Clements University Hospital.

Dr. Levi has a large research program currently funded by the National Institutes of Health and Department of Defense to focus on tissue injury, repair and regeneration with an emphasis on heterotopic ossification, muscle fibrosis and burn injury. He is the author of more than 150 scholarly articles, including in Science Translational Medicine, Proceedings of the National Academy of Sciences, and Nature Communications, as well as chapters in several core textbooks in Surgery and Plastic and Reconstructive Surgery. He also has significant interest in Positive Intelligence and invests heavily in his division and laboratory team members to support and enhance mental fitness and wellness programs. He is grateful for the mentorship and inspiration he has received over the years from many faculty and trainees at the University of Pittsburgh.

University of Pittsburgh School of Medicine Department of Plastic Surgery Faculty:

T. Oguz Acartürk, MD Clinical Associate Professor

Elizabeth A. Bailey, MD, MSHP, MEd Assistant Professor

Dana E. Bregman, MD Assistant Professor

Michael R. Bykowski, MD, MS Assistant Professor

Alexander J. Davit III, MD Assistant Professor

Carolyn De La Cruz, MD Associate Professor

Francesco M. Egro, MBChB, MSc, MRCS Associate Professor

Asim Ejaz, PhD Assistant Professor

Michael L. Gimbel, MD Associate Professor

Jesse A. Goldstein, MD Professor

Gayle M. Gordillo, MD Professor

Jeffrey A. Gusenoff, MD Professor

Isaac B. James, MD, MS Assistant Professor

Nicole J. Jarrett, MD Assistant Professor

Lauren E. Kokai, PhD Assistant Professor Joseph E. Losee, MD, MBA Professor & Executive Vice Chair

Ernest K. Manders, MD Professor Emeritus

Kacey G. Marra, PhD Professor & Vice Chair of Research

Andrea A. Moreira, MD Associate Professor

Vu T. Nguyen, MD Associate Professor & Vice Chair of Education

Brodie A. Parent, MD, MS Assistant Professor

J. Peter Rubin, MD, MBA Professor & Chair

James M. Russavage, MD, DMD Clinical Assistant Professor

Lindsay Schuster, DMD, MS Associate Professor

Mario G. Solari, MD Assistant Professor

Guy M. Stofman, MD Clinical Professor

Teun Teunis, MD, PhD Assistant Professor

Dawn J. Wang, MD, MS Assistant Professor

Jason J. Yoo, MD Assistant Professor



21st Annual Plastic Surgery Research Day

Department of Plastic Surgery University of Pittsburgh Petersen Events Center GBU Life Campus View Room 3719 Terrace Street Pittsburgh, PA 15261

The overall goal of the Pitt Plastic Surgery Research Day is to discuss and educate the audience on new concepts and technologies in clinical and translational research in all areas of plastic surgery.

Friday, June 21, 2024	
7:00 AM – 7:30 AM	Breakfast
7:30 AM – 7:45 AM	Introduction and Opening Remarks – J. Peter Rubin, MD, MBA
7:45 AM – 8:45 AM	Visiting Professor – Lecture Benjamin Levi, MD Dr. Lee Hudson-Robert R. Penn Chair Division Chief of General Surgery Director, Center for Organogenesis Regeneration & Trauma Associate Professor in Surgery, University of Texas Southwestern Medical Center "From Forest Fires to the Front Lines: Advances in Burn Care and Reconstruction"
8:45 AM – 9:00 AM	Break/Vendor Exhibits
9:00 AM – 10:30 AM	Session I – Clinical Research I Presentations Moderators: Dr. Elizabeth Bailey and Dr. Carolyn De La Cruz
9:00 AM – 9:05 AM	Casey Zhang, BS; Alberto Vera, MD; Kelly Murphy, BS; Michael Calcaterra, BS; Hamid Alhmari, BS; Carolyn De La Cruz, MD; Michael Gimbel, MD; Vu Nguyen, MD; John Vargo, MD, MBA; Priscilla F. McAuliffe, MD, PhD; Brodie Parent, MD, MS Association Between Tumor-to-Breast Volume Ratio and Patient-Reported Outcomes After Oncoplastic Breast Conserving Surgery
9:05 AM – 9:10 AM	Casey Zhang, BS; <u>James D. Fisher, MD, PhD</u> ; Hilary Liu, MS; Carolyn De La Cruz, MD; Michael L. Gimbel, MD; Vu T. Nguyen, MD; Brodie Parent, MD, MS Absorbable Antibiotic Bead Prophylaxis for Implant-Based Breast Reconstruction: A Single-Institution Experience
9:10 AM – 9:15 AM	Shayan M. Sarrami, MD; Siri Ravuri, BS; <u>Darya Fadavi, MD</u> ; Carolyn De La Cruz, MD The Utility of Indocyanine Green Lymphography in Lipedema Patients: A Case Series
9:15 AM – 9:20 AM	Shayan M. Sarrami, MD; Korrina Gidwani, BS; Casey Zhang, BS; Carolyn De La Cruz, MD Correlating the Pittsburgh Trunk Lymphedema Staging System with Breast Cancer Treatment and Reconstruction

9:20 AM – 9:25 AM	Nerone O. Douglas, MSc; Shayan Sarrami, MD; Carolyn De La Cruz, MD The "True Cost" of Lymphedema: A Prospective Cohort Study Assessing Financial Toxicity in Lymphedema Patients
9:25 AM – 9:30 AM	Casey Zhang, BA; Dhipthika Srinivasan, DO; <u>Xiao Zhu, MD</u> ; Vu T. Nguyen, MD Venous Thromboembolism Risk in Breast Reconstruction: Application of the Caprini Risk Assessment Model
9:30 AM – 9:45 AM	Discussion
9:45 AM – 9:50 AM	Siri Ravuri, BS; Nicolás M. Kass; Kathryn S. Torok, MD; Jesse A. Goldstein, MD; Joseph E. Losee, MD, MBA; Michael Bykowski, MD Fat Graft Growth Dynamics and Weight Gain during Adolescence: A Quantitative, 3-D Stereophotogrametric, Split-Face Analysis after Hemifacial Fat Grafting Scleroderma Patients
9:50 AM – 9:55 AM	Nia Buckner, MS*; Angel Dixon, BS*; Shirley Liu, BS; Kouadio Toukou, BS; Nicolás M. Kass; Alexander Davit, MD; Jesse Goldstein, MD Too Far for Comfort?: Evaluating Geographic Distance, Rurality, and Social Vulnerability to Pediatric Plastic Surgical Care and Outcomes
9:55 AM – 10:00 AM	Zhazira Irgebay, MD; Alexander J. Comerci, BS; Christopher Fedor, MS; Viraj Govani, BA; Jesse A. Goldstein, MD Characterizing Fracture Patterns, Management, and Adverse Outcomes of 867 Pediatric Orbital Fractures
10:00 AM – 10:05 AM	Justin Beiriger, MD, MS; Nicolás M. Kass, BA; Casey Zhang, BS; Angel Dixon, BS; Joseph Mocharnuk, BS; Jeffrey Chen, BS; Megan Pencek, MD; Joseph E. Losee, MD, MBA; Jesse A. Goldstein, MD Establishing the Pediatric Head Circumference Growth Curve for Patients with Sagittal Craniosynostosis
10:05 AM – 10:10 AM	Angel Dixon, BS; Nicolás M. Kass, BS; Wenzheng Tao; Jake Wagoner; Nawazish Khan; Shireen Elhabian, PhD; Megan Pencek, MD; Ross Whitaker, PhD; Jesse Goldstein, MD Integrated Machine Learning Approaches for Quantifying Severity in Sagittal Craniosynostosis
10:10 AM – 10:15 AM	Janina Kueper, MD; Angel Dixon, BS; Nicolás M. Kass, BA; Jesse A. Goldstein, MD Genetic Insights and Surgical Solutions: Exploring the Intersection of Genetics and Plastic Surgery in the Management of Craniosynostosis
10:15 AM – 10:30 AM	Discussion
10:30 AM - 10:45 AM	Break/Vendor Exhibits
10:45 AM – 12:00 PM	Session II – Education, Quality and Innovation Presentations Moderators: Dr. Shawn Loder and Dr. Dawn Wang
10:45 AM – 10:50 AM	Malke Asaad, MD; <u>Zhazira Irgebay, MD</u> ; Vu T. Nguyen, MD The Plastic Surgery Boot Camp: Insights from Past Participants and Eye on the Future
10:50 AM – 10:55 AM	Nicolás M. Kass, BA; Sumaarg Pandya, BS; Angel Dixon, BA; Shovan Bhatia, BS; Nikhil Sharma, MD, MS; Malke Asaad, MD; Anjali Raghuram, MD; Shawn Loder, MD; Elizabeth A. Moroni, MD, MHA; Stephen P. Canton, MD, MS; Jacob Biehl, PhD; Edward G. Andrews, MD; Michael L. Gimbel, MD; Mario G. Solari, MD; Jesse A. Goldstein, MD Uses and Future Directions for Mixed Reality in Plastic Surgery: A Single-Institution Experience

10:55 AM – 11:00 AM	Andreea Gavrilescu, BA; Lauren Kokai, PhD; Asim Ejaz, PhD; J. Peter Rubin, MD Current Autologous Fat Graft Applications of Cryopreserved Adipose: A Review of Clinical Studies
11:00 AM - 11:05 AM	Benjamin B. Scott, MD; Shayan M. Sarrami, MD; Jiage Qian, MSPH; Carolyn De La Cruz, MD Dual Imaging Technique for Lymphovenous Anastomosis
11:05 AM – 11:10 AM	Casey Zhang, BS; <u>Vivian L. Wang, BS</u> ; Shayan Sarrami, MD; Pooja D. Reddy, BS; Carolyn De La Cruz, MD Closing the Loop on Revision: The Impact of Emotional Well-Being on Elective Revision after Breast Reconstruction
11:10 AM – 11:25 AM	Discussion
11:25 AM – 11:30 AM	Sumaarg Pandya, BS; Hilary Y. Liu, BS; Tiffany Jeong, BA; Ana Paula Fontoura Andrade Reis, BS; José Antonio Arellano, MD; Jesse A. Goldstein, MD; Joseph E. Losee, MD, MBA; Vu T. Nguyen, MD; Francesco M. Egro, MBChB, MSc, MRCS A 10-Year National Analysis of Plastic Surgery Residency ACGME Case Logs and Operative Experience
11:30 AM – 11:35 AM	Omar Elfanagely, MD; Nerone K.O. Douglas, BS, MS; Viraj Govani, BS; Joshua A. David, MD; Dana E. Bregman, MD Patient Dumping: Evaluating the Appropriateness of Emergency Hand Transfers
11:35 AM – 11:40 AM	Hazem Saqr, MD Candidate, Vu T. Nguyen, MD Postmastectomy Breast Reconstruction in Previously Augmented Patients: An Algorithmic Approach and Systematic Review of the Literature
11:40 AM – 11:45 AM	Connor A. Morson, BA, MBS; Elizabeth A. Bailey, MD, MSHP, MEd Advancing Plastic Surgery Education: The Imperative for Ultrasound Training
11:45 AM – 11:50 AM	Ertha Sefu Omba, MPH, MS; Deep Parikh, Teun Teunis, PhD, MD The Natural History of Recovery of Idiopathic Brachial Neuropathy: Systematic Review and Meta-Analysis
11:50 AM – 12:00 PM	Discussion
12:00 PM – 1:00 PM	Lunch and Presentation Visiting Professor – Lecture Benjamin Levi, MD Dr. Lee Hudson-Robert R. Penn Chair Division Chief of General Surgery Director, Center for Organogenesis Regeneration & Trauma Associate Professor in Surgery, University of Texas Southwestern Medical Center "How Musculoskeletal Tissues Turn to Steel and Leveraging this to Enhance Regeneration in the Steel City"
1:00 PM - 2:30 PM	Session III – Clinical Research II Presentations Moderators: Dr. Dana Bregman and Dr. Teun Teunis
1:00 PM - 1:05 PM	Meeti Mehta, BS; Anne E. Glenney, MD; Alexander J. Davit, MD Pediatric Firearm Injuries of the Hand

1:05 PM – 1:10 PM	Hakan Orbay, MD, PhD; Fuat Baris Bengur, MD; Matthew T. Bottegal, BS; Shaum Sridharan, MD; Mark Kubik, MD; Mario G. Solari, MD Outcomes of Microvascular Head and Neck Reconstruction in Solid Organ Transplant Patients
1:10 PM – 1:15 PM	Alexander J. Comerci, BS; Christopher Fedor, MS; Hamid Alahmari, BA; Teun Teunis, MD, PhD Recovery Trajectory of Brachial Plexus Palsy After Cervical Spinal Surgery: A Systematic Review and Meta-Analysis
1:15 PM – 1:20 PM	Elizabeth M. Kenny, MD; Samantha G. Maliha, MD; Teun Teunis, MD, PhD Management of PIPJ Fracture-Dislocations with Percutaneous Fixation
1:20 PM – 1:25 PM	Nienke A. Krijnen, MD; José Antonio Arellano, MD; Kitty Wu, MD; David Ring, MD, PhD; Teun Teunis, MD, PhD Do Surgeons Treat Their Patients' Upper Extremity Nerve Palsies, Like They Would Treat Their Own?
1:25 PM – 1:30 PM	Ebubechi Adindu; Sierra Short, BS; Nienke A. Krijnen, MD; Teun Teunis, MD, PhD Efficacy of GABA Analogues on Pain Intensity and Sleep Disturbance after Traumatic Nerve Injury: A Systematic Review and Meta-Analysis
1:30 PM - 1:45 PM	Discussion
1:45 PM – 1:50 PM	Nerone K.O. Douglas, MSc; <u>Viraj Govani, BS</u> ; Alexander Comerci, BS; Murali Kovuur, BS; Kero Kamel, BS; Kouadio Toukou, BS; Lynn Frydrych, MD; Jeffery Gusenoff, MD; Peter Rubin, MD, MBA Review of Brachioplasty Wound Complications Over 20 Years: Insights from a Prospective Registry
1:50 PM – 1:55 PM	Christopher Fedor, MS; José Antonio Arellano, MD; Mare Kaulakis, BS; Hilary Y. Liu, BS; Jenny Ziembicki, MD; Francesco Egro, MBChB, MSc, MRCS Clearing the Air: COPD's Lack of Effect on Inhalation Injury Hospital Outcomes
1:55 PM – 2:00 PM	Hilary Y. Liu, BS; Sumaarg Pandya, BS; Tiffany Jeong, BA; Mario Alessandri Bonetti, MD; José Antonio Arellano, MD; Jeffrey A. Gusenoff, MD; Vu T. Nguyen, MD; Guy M. Stofman, MD; Francesco M. Egro, MBChB, MSc, MRCS Resident Clinic is a Safe and Effective Model: A 12-Year Retrospective Review of Resident Cosmetic Cases
2:00 PM - 2:05 PM	Mare Kaulakis, BS; José Antonio Arellano, MD; Christopher Fedor, MS; Hilary Y. Liu, BS; Paul J. Rusilko, MD; Francesco M. Egro, MBChB, MSc, MRCS Management of Genitalia Burns: A Comparative Study Analysis
2:05 PM – 2:10 PM	<u>Tiffany Jeong, BA</u> ; Mario Alessandri Bonetti, MD; José Antonio Arellano, MD; Hilary Y. Liu, BS; Sumaarg Pandya, BS; Guy Stofman, MD; Francesco M. Egro, MBChB, MSc, MRCS 13-year Experience with a 3-Stage Dermal Regeneration Matrix Approach to the Acute Management of Hand Burns
2:10 PM- 2:15 PM	Kouadio Toukou, MS; Nerone Douglas, MSc; Lynn M. Frydrych, MD; J Peter Rubin, MD, MBA; Jeffrey A. Gusenoff, MD The Mummy Study: Does Simultaneous Four Limb Surgery Increase the Risk of Post-Operative Complications?
2:15 PM – 2:30 PM	Discussion
2:30 PM – 2:45 PM	Break/Vendor Exhibits

2:45 PM – 3:25 PM	Session IV – Basic Science Presentations Moderator: Dr. Kacey Marra
2:45 PM – 2:50 PM	<u>Vanessa Mroueh, MD</u> ; Fuat Baris Bengur, MD; Chiaki Komatsu, MD; Shawn J. Loder, MD; Elizabeth A. Moroni, MD, MHA; Wayne V. Nerone, BS; Tarek Elgendy, MD; Kelly R. Strong, BS; Benjamin K. Schilling, PhD; Ryan A. Orizondo, PhD; Mario G. Solari, MD Fasciocutaneous Free Flap Transfer in a Novel Ovine Model: Translational Model for the Future of Microsurgery
2:50 PM – 2:55 PM	Dzana Katana, PhD; Jayasinghe Suwan, PhD; Sara Trbojevic, BS; Casey M. Yin; Vanessa R. Rodgers; Alejandro J. Almarza, PhD; Kacey G. Marra, PhD Synthetic Conduits Efficacy in Neural Repair: Dip-Coated vs Electrospun Polymers
2:55 PM – 3:00 PM	Yadira Villalvazo, MD, MS; Yusuf Surucu, MD; Jose Antonio Arellano, MD; Fuat Baris Bengur, MD; Shawn Loder, MD; Hamid Malekzadeh, MD; Alexandra Vagonis, BS; Wayne Nerone, BS; Francesco Egro, MBChB, MSc, MRCS; Lauren Kokai, PhD; Kacey Marra, PhD; J. Peter Rubin, MD, MBA Single Stage Composite Regeneration of Skin and Subcutaneous Layer for Burn Reconstruction: Preclinical Study in a Swine Model
3:00 PM – 3:05 PM	Alexa Rivera del Río Hernández, MD; José A. Arellano, MD; Hamid Malekzadeh, MD; Fuat Baris Bengur, MD; Shawn Loder, MD; Juan J. Andrade Rojas, MD; James H-C Wang, PhD; Jeffrey A. Gusenoff, MD; Francesco M. Egro, MBChB, MSc, MRCS; J. Peter Rubin, MD, MBA, FACS; Asim Ejaz, PhD Unveiling Topical Metformin's Healing Potential against Radiation-Induced Skin Fibrosis
3:05 PM – 3:10 PM	Mohamed El Masry, MD, PhD; Sashwati Roy, PhD; Chandan K. Sen, PhD Management of Facial Burn Scar using Repurposed FDA-Approved Drugs
3:10 PM – 3:25 PM	Discussion
3:25 PM – 3:30 PM	Concluding Remarks - Dr. Jesse Goldstein and Dr. Kacey Marra
3:30 PM	Adjournment
3:30 PM – 5:30 PM	Reception and Award Presentations

View all abstracts here:



Description of Awards

Best Clinical Research Presentation – (one award in each of two clinical research sessions)

Awarded to the best oral presentation of a clinical abstract based on the assessment made by the Visiting Professor. Selection criteria include innovation, quality of approach, application to practice, and quality of presentation.

Best Basic Science Presentation

Awarded to the best oral presentation of a basic science abstract based on the assessment made by the Visiting Professor. Selection criteria include experimental design, significance of results, innovation, and quality of presentation.

Best Education, Quality and Innovation Presentation

Awarded to the best oral presentation of a quality/education abstract based on the assessment made by the Visiting Professor. Selection criteria include innovation, quality of approach, application to practice, and quality of presentation.

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