Conference Program

Medical Student Research Conference
September 13-14, 2023

University of Iowa
Roy J. & Lucille A. Carver College of Medicine

Sponsored by:
Medical Student Research Council

Free to University of Iowa Students
Medical Student Research Conference

Welcome to the 59th Annual Carver College of Medicine Student Medical Research Conference. This Conference provides an opportunity for medical students who have conducted research to present their results, receive feedback, and compete for awards.

September 13, 2023

8:00 - 10:00 AM  Concurrent Oral Presentations
1117, 2123, 2126, 2135, 2136, 2155, 2165, 2166, 2189 MERF

12:00 - 12:50 PM  Poster Session #1
Medical Student Poster Presentations in MERF Atrium

September 14, 2023

12:00 - 12:50 PM  Poster Session #2
Medical Student Poster Presentations in MERF Atrium

September 15, 2023

Awards Ceremony and Banquet

5:30 - 7:30 PM  Keynote Speaker, Award Presentations and Banquet Dinner
Prem Sahai Auditorium and MERF Atrium

Keynote Speaker

Kyle Brown, MD, MSC
Professor of Internal Medicine-Gastroenterology and Hepatology
Professor of Radiation Oncology

For student presenters and research mentors
Awards

There are several Research Day awards, including five Foundation Awards given to outstanding oral and outstanding poster presentations, and departmental and college sponsored general awards given to the top oral and poster presentations in eligible categories.

Foundation Awards

The Borts Award

The Borts Award was established by the Alpha Psi Chapter of Alpha Kappa Kappa Medical Fraternity in 1974 to honor I.H. Borts, a graduate of the University of Iowa College of Medicine and long-time supporter of the AKK. He is a distinguished scientist who has long been associated with the State Hygienic Laboratory. As a student he was influential in founding the Alpha Psi Chapter and for over thirty years remained one of their most loyal alumni. This award is open to all students.

The Edward Heath Award

In honor of Edward Heath, this award recognizes outstanding medical research. As Professor and Chairman of the Biochemistry Department at the University of Iowa, Heath was an outstanding example of a physician-scientist and supported excellence in research. His commitment to excellence was exemplified by the quality of research done in his laboratory as well as the many years spent teaching students. This award recognizes the student whose performance best represents outstanding achievement in the laboratory and the ability to communicate that achievement. All students will automatically be considered for this award.

Melvin Marcus Clinical Research Award

This award was originally established as the Iowa Student Medical Research Club (ISMRC) Award in 1989. We are honored to dedicate this award to the memory of Melvin L. Marcus, faculty supervisor of the ISMRC for over a decade. Marcus was instrumental in maintaining the club as an integral part of the University of Iowa research community. Marcus was also actively involved in clinical research and teaching of students, both in the laboratory and on the wards. He was frequently honored by his colleagues for his achievements. In keeping with this tradition, the Marcus Clinical Research Award is presented to the student whose presentation reflects outstanding work performed within a clinical area involving intact organ physiology. This prize is open to students involved in such research.

François M. Abboud Prize for Best Platform Presentation

This award was established in 2017 to honor Dr. François Abboud for his overall contributions as a research mentor and scholar. Abboud was instrumental in creating the research mentorship environment for medical students in the Carver College of Medicine from the time he joined the faculty in 1960. Abboud is known for his excellence in guiding students and colleagues in in the principles of research. This award recognizes the student whose performance best represents outstanding communication in a podium presentation.
Donald D. Heistad Prize for Best Poster Presentation

This award was established in 2017 to honor Donald Heistad who, along with Abboud, established the collaborative research and mentorship environment that has become a hallmark of the Carver College of Medicine and medical student experience. Heistad took the mentorship experience he received working with Abboud and developed his own style, always making time to work with students and discuss research ideas. This award recognizes the student whose performance best represents outstanding communication in a poster presentation.

Global Health Programs

The Global Health Program will sponsor an award for Excellence in Global Health research. The award will be designated for the best poster or oral presentation by a medical student in the field of Global Health.

Departmental Awards

ANATOMY AND CELL BIOLOGY
The Department of Anatomy and Cell Biology will sponsor an award for Excellence in Anatomy and Cell Biology Research for the best poster or oral presentation by a medical student in the discipline of anatomy and cell biology.

ANESTHESIA
The Department of Anesthesia will sponsor two awards; the Margaret V. Lunsford Award for Research in Anesthesia and the Excellence in Basic Science Research for the best oral or poster presentation by a medical student doing research in anesthesia.

BIOCHEMISTRY
The Department of Biochemistry will sponsor The Arthur A. Spector Award in Basic Biomedical Research for the best oral or poster presentation by a medical student doing research in biochemistry.

CARDIOTHORACIC SURGERY
The Department of Cardiothoracic Surgery will sponsor the Nicholas P. Rossi Award for Cardiothoracic Surgery Research. The award will be designated for the best oral or poster in the discipline of cardiothoracic surgery.

DERMATOLOGY
The Department of Dermatology will sponsor the Excellence in Dermatology Research award, designated for the best poster or oral presentation by a medical student in the discipline of dermatology.
EMERGENCY MEDICINE
The Department of Emergency Medicine will sponsor an award for Excellence in Emergency Medicine Research for the best poster or oral presentation by a medical student in the discipline of emergency medicine.

FAMILY MEDICINE
The Department of Family Medicine will sponsor an award for Excellence in Family Medicine Research designated for the best oral or poster presentation by a medical student in family medicine research.

INTERNAL MEDICINE
The Department of Internal Medicine will sponsor three awards for outstanding student presentations. The John Stokes Award for Research in Internal Medicine is designated for the best poster or oral presentation by a medical student in the discipline of internal medicine. Two additional awards for Excellence in Internal Medicine Research are for best oral or poster presentation by a medical student for research in any division and in any project area.

NEUROLOGY and NEUROSURGERY
The Departments of Neurosurgery and Neurology will sponsor three awards for the best poster or oral presentation by a medical student designated as Excellence in Basic Neuroscience Research, Excellence in Clinical Neuroscience Research, and Excellence in Translational Neuroscience Research.

NEUROSCIENCE AND PHARMACOLOGY
The Department of Neuroscience and Pharmacology will sponsor an award for Excellence in Neuroscience and Pharmacology Research. The award will be designated for the best poster or oral presentation by a medical student in the discipline of neuroscience and pharmacology, either basic science or clinical investigation.

OBSTETRICS/GYNECOLOGY
The Department of Obstetrics and Gynecology will sponsor two awards for Excellence in Clinical Research in Obstetrics & Gynecology and Excellence in Obstetrics & Gynecology Research, each designated for the best poster or oral presentation by a medical student in Ob-Gyn research.

OPHTHALMOLOGY
The Department of Ophthalmology will sponsor three awards for the best oral or poster presentations by a medical student in eye research named in honor of former physicians; the Thomas A. Weingeist Award in Ophthalmology, the William E. Scott Research Award in Ophthalmology, and the Hansjoerg E. Kolder Award for Ophthalmology Research.

ORTHOPEDICS
The Department of Orthopedics will sponsor two awards; the Research Excellence in Orthopedics award, and the Ponseti Prize in Orthopedic Research. The awards will be designated for the best poster or oral presentation by a medical student in basic, biomedical or clinical musculoskeletal/orthopedic research.
OTOLARYNGOLOGY
The Department of Otolaryngology will sponsor an award for *Excellence in Otolaryngology Research* designated for the best oral or poster presentation by a medical student in otolaryngology research.

PATHOLOGY
The Department of Pathology will sponsor two awards to honor *Richard G. Lynch, MD*, for the best poster or oral presentation by a medical student. The award will be open to student research in any project area.

PEDIATRICS
The Department of Pediatrics will sponsor two awards designated for the best oral or poster presentation by a medical student for *Excellence in Pediatric Clinical Research* and *Excellence in Pediatric Basic Science Research*.

PSYCHIATRY
The Department of Psychiatry will sponsor three awards, the *George Winokur Research Award*, the *Bob Robinson Research Award* and the *Lauretta Bender Research Award*. The awards will be designated for the best poster or oral presentations by a medical student for research in psychiatry.

RADIOLOGY
The Department of Radiology will sponsor the *Jason Martin, MD- Medical Student Research Award*. The award will be designated for the best poster or oral presentation by a medical student in image-based research. Martin graduated from the University of Iowa Carver College of Medicine and participated in medical research in the Radiology department as a medical student.

RADIATION ONCOLOGY
The Department of Radiation Oncology will sponsor the *Larry W. Oberley Award in Radiation Oncology*. The award will be designated for the best poster or oral presentation by a medical student in the discipline of radiation oncology, for either basic science or clinical investigation.

SURGERY
The Department of Surgery will sponsor the *Kimberly Ephgrave Medical Student Award for Research in Surgery*. This award will be designated for the best poster or oral presentation by a medical student in the discipline of surgery.

UROLOGY
The Department of Urology will sponsor an award for *Excellence in Urology Research* designated for the best oral or poster presentation by a medical student in urology research.
Outstanding Mentorship Awards

Students from the Summer Research Fellowship (SRF) began nominating outstanding research mentors in 2016. These award winners are selected from among nominations submitted by medical student research students at the completion of their summer research experience. This year we are awarding Outstanding Mentorship in Clinical Research, Outstanding Mentorship in Basic Research and Outstanding Mentorship in Translational Research.

A special thank you to:

The Iowa Medical Student Research Council - Robert Roghair, Director
CCOM Office of Student Affairs and Curriculum staff;
the Departments of Anatomy and Cell Biology, Anesthesiology, Biochemistry, Cardiothoracic Surgery, Dermatology, Emergency Medicine, Family Medicine, Internal Medicine, Molecular Physiology & Biophysics, Neurology, Neuroscience and Pharmacology, Neurosurgery, Obstetrics & Gynecology, Ophthalmology, Orthopedics, Otolaryngology, Pathology, Pediatrics, Psychiatry, Radiology, Radiation Oncology, Surgery, and Urology; Institute for Clinical and Translational Science
Acknowledgements

Judges

Carryn Anderson, MD  
Joseph Kowalski, MD
David Bedell, MD  
Matthew Krasowski, MD, PhD
Jennifer Bermick, MD  
Clarence Kreiter, PhD
Noelle Bowdler, MD  
Ryan Kruse, MD
Kyle Brown, MD  
Markus Kuehn, PhD
Marisa Buchakjian, MD, PhD  
Barry London, MD, PhD
James Byrne, MD, PhD  
Katherine Mathews, MD
Erica Carlisle, MD  
Patrick McGonagill, MD
Martha Carvour, MD, PhD  
Kelly Messingham, PHD
Mitchell Coleman, PhD  
Mohamad Mokadem, MD
Marcelo Correia, MD, PHD  
Kelly Mulfaul, PhD
Karen Cyndari, MD, PhD  
Manasa Nayak, PHD
Benjamin Darbro, MD, PhD  
Elizabeth Newell, MD
Brandon Davies, PhD  
Catherine Olinger, MD
Catherine DeGeeter, MD  
Brian O'Neill, MD, PhD
Natalie Denburg, PhD  
Robin Paetzold, MBA
Arlene Drack, MD  
Catherina Pinnaro, MD
Alina Dumitrescu, MD  
Danielle Rios, MD
Martine Dunnwald, PharmD, PhD  
Robert Roghair, MD
Melissa Fath, PhD  
Mark Santillan, MD, PHD
Anthony Fischer, MD, PHD  
Donna Santillan, PHD
Colette Galet, PhD  
Todd Scheetz, PhD
Joel Geerling, MD, PHD  
Val Sheffield, MD, PhD
Jessica Goetz, PhD  
Dionne Skeete, MD
Oliver Gramlich, PHD  
Doug Spitz, PhD
Kari Harland, PhD  
Priyanka Vakkalanka, PhD
Matthew Harper, PhD  
Brad Van Voorhis, MD
Unyime Ituk, MBBS, FCARCSI  
Andrea Weber, MD
C. Michael Knudson, MD, PhD  
Cynthia Wong, MD
Student {Oral} Presentations

Maryam Ahmad, M2, Oral Presentation, Room 1117 at 8:00
Title: Effectiveness of Computerized Adaptive Tests to Screen for Perinatal Anxiety in Underserved Women of Color
Mentor: Beatriz Penalver Bernabe, Biomedical Engineering-University of Illinois at Chicago

Hend Al-Kaylani, M2, Oral Presentation, Room 2189 at 8:45
Title: The role of SIN3A dysregulation in neural crest differentiation and Witteveen-Kolk syndrome
Mentor: Markus H. Kuehn, Ophthalmology & Visual Sciences

Emily Baldwin, M2G, Oral Presentation, Room 2123 at 8:30
Title: Dissecting the 16p11.2 hemi-deletion to study sex specific striatal phenotypes of neurodevelopmental disorders
Mentor: Ted Abel, Pharmacology

Evan Balk, M2, Oral Presentation, Room 2189 at 9:15
Title: Preloaded DSAEK Corneal Allograft Injector with Wide-Lumen Storage: Exploring Endothelial Cell Loss Reduction in a Proof-of-Concept Study
Mentor: Christopher Sales, Ophthalmology & Visual Sciences

Alyssa Bartels, M2, Oral Presentation, Room 2136 at 8:45
Title: Frameshift mutations in mutL that facilitate antibiotic resistance in Staphylococcus aureus
Mentor: Anthony Fischer, Pediatrics

Matt Benson, M2, Oral Presentation, Room 2165 at 8:00
Title: Reoperation rates of isolated meniscus repair with and without marrow stimulation
Mentor: Robert Westermann, Orthopaedics and Rehabilitation

Colleen Bloeser, M1, Oral Presentation, Room 1117 at 9:15
Title: Incidence of frailty in midlife adults and its impacts on outcomes
Mentor: Dionne Skeete, Surgery

Chase Brandt, M2, Oral Presentation, Room 2136 at 8:00
Title: Low shunt burden from PDA is not associated with adverse outcomes in premature infants
Mentor: Danielle Rios, Pediatrics

AJ Chowdhury, M4, Oral Presentation, Room 2123 at 9:15
Title: Surgical management of symptomatic vertebral hemangiomas: a single institution experience and literature review
Mentor: Patrick Hitchon, Neurosurgery
Kristin Davis, M2, Oral Presentation, Room 2155 at 8:45
   **Title:** Nystagmus recordings and correlation with underlying diagnosis in children
   **Mentor:** Alina Dumitrescu, Ophthalmology & Visual Sciences

Abby Davison, M2, Oral Presentation, Room 2135 at 9:45
   **Title:** Indications for umbilical cord drug testing and associations of positive test results with PHQ-9 scores
   **Mentor:** Abbey Hardy-Fairbanks, Obstetrics & Gynecology

Irving Delgado-Arellanes, M2, Oral Presentation, Room 2189 at 9:30
   **Title:** Baseline Assessment of Skeletal Muscle Mass Loss After Hip Preservation Surgery
   **Mentor:** Michael Willey, Orthopaedics and Rehabilitation

Lubin Deng, M2, Oral Presentation, Room 2155 at 8:00
   **Title:** Machine Learning with Multiple Modalities of Brain Magnetic Resonance Imaging Data to Identify the Presence of Bipolar Disorder
   **Mentor:** Vincent A. Magnotta, Radiology

Olivia DiGioia, M2, Oral Presentation, Room 2155 at 9:15
   **Title:** Assessing the efficacy of TEC kinase inhibition in alopecia areata
   **Mentor:** Ali Jabbari, Dermatology

Jackson Dunning, M2, Oral Presentation, Room 2135 at 9:00
   **Title:** Determining Best Treatments for Pediatric Bladder and Bowel Dysfunction
   **Mentor:** Douglas Storm, Urology

Bridget Easler, M2, Oral Presentation, Room 2135 at 8:00
   **Title:** Examining Dynamics of Consent and Coercion in Sterilization Cases Reviewed by the Iowa Board of Eugenics.
   **Mentor:** Nicole Novak, College of Public Health

Chris Franke, M2, Oral Presentation, Room 2126 at 8:15
   **Title:** Alterations in neonatal immune profiles following chorioamnionitis exposure
   **Mentor:** Jennifer Bermick, Pediatrics

Annie Galloway, M2, Oral Presentation, Room 1117 at 9:45
   **Title:** Chaotic Embryos: Catalogue and Department-Wide Protocol Development
   **Mentor:** Ginny Ryan, University of Washington, Seattle WA

Trent Gilbert, M2, Oral Presentation, Room 2126 at 9:00
   **Title:** Evaluating tissue specificity of RNA aptamers discovered via whole-organ cardiac SELEX
   **Mentor:** William Thiel, Internal Medicine
Student {Oral} Presentations

Klaudia Golebiewski, M2, Oral Presentation, Room 2135 at 8:30
   **Title:** Fever as a protective factor for development of lung injury and kidney injury in patients with sepsis  
   **Mentor:** Nicholas Mohr, Emergency Medicine

Noah Gritters, M2, Oral Presentation, Room 2155 at 8:15
   **Title:** Associations between NIH Toolbox Emotional Battery measures and previous suicide attempt in bipolar disorder type I  
   **Mentor:** Vincent A. Magnotta, Radiology

Amy Huang, M2, Oral Presentation, Room 2135 at 9:15
   **Title:** Understanding the Relationship between Bladder Bowel Dysfunction and Attention Deficit/Hyperactivity Disorder  
   **Mentor:** Angelena Edwards, Urology

Brianna Iverson, M2, Oral Presentation, Room 2126 at 8:45
   **Title:** Development of a Clinical Study: RP1 in Combination with PD1 Blockade in Patients with Solid Tumors  
   **Mentor:** Mohammed Milhem, Internal Medicine

Andreas Kantartzis, M2G, Oral Presentation, Room 2123 at 8:15
   **Title:** ELISpot Optimization for Sepsis Immunophenotyping  
   **Mentor:** Vladimir Badovinac, Pathology

Rekha Karuparthy, M3, Oral Presentation, Room 2126 at 8:00
   **Title:** Characterization of Stress Levels in the NICU  
   **Mentor:** John M. Dagle, Pediatrics

Kevin Kato, M2, Oral Presentation, Room 2166 at 9:30
   **Title:** Proximal release of the long head of the biceps tension in repair of chronic distal biceps rupture, a feasibility study  
   **Mentor:** James Nepola, Orthopaedics and Rehabilitation

Aditi Katwala, M2, Oral Presentation, Room 2189 at 8:30
   **Title:** Changes in rat ultrasonic vocalizations following lesion of amygdala, insula, and anterior cingulate cortex  
   **Mentor:** Matthew Hoffman, Otolaryngology

Chris Klasson, M2, Oral Presentation, Room 2126 at 9:15
   **Title:** Iterative Development and Evaluation of a Community-Based Health Education Program about Patient-Centered, Culturally Responsive Care for Post-Acute Sequelae of COVID-19  
   **Mentor:** Martha Carvour, Internal Medicine
Student {Oral} Presentations

Tara Kortlever, M1, Oral Presentation, Room 2126 at 8:30
Title: Impact of MIRO1 on Vascular Smooth Muscle Cell Proliferation
Mentor: Isabella Grumbach, Internal Medicine

Emma Lewis, M4, Oral Presentation, Room 2166 at 8:45
Title: Validating a point-of-care predictive tool for preeclampsia in diverse populations
Mentor: Mark Santillan, Obstetrics & Gynecology

Ben Linden, M4, Oral Presentation, Room 2123 at 9:30
Title: Is Frailty Discouraging Surgeons from Performing Thoracolumbar Fusion? A Retrospective Study
Mentor: Patrick McGonagill, Surgery

Abbie Lund, M2, Oral Presentation, Room 2135 at 9:30
Title: Race and Rurality as Risk Factors for Preterm Birth
Mentor: Mark Santillan, Barcey Levy, David Bedell, Obstetrics & Gynecology

Kimia Maddahi, M2, Oral Presentation, Room 2165 at 9:00
Title: The Prevalence of Surgical Intervention in Symptomatic Carpometacarpal Bossing
Mentor: Joseph Buckwalter V, Orthopaedics and Rehabilitation

Srija Manchkanti, M3, Oral Presentation, Room 2126 at 9:30
Title: Transgender Women on Estrogen Have a Lower Burden of Thrombotic Events Compared to Cisgender Men: A Nationwide Hospital-Based Survey
Mentor: Sanjana Dayal, Internal Medicine

Smrithi Mani, M4, Oral Presentation, Room 2166 at 9:00
Title: Retrospective Review of Clinicopathological Findings of Hereditary Leiomyomatosis and Renal Cell Cancer and Evaluation of FH/2SC Staining for Genetic Referral
Mentor: Vincent Liu, Dermatology

Elisabeth Martin, M2, Oral Presentation, Room 2136 at 9:00
Title: Bispectral EEG to predict delirium after spine fracture in older adults
Mentor: Catherine Olinger, Orthopaedics and Rehabilitation

Dominique Mata de Leon, M2, Oral Presentation, Room 1117 at 9:30
Title: Understanding Cancer Networks: Development, Goals, and Operations
Mentor: Ingrid Lizarraga, Surgery
Student {Oral} Presentations

Steele McCulley, M1, Oral Presentation, Room 2165 at 8:15
  Title: Efficacy of Intraoperative Intra-articular Morphine on Post-Operative Pain and Opioid Consumption Following Hip Arthroscopy
  Mentor: Robert Westermann, Orthopaedics and Rehabilitation

Stephanie Meza, M2, Oral Presentation, Room 1117 at 8:30
  Title: Examining the Utility of Thermal Imaging in Trauma Resuscitations
  Mentor: Carlos Pelaez, Surgery

Will Moody, M2, Oral Presentation, Room 2155 at 9:00
  Title: Development and Assessment of Systematic Educational Intervention to Improve Knowledge of Disease and Quality of Life by Cutaneous Lymphoma Patients
  Mentor: Vincent Liu, Dermatology

Sanah Munir, M2, Oral Presentation, Room 2126 at 9:45
  Title: Diabetic Cardiomyopathy: Sodium-Dependent Glucose Transporter 1 in Cardiac Mitochondrial Dysfunction
  Mentor: Ferhaan Ahmad, Internal Medicine

Francis Ogaban, M2, Oral Presentation, Room 2136 at 9:15
  Title: Quantifying value loss due to presenteeism and absenteeism in worker’s compensation spinal fusion patients
  Mentor: Catherine Olinger, Orthopaedics and Rehabilitation

Julian Nelson Pablo, M2, Oral Presentation, Room 2189 at 9:00
  Title: Implementation of a Mediterranean Diet Exacerbates Visual and Motor-Sensory Impairment in an Animal Model of Multiple Sclerosis
  Mentor: Oliver Gramlich, Ophthalmology & Visual Sciences

John Pape, M2, Oral Presentation, Room 2136 at 9:30
  Title: The Validation of an Endurance Static Hold in Assessing Functional Status
  Mentor: Jacob Elkins, Orthopaedics and Rehabilitation

Linda Peng, M2, Oral Presentation, Room 2166 at 8:15
  Title: Identifying patient perspectives on a low-threshold medications for addiction treatment (MAT) clinic
  Mentor: Andrea Weber, Psychiatry

Wade Pingel, M2, Oral Presentation, Room 2165 at 9:15
  Title: Association of preoperative ACL integrity and patient-reported outcome measures after total knee arthroplasty: Initial impressions after 3 months
  Mentor: Andrew Schwartz, Orthopaedics and Rehabilitation
Student {Oral} Presentations

Faith Prochaska, M1GA, Oral Presentation, Room 2123 at 8:00
  Title: Maternal Hypertension Reveals Potential Neuroinflammatory Mechanisms of Epilepsy
  Mentor: Alexander Bassuk, Pediatrics

Sydney Rand, M3, Oral Presentation, Room 2155 at 9:30
  Title: The Value of Inpatient Dermatology Consultations: Improving Patient Outcomes Through Expert Management
  Mentor: Vincent Liu, Dermatology

Sam Reyes, M1, Oral Presentation, Room 2136 at 9:45
  Title: The Accuracy of Self-Reported Height in Orthopaedic Clinics
  Mentor: Jacob Elkins, Orthopaedics and Rehabilitation

Madeline Rhomberg, M2, Oral Presentation, Room 2189 at 8:00
  Title: Investigating Embedded Microspheres for Controlled, Sustained Release of Neurotrophic Factors in Cochlear Implants
  Mentor: Marlan R. Hansen, Otolaryngology - Head & Neck Surgery

Nathan Robillard, M2, Oral Presentation, Room 2136 at 8:15
  Title: Determining the Immuno-Modulatory Effects of Electromagnetic Fields
  Mentor: Val Sheffield, Pediatrics

Braden Rolig, M3, Oral Presentation, Room 1117 at 9:00
  Title: Lymphopenia in Burn Patients Predicts Discharge Disposition
  Mentor: Patrick McGonagill, Surgery

Kristina Rossmiller, M2, Oral Presentation, Room 2165 at 9:30
  Title: Post-Procedure Protocols After Intraarticular Orthobiologic Injections - A Review
  Mentor: Ryan Kruse, Orthopaedics and Rehabilitation

Syim Salahuddin, M2, Oral Presentation, Room 1117 at 8:15
  Title: Loss of Muscarinic Receptors Innervation Increases Cell Proliferation in Acute Airway Injury.
  Mentor: Kalpaj Parekh, Cardiothoracic Surgery

Peter Sanchez, M4, Oral Presentation, Room 2123 at 9:00
  Title: Resident Exposure to Oculofacial Diagnoses On Call at an Academic Level I Trauma Center
  Mentor: Erin Shriver, Ophthalmology & Visual Sciences

Noah Scigliano, M2, Oral Presentation, Room 2135 at 8:45
  Title: The Effect of Full-Body Weight-bearing on Palmar Pressure Distribution
  Mentor: Jess Goetz, Orthopaedics and Rehabilitation
**Student {Oral} Presentations**

**Isaac Slagel, M2, Oral Presentation, Room 1117 at 8:45**  
*Title:* Secondary Undertriage in a Rural Trauma System: Revisiting Twice-Transferred Patients to a Level 1 Trauma Center  
*Mentor:* Colette Galet, Surgery

**Leon Sun, M2, Oral Presentation, Room 2135 at 8:15**  
*Title:* The effect of early Melatonin agonist administration on delirium outcomes among hospitalized elderly adults  
*Mentor:* Sangil Lee, Emergency Medicine

**Ian Sutton, M2G, Oral Presentation, Room 2123 at 8:45**  
*Title:* Pharmacological ascorbate modulates the expression of immunotherapy biomarkers in NSCLC  
*Mentor:* Douglas R. Spitz, Free Radical & Radiation Biology

**McKenzie Temperly, M2, Oral Presentation, Room 2189 at 9:45**  
*Title:* Bispectral EEG (BSEEG) effectively predicts delirium in older adults with low-energy femur fracture  
*Mentor:* Michael Willey, Orthopaedics and Rehabilitation

**Andy Tran, M4, Oral Presentation, Room 2166 at 9:15**  
*Title:* Sociodemographic Variation in the Utilization of Minimally Invasive Surgical Approaches for Pancreatic Cancer  
*Mentor:* Richard Burkhart, Johns Hopkins University-Surgery

**Jaden Troxel, M2, Oral Presentation, Room 2165 at 8:45**  
*Title:* Clinical Manifestations of Multiple Hereditary Exostoses: A Retrospective Study of 103 Patients in Iowa  
*Mentor:* Joseph Buckwalter V, Orthopaedics and Rehabilitation

**Matt Van Engen, M4, Oral Presentation, Room 2166 at 8:30**  
*Title:* DAIR for Periprosthetic Joint Infection in Primary versus Revision Knee Arthroplasty – A Comparison in Survival Rate  
*Mentor:* Nicolas Noiseux, Orthopaedics and Rehabilitation

**Ryan Williams, M2, Oral Presentation, Room 2189 at 8:15**  
*Title:* Investigating the Electrical Properties of a Zwitterionic Hydrogel Applied to Cochlear Implants  
*Mentor:* Marlan R. Hansen, Otolaryngology - Head & Neck Surgery

**Brianna Wright, M4, Oral Presentation, Room 2123 at 9:45**  
*Title:* SARS-CoV-2 Seropositivity Among Healthcare Professionals in a Rural State  
*Mentor:* Loreen Herwaldt, Internal Medicine
Sophia Xiao, M2, Oral Presentation, Room 2165 at 8:30
   Title: Course of Carpal Tunnel Syndrome Management in People with Diabetes
   Mentor: Joseph Buckwalter V, Orthopaedics and Rehabilitation

Luke Zerwic, M2, Oral Presentation, Room 2136 at 8:30
   Title: The Impact of 3D Printed vs 3D Virtual Congenital Heart Models on Patient and Family Education
   Mentor: Ravi Ashwath, Pediatrics

Jimmy Zhang, M2, Oral Presentation, Room 2155 at 8:30
   Title: Retroclival epidural hematoma in 7-year-old female after motor vehicle accident
   Mentor: Lillian Lai, Radiology
Student {Poster} Presentations

Peyton Alder, M1G, Poster Presentation, on WEDNESDAY #43

Title: Neuron Morphology Analysis in Human Autopsy Tissue
Mentor: Georgina Aldridge, Neurology

Ethan Angle, M2, Poster Presentation, on WEDNESDAY #9

Title: Challenges in Applying Drug Docking Software to Computational Models of Whole Cells
Mentor: Adrian Elcock, Biochemistry

Mohad Awan, LOA, Poster Presentation, on WEDNESDAY #29

Title: Targeting Lab Draws to Reduce Central Venous Catheter Manipulation
Mentor: Karen Brust, Internal Medicine

Alex Belzer, M4, Poster Presentation, on WEDNESDAY #13

Title: Risk factors for development of programmed death 1 (PD-1) inhibitor bullous pemphigoid
Mentor: Janet Fairley, Dermatology

Matt Biegger, M2, Poster Presentation, on THURSDAY #26

Title: Body Composition Changes Following Revision Total Joint Arthroplasty
Mentor: Jacob Elkins, Orthopaedics and Rehabilitation

Kelsey Blocklinger, LOA, Poster Presentation, on THURSDAY #16

Title: Aspirin Specifically Targets Triglyceride and Copeptin Levels in the Development of Preeclampsia
Mentor: Donna Santillan, Obstetrics & Gynecology

Savannah Bogner, M2, Poster Presentation, on THURSDAY #28

Title: WBCT-Based Micromotion RSA of Post-Operative Implant Migration in TKA Patients
Mentor: Jacob Elkins, Orthopaedics and Rehabilitation

David Chang, M1G, Poster Presentation, on THURSDAY #44

Title: Gene Transfer Efficiency in Models of Increased Secreted Airway Mucins
Mentor: Patrick Sinn, Pediatrics

Joshua Cheek, M2, Poster Presentation, on WEDNESDAY #15

Title: Developing Resources to Fill Gaps in Dermatological Training in Bagamoyo, Tanzania, Co-presenters: Erica Hsu and Katherine McDonald
Mentor: Karolyn Wanat, Dermatology

Jason Chen, M1, Poster Presentation, on THURSDAY #30

Title: Gene Transfer Efficiency in Models of Increased Secreted Airway Mucins
Mentor: Patrick Sinn, Pediatrics
Student {Poster} Presentations

Katie Choate, M2, Poster Presentation, on WEDNESDAY #31
   Title: Significance of alkaline phosphatase elevations in alcoholic hepatitis
   Mentor: Kyle Brown, Internal Medicine

Gage Christenson, M1, Poster Presentation, on THURSDAY #32
   Title: Prevalence of Sarcopenia in Patients Undergoing Elective Spine Surgery
   Mentor: Catherine Olinger, Orthopaedics and Rehabilitation

Mary Crompton, M1, Poster Presentation, on THURSDAY #14
   Title: Expression of RcrB confers resistance to hypochlorous acid in uropathogenic Escherichia coli
   Mentor: Jan Ulrich Dahl, Illinois State University, Microbiology

Tim Davie, M4, Poster Presentation, on WEDNESDAY #33
   Title: Acute potassium feeding in mice alters NCC phosphorylation within minutes
   Mentor: Jonathan Nizar, Internal Medicine

Mark Dyken, M2, Poster Presentation, on THURSDAY #50
   Title: NREM Sleep Manipulations and Memory Consolidation
   Mentor: Ted Abel, Pharmacology

Yumeng Engelking, M2, Poster Presentation, on WEDNESDAY #17
   Title: Investigating the role of CD4 cells and interferon-gamma in alopecia areata pathogenesis using a mouse model
   Mentor: Ali Jabbari, Dermatology

Bennett Feuchtenberger, M4, Poster Presentation, on WEDNESDAY #55
   Title: Differences in Comorbidities and Outcomes of Primary Total Joint Arthroplasty of the Hip and Knee Based on Referral Type at an Academic Center
   Mentor: Jacob Elkins, Orthopaedics and Rehabilitation

Madeline Fitzhugh, M3, Poster Presentation, on WEDNESDAY #19
   Title: WHAT A HAND CAN TELL US: ARTIFICIAL INTELLIGENCE TO PREDICT THE AGE OF A HAND
   Mentor: Jennifer Powers, Dermatology

Erica Fossee, M1G, Poster Presentation, on WEDNESDAY #25
   Title: Associations between lead exposure, the microbiome, and cognitive function in adults
   Mentor: Shoshannah Eggers, Epidemiology

Emily Fuller, M4, Poster Presentation, on THURSDAY #64
   Title: Predictors of Tissue Infarction from Distal Emboli after Mechanical Thrombectomy
   Mentor: Colin Derdeyn, Radiology
Student {Poster} Presentations

Daniel Galvez, M2, Poster Presentation, on WEDNESDAY #35
   Title: The Story of Stories: A Qualitative Analysis of Non-Healthcare Frontline Workers’ Experiences with COVID-19 Protocols and Health Communication During the Pandemic
   Mentor: Martha Carvour, Internal Medicine

Ryan Gannon, M2, Poster Presentation, on THURSDAY #4
   Title: Novel FoxO-targets in the regulation of Diabetes-related muscle weakness
   Mentor: Brian O’Neill, Internal Medicine

Jian Gao, M2, Poster Presentation, on WEDNESDAY #3
   Title: Assessing the Mechanical Properties of Acutely Injured Lungs: A Comparative Study of Traditional and Novel Ventilation Techniques Utilizing Computed Tomographic (CT) Imaging
   Mentor: David Kaczka, Anesthesia

Grace Gasser, M2G, Poster Presentation, on THURSDAY #20
   Title: Investigating the Effects of Complement on Choroidal Endothelial Cells
   Mentor: Robert Mullins, Ophthalmology & Visual Sciences

Stephanie Gibbons, M2, Poster Presentation, on WEDNESDAY #5
   Title: Disinfecting Luer-lock Syringe Tips of ST-5 S. aureus for Anesthesia Intravenous Access
   Mentor: Randy Loftus, Anesthesia

Lexie Golden, M1G, Poster Presentation, on WEDNESDAY #27
   Title: Preliminary data from the largest prospective cohort study of neuroendocrine tumors (NET-PRO)
   Mentor: Michael O’Rorke, Epidemiology

Kaitlyn Grimes, M1, Poster Presentation, on THURSDAY #22
   Title: Risk of vision threatening complications with sports in Juvenile X-linked Retinoschisis
   Mentor: Arlene Drack, Ophthalmology & Visual Sciences

Austin Halupnik, M2, Poster Presentation, on THURSDAY #58
   Title: Retrospective Review of Swallowing Outcomes for Oropharynx and Larynx Patients after Chemoradiation
   Mentor: Carryn Anderson, Radiation Oncology

Sam Hansen, M2, Poster Presentation, on THURSDAY #72
   Title: Measurement of Health Utility in Reconstructive Urologic Surgical Procedures
   Mentor: Bradley Erickson, Urology
Student {Poster} Presentations

Sam Hatfield, M2G, Poster Presentation, on THURSDAY #60
  Title: Foamated Hydrogels act Synergistically with Immune Therapy as a Local Niche for Peritumoral Dendritic Cells
  Mentor: James Byrne, Radiation Oncology

Rachel Heinrich, M2, Poster Presentation, on WEDNESDAY #21
  Title: The Impact of Systemic Immunosuppression on Cutaneous Wound Healing
  Mentor: Kelly Messingham, Dermatology

Jared Hill, M1, Poster Presentation, on WEDNESDAY #1
  Title: RalGPS2 Activates RalA for Primary Ciliogenesis in Epithelial Cells
  Mentor: Charles Yeaman, Anatomy & Cell Biology

Arman Hlas, M4, Poster Presentation, on THURSDAY #34
  Title: The Acidity of Normal Saline Used in Arthroscopic Irrigation Causes Deleterious Oxidative Stress, Metabolic Dysfunction, and Chondrocyte Death
  Mentor: James Martin, Orthopaedics and Rehabilitation

Jason Hristopoulos, M1G, Poster Presentation, on THURSDAY #6
  Title: Assessing the effects of CDK4/6 and MEK1/2 inhibition in Undifferentiated Pleomorphic Sarcoma
  Mentor: Rebecca Dodd, Internal Medicine

Erica Hsu, M2, Poster Presentation, on THURSDAY #2
  Title: Preventing Skin Disease through Screening and Education at Primary Schools in Bagamoyo, Tanzania Co-presenters: Joshua Cheek and Katherine McDonald
  Mentor: Karolyn Wanat, Dermatology

Kyle Jackson, M4, Poster Presentation, on WEDNESDAY #65
  Title: Development of an Automated EEG Analysis Algorithm to Assess the Efficacy of Naltrexone in the Prevention of Epilepsy
  Mentor: Alexander Bassuk, Pediatrics

Olivia Jenks, M2, Poster Presentation, on THURSDAY #36
  Title: The Impact of Mental Readiness on the Return to Athletic Performance Following Hip Preservation Surgery
  Mentor: Robert Westermann and Michael Willey, Orthopaedics and Rehabilitation

Gretchen Jones, M2, Poster Presentation, on THURSDAY #38
  Title: A Retrospective Review of Hormonal Contraceptive Use in Young Women Undergoing ACL Surgery
  Mentor: Kyle Duchman, Orthopaedics and Rehabilitation
Student {Poster} Presentations

Tanner Kempton, M4, Poster Presentation, on WEDNESDAY #57

**Title:** Tragal cartilage graft in transcanal endoscopic tympanoplasty in pediatric patients  
**Mentor:** Sohit Kanotra, Otolaryngology

Victor Kilonzo, M2G, Poster Presentation, on WEDNESDAY #67

**Title:** Investigating learning-induced expression of Nr4A2 in the ventral tegmental area and dorsal hippocampus  
**Mentor:** Ted Abel, Pharmacology

Cameron Lawrence, M2, Poster Presentation, on WEDNESDAY #71

**Title:** Multiplex PCR Urine Testing Compared to the Standard Urine Culture for Preoperative Screening in Elderly Urology Patients  
**Mentor:** Annah Vollstedt, Urology

Andrew Lee, M2, Poster Presentation, on THURSDAY #40

**Title:** The Clinical Usefulness of the iHOT Survey in the Evaluation of Hip Pain and Hip Preservation Surgery  
**Mentor:** Robert Westermann, Orthopaedics and Rehabilitation

Jace Leininger, M2, Poster Presentation, on THURSDAY #66

**Title:** Regional Pulmonary V/Q Improvements with Sildenafil vs. Placebo in a Smoking Cessation Study Monitored via Multi-spectral CT  
**Mentor:** Eric A. Hoffman, Radiology

Katherine McDonald, M1A, Poster Presentation, on THURSDAY #2

**Title:** Preventing Skin Disease through Screening and Education at Primary Schools in Bagamoyo, Tanzania, Co-presenters: Joshua Cheek and Erica Hsu  
**Mentor:** Karolyn Wanat, Dermatology

Johnny Malicoat, M2, Poster Presentation, on WEDNESDAY #73

**Title:** Unraveling Growth Variability in Renal Masses of Von Hippel-Lindau Patients: A Comprehensive Analysis of Kinetics and RNA Expression for Predictive Biomarker Discovery  
**Mentor:** James Brown, Urology

Thomas Martinez, M2, Poster Presentation, on THURSDAY #24

**Title:** Prognostic Factors for Long Term Outcomes in Neovascular Age-Related Macular Degeneration  
**Mentor:** Elliott Sohn, Ophthalmology & Visual Sciences

Elle McCormick, M3, Poster Presentation, on THURSDAY #42

**Title:** Return to Sport, Post-Operative Performance Testing, and Reinjury Rates Among Athletes Treated with Hamstring, Quadriceps, and Patellar Tendon Autograft ACL Reconstruction  
**Mentor:** Robert Westermann, Orthopaedics and Rehabilitation
**Student {Poster} Presentations**

**Emory McManimon, M2, Poster Presentation, on THURSDAY #8**

*Title*: Restoring Helminthic Regulation of Intestinal Inflammation by means of Augmentation of STAT6 Activity in Donor T Cells in Graft-versus-Host Disease  
*Mentor*: M Nedim Ince, Internal Medicine

**Daniel Moe, M2, Poster Presentation, on THURSDAY #46**

*Title*: Associations Between Vitamin D and Pediatric Celiac Disease Presentation  
*Mentor*: Riad Rahhal and Catherine DeGeeter, Pediatrics

**Kathy Nguyen, M2G, Poster Presentation, on THURSDAY #10**

*Title*: Triggering Receptor Expressed on Myeloid Cells-1 (TREM-1) Restricts Allergic Airway Inflammation by Promoting Eosinophil Apoptosis  
*Mentor*: Julia Klesney-Tait, Internal Medicine

**Catherine Nugent, M2, Poster Presentation, on THURSDAY #68**

*Title*: A-priori prediction of negative V/Q scans in pulmonary hypertension  
*Mentor*: Michael Graham, Radiology

**Ikenna Nwosu, M2, Poster Presentation, on THURSDAY #62**

*Title*: Intravesical Device for Non-Muscle Invasive Bladder Cancer  
*Mentor*: James Byrne, Radiation Oncology

**Lucy Olson, M2, Poster Presentation, on THURSDAY #52**

*Title*: Exploring iron as a biomarker of neurodegeneration in Huntington’s Disease: A longitudinal study  
*Mentor*: Peg Nopoulos, Psychiatry

**Eric Ortiz, M2, Poster Presentation, on WEDNESDAY #37**

*Title*: Prevalence of the Post-Acute Sequelae of COVID-19 Among Frontline Workers in the Midwestern United States and Co-Prevalence of Associated Social and Structural Determinants of Health  
*Mentor*: Martha Carvour, Internal Medicine

**Cole Pennock, M3, Poster Presentation, on WEDNESDAY #51**

*Title*: Incidence and Risk Factors for Contralateral Patellofemoral Instability  
*Mentor*: Robert Westermann, Orthopaedics and Rehabilitation

**Maiti Peters, M2, Poster Presentation, on THURSDAY #12**

*Title*: Knowledge, attitudes, and practices regarding malaria in women of the Orang Rimba  
*Mentor*: Elissa Faro, Internal Medicine
Student {Poster} Presentations

Spencer Peterson, M2, Poster Presentation, on THURSDAY #48
  Title: Exploring Early Life Experiences as Predictors of Addiction in Mothers
  Mentor: Lane Strathearn, Pediatrics

Zachary Rinke, M2, Poster Presentation, on WEDNESDAY #69
  Title: Nanoparticles as Immune Enhancing Agents for Melanoma Vaccines
  Mentor: Aliasger Salem, Pharmacy

Josh Russell, M2, Poster Presentation, on WEDNESDAY #11
  Title: Characterization of paravalvular leak in surgically placed aortic valves
  Mentor: Arun Singhal, Cardiothoracic Surgery

Arshaq Saleem, M2, Poster Presentation, on WEDNESDAY #45
  Title: Radiomic Characterization of Brain Aneurysms
  Mentor: Edgar Samaniego, Neurology

Vaughan Schwob, M2, Poster Presentation, on THURSDAY #54
  Title: Predictors of later diagnosis in autistic females
  Mentor: Jacob Michaelson, Psychiatry

Aravin Sivamurugan, M3, Poster Presentation, on WEDNESDAY #7
  Title: Total Spinal Anesthesia in Pediatric Cardiac Surgery: Effects on Postoperative Pain and Opioid Utilization - A Propensity Matched Investigation
  Mentor: Satoshi Hanada, Anesthesia

Jacqueline Smart, M4, Poster Presentation, on WEDNESDAY #23
  Title: Characterization of Melanoma Referrals to UIHC and Impact on Patient Outcomes
  Mentor: Jennifer Powers, Dermatology

Sadie Solomon, M2G, Poster Presentation, on WEDNESDAY #39
  Title: Acceptable susceptibility thresholds reported in hospital antibiograms for Gram-negative rod infections: a survey and contingent valuation study of infectious diseases specialists
  Mentor: Eli Perencevich, Internal Medicine

Haley Steffen, M4, Poster Presentation, on THURSDAY #74
  Title: BMI at delivery and associated maternal and neonatal outcomes
  Mentor: Brooks Jackson, Pathology
Student {Poster} Presentations

Ervina Tabakovic, M2, Poster Presentation, on WEDNESDAY #47
  Title: Role of mediodorsal thalamic projections in temporal processing
  Mentor: Nandakumar Narayanan, Neurology

Johanna Theeler, M1, Poster Presentation, on THURSDAY #56
  Title: Cognitive Function in Long COVID and its Relationship with Lung Pathophysiology
  Mentor: Karin Hoth, Psychiatry

Eric Vallin, M2, Poster Presentation, on WEDNESDAY #59
  Title: Similarities of FOXP2 Expression in the Brainstem of Rodents, Rhesus Monkeys, and Humans
  Mentor: Matthew Hoffman, Otolaryngology

Steven Van Meeteren, M2, Poster Presentation, on WEDNESDAY #61
  Title: Understanding the Role of EMT in Local Recurrence in Oral Cavity Squamous Cell Carcinoma
  Mentor: Marisa Buchakjian, Otolaryngology - Head & Neck Surgery

Lena Volfson, M2, Poster Presentation, on WEDNESDAY #53
  Title: Ultrasonic Fasciotomy for the Treatment of Refractory Plantar Fasciopathy- A Prospective Study
  Mentor: Ryan Kruse, Orthopaedics and Rehabilitation

Katie Weston, M2, Poster Presentation, on THURSDAY #18
  Title: Comparison of Surgical Success Between Novel Prolapse Phenotypes
  Mentor: Joseph Kowalski, Obstetrics & Gynecology

Lydia Yang, M3, Poster Presentation, on WEDNESDAY #41
  Title: Recognizing Rural Healthcare Disparities in Pain Assessment for Autoimmune Rheumatologic Diseases
  Mentor: Bharat Kumar, Internal Medicine

Richie Zhang, M2, Poster Presentation, on WEDNESDAY #49
  Title: A neural pathway for auditory stress
  Mentor: Joel Geerling, Neurology
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