



MEDICAL STUDENT RESEARCH SYMPOSIUM

MARCH 28, 2025
NOON to 5 P.M.

VTC

Virginia Tech Carilion
School of Medicine

MEDICAL STUDENT RESEARCH SYMPOSIUM AGENDA

12-12:50 P.M.

POSTER PRESENTATIONS (even numbers)
(RIVERSIDE 4, G101)

1-1:20 P.M.

WELCOME
RESEARCH MENTOR AWARD PRESENTATION
(RIVERSIDE 2, M203)



2025 Recipients

John Epling, M.D., M.S.Ed. Michelle Rockwell, Ph.D.

1:20-2:20 P.M.

ORAL PRESENTATIONS (M203)

Reduction in Potentially Harmful Regular Over-the-Counter NSAID Use via a Novel Brief Patient-facing Educational Video

Student: Matthew Vinson

Mentors: Michelle Rockwell, Ph.D.; John Epling, M.D., M.S.Ed.

Characterization of Macrophage and Smooth Muscle Cell Communication in Neointima Formation

Student: Farwah Iqbal, Ph.D.

Mentor: Scott Johnstone, Ph.D.

Characterizing the Expansion of Tumor-Associated Antigen T-Cells for Next Generation T-Cell Immunotherapy Targeting Pediatric Solid Tumors

Student: Monica Gerber, M.S.

Mentors: Catherine Bollard, MBChB, M.D.; Amy Hont, M.D.; Holly Meany, M.D.

Modifications to the Geriatric Nutritional Risk Index Predicts Complications after Total Joint Arthroplasty

Student: Brian Hansen

Mentors: John Sloboda, M.D.; Peter Apel, M.D., Ph.D.

Characterization of the Tumor Microenvironment in Diffuse Midline Glioma for 3D in Vitro Model Building

Student: Sarah Kremer

Mentor: Jennifer Munson, Ph.D.

Neural Functional Connectivity Across the First Year: Using EEG Coherence and Task Behaviors to Examine Rudimentary Neural Networks

Student: Alana Hull

Mentor: Martha Ann Bell, Ph.D.

MEDICAL STUDENT RESEARCH SYMPOSIUM AGENDA

2:30-3:20 P.M.

**POSTER PRESENTATIONS (odd numbers)
(RIVERSIDE 4, G101)**

3:30-4:30 P.M.

ORAL PRESENTATIONS (RIVERSIDE 2, M203)

The Effect of a Mindset Management Intervention on Stress Levels in Women with Infertility

Student: Mia Edelson

Mentor: Emily Evans-Hoeker, M.D.

Targeting the Extracellular cAMP Pathway in Idiopathic Pulmonary Fibrosis

Student: Michael Klingener, Ph.D.

Mentor: Yassine Sassi, Ph.D.

Small Bite Fascial Closure Technique Reduces Fascial Dehiscence in Patients with Laparotomy Incision

Student: James Kwok

Mentor: Jacob Gillen, M.D.

Understanding Family-Level Decision-Making in Pediatric Surgical Care: Preliminary Results from a Mixed Methods Study

Student: Bria Hall

Mentors: Henry E. Rice, M.D.; Brian Meier, M.D.; Cara Spivey, M.S.

Catheter-Based Medical Device Biofilm Ablation Using Histotripsy

Student: Ryan Morse

Mentors: Eli Vlasisavljevich, Ph.D.; Jayasimha Rao, Ph.D.

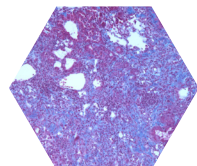
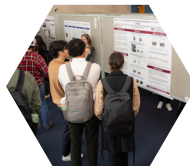
Vascular-Immune Biomarkers for Traumatic Brain Injury

Student: Liliana Ladner

Mentors: Michelle Theus, Ph.D.; Eric Marvin, D.O.

4:30-5 P.M.

AWARDS AND CLOSING (M203)



RESEARCH PROJECTS

| POSTER # | STUDENT | MENTOR(S) | RESEARCH TITLE |
|----------|---------------------|--|---|
| 1 | Lucas Arney | John Tuttle, M.D. | <i>Blood Flow Restriction Therapy Following Medial Patellofemoral Ligament Reconstruction: A Randomized Controlled Trial</i> |
| 2 | Courtney Barth | Adegbenga Bankole, M.D. | <i>Evaluation of Hematologic Values as Potential Indicators and Predictors of Disease Activity and Health-related Quality of Life in Systemic Lupus Erythematosus Treatment</i> |
| 3 | Randall Bisette | Peter Apel, M.D., Ph.D. | <i>Patient-Directed Care after Carpal Tunnel Release using Video Integration and Digital Education after Operations (VIDEO Trial)</i> |
| 4 | Julia De Luca | James Casey, M.D. | <i>Cannabidiol Therapy Efficacy for the Treatment of Chronic Pelvic Pain</i> |
| 5 | Sachi Dholakia | Isaiah Johnson, M.D.; Sarah Evans, M.D.; Cara Spivey, M.S. | <i>Evaluating an App-based Mindfulness Intervention in the Treatment of Interstitial Cystitis/Bladder Pain Syndrome</i> |
| 6 | Mia Edelson | Emily Evans-Hoeker, M.D. | <i>The Effect of a Mindset Management Intervention on Stress Levels in Women with Infertility</i> |
| 7 | Areej Ennasr | Wynn Legon, Ph.D. | <i>Examination of Low-intensity Focused Ultrasound Parameters for Human Neuromodulation</i> |
| 8 | Shay Fahey | Trevor Owen, M.D.; Andrew Kemper, Ph.D. | <i>Biomechanical Evaluation of Calcar Collar on Periprosthetic Femoral Fracture in Cementless Total Hip Arthroplasty</i> |
| 9 | Monica Gerber, M.S. | Catherine Bollard, M.B.Ch.B., M.D.; Amy Hont, M.D. Holly Meany, M.D. | <i>Characterizing the Expansion of Tumor-Associated Antigen T-Cells for Next Generation T-Cell Immunotherapy Targeting Pediatric Solid Tumors</i> |
| 10 | Jacob Grondin | Deirdre Rea, D.N.P.; Anita Kablinger, M.D.; Cara Spivey, M.S. | <i>Addressing Asynchronous Communication in the Collaborative Care of Emergency Psychiatry</i> |
| 11 | Bria Hall | Henry E. Rice, M.D.; Brian Meier, M.D.; Cara Spivey, M.S. | <i>Understanding Family-Level Decision-Making in Pediatric Surgical Care: Preliminary Results from a Mixed Methods Study</i> |

RESEARCH PROJECTS

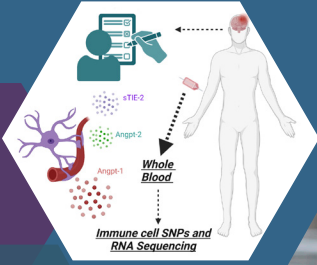
| POSTER # | STUDENT | MENTOR(S) | RESEARCH TITLE |
|----------|----------------------------|---|--|
| 12 | Brian Hansen | John Sloboda, M.D.; Peter Apel, M.D., Ph.D. | <i>Modifications to the Geriatric Nutritional Risk Index Predicts Complications after Total Joint Arthroplasty</i> |
| 13 | Alice Holmquist | Anita Register, D.O.; Vishal Patel, M.D.; Cara Spivey, M.S. | <i>Gender Non-Conforming Adults: The Effects of Feminizing/ Masculinizing Hormone Therapy on Depression and Anxiety</i> |
| 14 | Alana Hull | Martha Ann Bell, Ph.D. | <i>Neural Functional Connectivity Across the First Year: Using EEG Coherence and Task Behaviors to Examine Rudimentary Neural Networks</i> |
| 15 | Farwah Iqbal, Ph.D. | Scott Johnstone, Ph.D. | <i>Characterization of Macrophage and Smooth Muscle Cell Communication in Neointima Formation</i> |
| 16 | Adam Jacobowitz | Sarah Parker, Ph.D.; Justin Price, M.D. | <i>Evaluation of a Sepsis Prediction Model Implemented for Hospitalized Patients</i> |
| 17 | Navin Jayaswal | Allison Tegge, Ph.D. | <i>Unraveling Tumor Progression in Breast Cancer: The Impact of Differential DNA Methylation</i> |
| 18 | Michael Klingener, Ph.D. | Yassine Sassi, Ph.D. | <i>Targeting the Extracellular cAMP Pathway in Idiopathic Pulmonary Fibrosis</i> |
| 19 | Merly Konathapally, M.P.H. | Sarah Parker, Ph.D.; Mariana Gomez, M.D. | <i>Evaluation of Community-based Interventions to Establish Linkage-to-Care Among Patients with HCV Infection</i> |
| 20 | Sarah Kremer | Jennifer Munson, Ph.D. | <i>Characterization of the Tumor Microenvironment in Diffuse Midline Glioma for 3D In Vitro Model Building</i> |
| 21 | James Kwok | Jacob Gillen, M.D. | <i>Small Bite Fascial Closure Technique Reduces Fascial Dehiscence in Patients with Laparotomy Incision</i> |
| 22 | Liliana Ladner | Michelle Theus, Ph.D.; Eric Marvin, D.O. | <i>Vascular-Immune Biomarkers for Traumatic Brain Injury</i> |

RESEARCH PROJECTS

| POSTER # | STUDENT | MENTOR(S) | RESEARCH TITLE |
|----------|-----------------------|---|---|
| 23 | Chloe Lessard, M.P.H. | John Chappell, Ph.D.; Kim Simcox, D.O.; Cara Spivey, M.S. | <i>Vascular Changes in the Placentas of Opioid Exposed Pregnancies</i> |
| 24 | Paula Lewis | Emily Faulks, M.D.; Cara Spivey, M.S. | <i>Defining Ultrasound Proficiency in Graduate Surgical Education</i> |
| 25 | Yifan Li, M.S. | Anita Kablinger, M.D. | <i>Intramuscular Ketamine for Treatment-Resistant Depression: Assessing Acute and Long-term Antidepressant Effects, Maintenance Style, and Impact on Sleep and Mood: A Retrospective Descriptive Cohort Study</i> |
| 26 | Han Ool Lim, M.S. | Daniel Lollar, M.D. | <i>Universal Screening of Blunt Cerebrovascular Injury in High-Energy Transfer Mechanism Patients</i> |
| 27 | Connor Madalo | Jessica Pflieger, Ph.D. | <i>Insulin Controls the Cardiac Circadian Clock via Induction of ChIP-derived Repressor of Network Oscillator</i> |
| 28 | Christine Marlow | Samy Lamouille, Ph.D. | <i>Molecular Mechanisms of BMP-Induced Dormancy in Glioblastoma Stem Cells</i> |
| 29 | Brook Mitchell | Jonathan Carmouche, M.D., MBA | <i>Association Between Magnetization Transfer Ratio and other Measures Predictive of Clinical Outcomes in Cervical Spondylotic Myelopathy</i> |
| 30 | Ryan Morse | Eli Vlaisavljevich, Ph.D.; Jayasimha Rao, Ph.D. | <i>Catheter-Based Medical Device Biofilm Ablation Using Histotripsy</i> |
| 31 | Sankar Muthukumar | Mark Witcher, M.D., Ph.D. | <i>PET-Based Imaging of High-Grade Gliomas using Off-label PET Radiotracers</i> |
| 32 | Ethan Nethery | Eli Vlaisavljevich, Ph.D.; Jennifer Munson, Ph.D. | <i>Focused Ultrasound and ONC201 Combination Therapy in 3D Tissue-Engineered Models of Diffuse Intrinsic Pontine Glioma</i> |
| 33 | Gemma Porras Nielsen | Alasdair Cohen, Ph.D.; Rachel Silverman, Ph.D. | <i>Adverse Birth Outcomes and Drinking Water Quality: A Retrospective Analysis Using West Virginia Medicaid Data</i> |

RESEARCH PROJECTS

| POSTER # | STUDENT | MENTOR(S) | RESEARCH TITLE |
|----------|--------------------|---|---|
| 34 | Grace Rovenolt | Damon Kuehl, M.D. | <i>Acute Decompensated Heart Failure Home Observation, Monitoring, and Evaluation Trial (ADHF-HOME): Improving Outcomes of Emergency Department Patients Using Disposable Wearable Monitoring Devices</i> |
| 35 | Evan Sandefur | Peter Apel, M.D., Ph.D. | <i>Post-Operative Outcomes of In-Office Wide Awake Local Anesthetic No Tourniquet Carpal Tunnel Release</i> |
| 36 | Tyler Shick | Justin Weppner, D.O. | <i>Randomized Controlled Trial: Preliminary Investigation of the Impact of High-Intensity Treadmill Gait Training on Recovery among Persons with Traumatic Brain Injury</i> |
| 37 | Alexandra Toloczko | Andre Muelenaer, M.D.; John Robertson, VM.D., Ph.D. | <i>A Low-Cost Simulation Model for Hemodialysis AV Access Training</i> |
| 38 | Raymond Uymatiao | Anita Kablinger, M.D.; Cara Spivey, M.S. | <i>A Cohort Study on the Effectiveness of a Care Coordinator-led Contraceptive Education Program in Patients Undergoing Medication Assisted Therapy for Opioid use Disorder</i> |
| 39 | Paul Varghese | Romulo Albuquerque, M.D., Ph.D.; Vishak John, M.D. | <i>The Role of Loteprednol in Reducing Post-Intravitreal Injection Related Pain</i> |
| 40 | Matthew Vinson | Michelle Rockwell, Ph.D.; John Epling, M.D., M.S.Ed. | <i>Reduction in Potentially Harmful Regular Over-the-Counter NSAID Use via a Novel Brief Patient-facing Educational Video</i> |
| 41 | Nancy Wu | John Epling, M.D., M.S.Ed.; Michelle Rockwell, Ph.D. | <i>Implementation Evaluation of a Community Health Worker Program for Patients with Type 2 Diabetes or Hypertension</i> |
| 42 | Eileen Xu | Zhi Sheng, Ph.D. | <i>Co-Targeting CK1epsilon and PIK3CB/p110B as a Therapeutic Approach for Glioblastoma</i> |
| 43 | Mosufa Zainab | Peter Apel, M.D., Ph.D. | <i>Home Management of Pediatric Buckle Fractures: Can Video Education Replace In-Person Visits?</i> |



LETTERS OF DISTINCTION FOR RESEARCH SCHOLARSHIP

Criteria for Selection: Letters of Distinction for Research Scholarship are selected based upon the overall quality, significance, relevance, innovation, and clarity (written and oral presentation) of the students' findings.

Cover images depict select Class of 2025 students and their research projects.

2025 RECIPIENTS

Mia Edelson
 Monica Gerber, M.S.
 Bria Hall
 Brian Hansen
 Alana Hull
 Farwah Iqbal, Ph.D.
 Michael Klingener, Ph.D.
 Sarah Kremer
 James Kwok
 Liliana Ladner
 Ryan Morse
 Matthew Vinson

VTC | Virginia Tech Carilion
 School of Medicine