



# MEDICAL STUDENT RESEARCH SYMPOSIUM

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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.

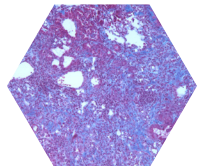
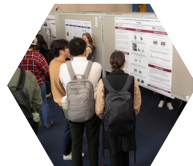
*Vascular-Immune Biomarkers for Traumatic Brain Injury*

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 Bissette	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>

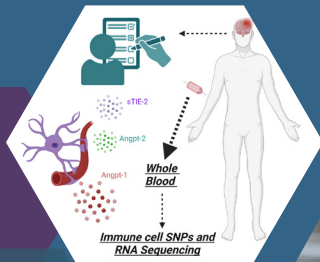
## RESEARCH PROJECTS

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.

### 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

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