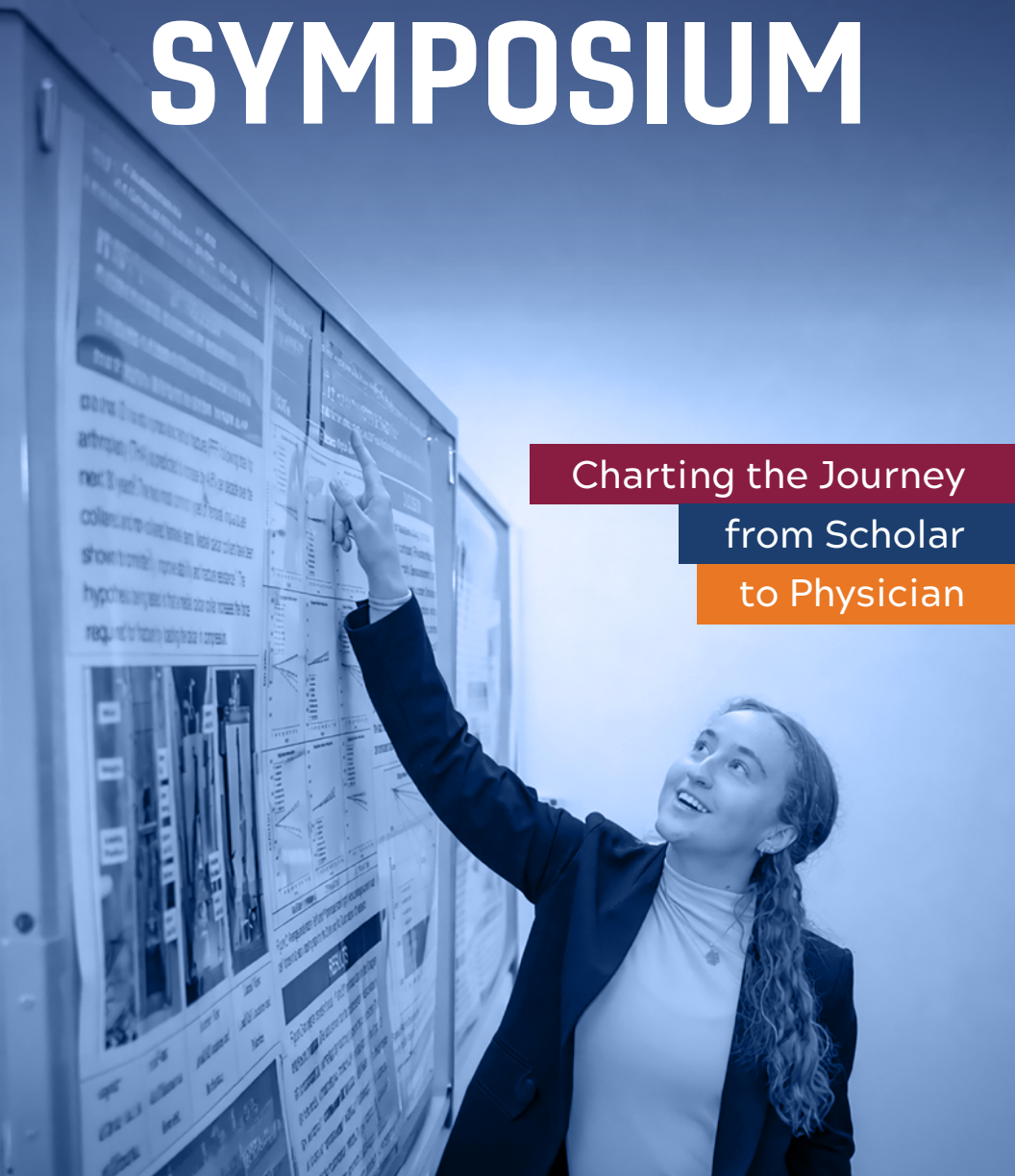


Class of 2026

# RESEARCH SYMPOSIUM

Charting the Journey  
from Scholar  
to Physician



# Program Schedule

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Noon-12:50 p.m.

Poster session 1  
G101AB / G102A

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1:00-1:10 p.m.

Welcome

1:10-1:30 p.m.

Research Mentor of the Year Award  
Eli Vlasisavljevich, Ph.D.  
M203

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1:30-2:30 p.m.

Oral presentations

M203

**Effects of Macronutrients and Food Processing on Mediobasal Hypothalamic Inflammation**

Student: Lillian Brouwer

Mentor: Alexandra DiFeliceantonio, Ph.D.

**Impact of Direct Lateral Interbody Fusion on Functional Performance and Patient-Reported Outcomes**

Student: Zachary Johnson

Mentors: Jonathan J. Carmouche, M.D., MBA,

Robin Queen, Ph.D.

**Broad Host Range Peptide Nucleic Acids Prevent Gram-Negative Biofilms Implicated in Catheter-Associated Urinary Tract Infections**

Student: Hannah Karp

Mentors: Jayasimha Rao, Ph.D., Elizabeth Nowak, M.D.

**Biomarkers for Pial Collateral Circulation in Endovascularly Treated Ischemic Stroke**

Student: Collin Tanchanco

Mentors: Michelle Theus, Ph.D., Biraj Patel, M.D.

# Program Schedule

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2:30-3:20 p.m.

Poster session 2  
G101AB / G102A

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3:30-4:30 p.m.

Oral presentations

M203

**Clinical Evaluation of a Device to Treat Upper Extremity Lymphedema**

Student: Evgeniya Molotkova

Mentor: Andre A. Muelenaer, Jr., M.D., MS

**Stabilizing Milk-Derived Extracellular Vesicles (mEVs) through Lyophilization: A Novel Trehalose and Tryptophan Formulation for Maintaining Structure and Bioactivity during Long-Term Storage**

Student: Alan Dogan

Mentor: Robert G. Gourdie, Ph.D.

**Neurotransmitter Fluctuations in the Awake, Conscious Human Brain During a Psychomotor Vigilance Task**

Student: Janeline Wong

Mentor: Read Montague Ph.D., Seth Batton, Ph.D.

**The Effects of Cardiac Monitoring on Perceived Stress in Unexplained Syncope**

Student: Carter Gottschalk

Mentor: Andrew Moore, M.D.

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4:30-5:00 p.m.

Awards and closing

Defining Tomorrow's

MEDICINE

Through Today's

DISCOVERIES










Class of 2026

# 2026 Student Research Projects

Student	Mentor(s)	Project
<p><b>1</b></p> <p><b>Rishitha Anumola</b></p> 	<p>Brittany Howell, Ph.D.</p>	<p>Identifying Differences in Brain Development in Human Milk-fed and Formula-fed Infants Using Longitudinal Tensor-based Morphometry (TBM) Analysis</p>
<p><b>2</b></p> <p><b>Caroline Beaks</b></p> 	<p>Paul Stromberg, M.D.</p>	<p>Investigating the Impact of ED Naloxone Prescription and Distribution on Opioid Overdose Mortality</p>
<p><b>3</b></p> <p><b>Lillian Brouwer</b></p> 	<p>Alexandra DiFeliceantonio, Ph.D.</p>	<p>Effects of Macronutrients and Food Processing on Mediobasal Hypothalamic Inflammation</p>
<p><b>4</b></p> <p><b>Grace Casado</b></p> 	<p>Jeff Stein, Ph.D.</p>	<p>Increasing Readiness for Colorectal Cancer Screening: A Preliminary Study on a Novel Episodic Future Thinking Intervention</p>
<p><b>5</b></p> <p><b>Brianna Chang</b></p> 	<p>John Epling, Jr. M.D., MEd</p> <p>Michelle Rockwell, Ph.D.</p>	<p>Evaluating the Interaction Between Sludge and Multiple Chronic Conditions on Overall Treatment Burden and Uptake of Colorectal Cancer Screening</p>
<p><b>6</b></p> <p><b>Sabri Conde-Yassin</b></p> 	<p>Bryan Collier, D.O.</p>	<p>Buprenorphine Analgesia on Opioid Burden and Clinical Outcomes in Trauma</p>

numbers denote student poster order

# 2026 Student Research Projects

Student	Mentor(s)	Project
<p><b>7</b></p> <p><b>Sydney Dinn</b></p> 	<p>Daniel B. Rukstalis, M.D.</p> <p>Chris Bayne, M.D.</p>	<p>Buprenorphine and TIVA in an Ambulatory Surgical Setting</p>
<p><b>8</b></p> <p><b>Alan Dogan</b></p> 	<p>Robert G. Gourdie, Ph.D.</p>	<p>Stabilizing Milk-Derived Extracellular Vesicles (mEVs) through Lyophilization: A Novel Trehalose and Tryptophan Formulation for Maintaining Structure and Bioactivity During Long-Term Storage</p>
<p><b>9</b></p> <p><b>Alexis Dowiak</b></p> 	<p>Adriana Fonseca, M.D.</p>	<p>Infantile Hemispheric Gliomas with Embryonal Features (IHG-EMB): A Novel Tumor Type in Young Infants</p>
<p><b>10</b></p> <p><b>Yavuz Durmaz</b></p> 	<p>Sujith Vijayan, Ph.D.</p>	<p>The Role of Local Spindles in Memory Consolidation</p>
<p><b>11</b></p> <p><b>Elizabeth Gienger</b></p> 	<p>Arthur Ollendorff, M.D.</p>	<p>Screening Social Determinants of Health in Maternal Care: Addressing Community Needs</p>

# 2026 Student Research Projects





Student	Mentor(s)	Project
<b>12</b> <b>Elizabeth Gilliam</b> 	Mary Wesley, Ph.D.  Isaiah M. Johnson, M.D.	Evaluating Mental Health Literacy to Improve Perinatal Healthcare
<b>13</b> <b>Haseeb Goheer</b> 	Jonathan J. Carmouche, M.D., MBA	Autologous Bone Graft Obtained from the Iliac Crest and Cervical Vertebrae of the Same Patient Exhibit Similar Molecular and Structural Characteristics
<b>14</b> <b>Kelly Gordon</b> 	Garret Burks, Ph.D.  Jesse Seamon, M.D.	Does Mechanism of Injury Predict Postoperative Outcomes for Patellar Fractures?
<b>15</b> <b>Carter Gottschalk</b> 	Andrew Moore, M.D.	The Effects of Cardiac Monitoring on Perceived Stress in Unexplained Syncope
<b>16</b> <b>Maedot Haymete</b> 	Eli Vlavisavljevich, Ph.D.	Investigation of Histotripsy for the Precise, Non-Invasive, Non-Thermal Ablation of Keloid Scars
<b>17</b> <b>Lucy Honeycutt</b> 	Andrew Moore, M.D.	Predicting ED Syncope Outcomes: Correlating Mobile Cardiac Outpatient Telemetry Arrhythmias with FAINT and CSRS

numbers denote student poster order

# 2026 Student Research Projects







Student	Mentor(s)	Project
<p>18</p> <p><b>Justin Howe</b></p> 	<p>Eli Vlasisavljevich, Ph.D.</p> <p>Jayasimha Rao, Ph.D.</p>	<p>Histotripsy Treatment of Biofilms on Orthopedic Implants: In Vitro Feasibility Study using Cobalt-Chrome and Titanium Surgical Implant Material</p>
<p>19</p> <p><b>Alexander In</b></p> 	<p>Wynn Legon, Ph.D.</p> <p>Elizabeth Stringer, M.D.</p>	<p>Low-Intensity Focused Ultrasound to the Insula and Dorsal Anterior Cingulate has Site-Specific and Pressure Dependent Effects on Pain During Measures of Central Sensitization</p>
<p>20</p> <p><b>Adriana Irizarry</b></p> 	<p>Megan Whitham, M.D.</p>	<p>Single- versus Multiple Layer Hysterotomy Closure and Risk of Placenta Accreta Spectrum in Subsequent Pregnancy: A Matched Case-Control Pilot Study</p>
<p>21</p> <p><b>Zachary Johnson</b></p> 	<p>Jonathan J. Carmouche, M.D., MBA</p> <p>Robin M. Queen, Ph.D.</p>	<p>Impact of Direct Lateral Interbody Fusion on Functional Performance and Patient-Reported Outcomes</p>
<p>22</p> <p><b>Hannah Karp</b></p> 	<p>Jayasimha Rao, Ph.D.</p> <p>Elizabeth Nowak, M.D.</p>	<p>Broad Host Range Peptide Nucleic Acids Prevent Gram-Negative Biofilms Implicated in Catheter-Associated Urinary Tract Infections</p>
<p>23</p> <p><b>Lincoln Kartchner</b></p> 	<p>Jennifer Munson, Ph.D.</p>	<p>Elucidating Correlations Between Astrocytes and Interstitial Fluid Flow in the Glioblastoma Tumor Microenvironment</p>

# 2026 Student Research Projects







Student	Mentor(s)	Project
<p>24 <b>Uma Kelavkar</b></p> 	<p>Adam Goode, M.D.</p> <p>Farrell C. Adkins, M.D.</p>	<p>3D Printed Personalized Ostomy Appliance</p>
<p>25 <b>Parsa Khaksar</b></p> 	<p>Michael Fox, Ph.D.</p> <p>Katelyn Stebbins, Ph.D.</p>	<p>Non-Retinal Derived Sonic Hedgehog is Required for the Maintenance of Prethalamal Cytoarchitecture</p>
<p>26 <b>Priyenka Khatiwada</b></p> 	<p>Zachary Holcomb M.D.</p> <p>Apostolos Dallas, M.D.</p>	<p>Impact of Structured Dermatologic Ultrasound Training on Medical Student Diagnostic Competency</p>
<p>27 <b>Katie Lee</b></p> 	<p>Steven Poelzing, Ph.D.</p>	<p>Correlation between Postoperative Atrial Fibrillation Rates and Priming Fluid Composition in Cardiothoracic Surgery Patients with Mildly Reduced Ejection Fraction</p>
<p>28 <b>Charles LeNeave</b></p> 	<p>Brian Meier, M.D.</p>	<p>Pilot Study: Impact of Primary Spoken Language as a Social Determinant of Health on CPR Education and Utilization</p>
<p>29 <b>Marina Levochkina</b></p> 	<p>Chris Grubb, Ph.D.</p>	<p>Multi-State Modeling of Acute Kidney Injury Trajectories and Renal Replacement Therapy Initiation in Septic Shock: The Role of Vasopressin</p>

numbers denote student poster order

## 2026 Student Research Projects







Student	Mentor(s)	Project
<p>30</p> <p><b>Roger Luong</b></p> 	Anita Kablinger, M.D.	Pilot Trial of Theta Burst Transcranial Magnetic Stimulation for the Treatment of Methamphetamine Use Disorder
<p>31</p> <p><b>Varun Mishra</b></p> 	Justin Weppner, D.O.	Low Insulin-like Growth Factor 1 After Traumatic Brain Injury: Interpretation and Implications
<p>32</p> <p><b>Evgeniya Molotkova</b></p> 	Andre A. Muelenaer, Jr., M.D., MS	Clinical Evaluation of a Device to Treat Upper Extremity Lymphedema
<p>33</p> <p><b>Sofia Montes</b></p> 	Emily Evans-Hoeker, M.D.	Improving Care for Patients with Polycystic Ovary Syndrome (PCOS)
<p>34</p> <p><b>Snigdha Nandipati</b></p> 	Jeff Stein, Ph.D.	Remotely Delivered Episodic Thinking: A Preliminary Investigation of Generalized and Health-Oriented Content for Behavioral Modification in Type 2 Diabetes Prevention
<p>35</p> <p><b>David Ogburn</b></p> 	Irving C. Allen, Ph.D.	High-Frequency Irreversible Electroporation (H-FIRE) Treatment of Cancer Alters Extracellular Vesicle Load to Induce Immune System Modulation

# 2026 Student Research Projects

Student	Mentor(s)	Project
<b>36</b> <b>Christian Ostrowski</b> 	Jacob Gillen, M.D.  Anthony Baffoe- Bonnie, M.D.	Improving Urine Testing Stewardship with a Technology-Leveraged Urine Testing Guideline
<b>37</b> <b>Arthi Prabhakar</b> 	Wynn Legon, Ph.D.	Investigation of Low-Intensity Focused Ultrasound (LIFU) for Neuromodulation of Anxiety
<b>38</b> <b>Shruthi Prabhakar</b> 	Margaret Rukstalis, M.D.  Anita Kablinger, M.D.	Use of Opioid Risk Tool (ORT) to Predict Post-Cesarean Opioid Use Disorder
<b>39</b> <b>Marie Rhoads</b> 	Brian Meier, M.D.  Henry Rice, M.D.	Impact of Family Experiences on Acute Appendicitis Care in Children
<b>40</b> <b>Erin Saechin</b> 	Zhi Sheng, Ph.D.  Ben Brewer, Ph.D.	Data-Driven Discovery of Drug Candidates for PIK3CB-Dependent and -Independent Glioblastoma Subtypes
<b>41</b> <b>Juliet Suen</b> 	Eli Vlaisavljevich, Ph.D.  James N. Casey, M.D.	Exploring High-Rate Single-Cycle Histotripsy in the Treatment of Uterine Fibroids

numbers denote student poster order

## Research Projects

Student	Mentor(s)	Project
<p>42</p> <p><b>Alyssa Sze</b></p> 	<p>Joanne Tuohy, DVM, Ph.D.</p>	<p>Characterizing Changes in MRI Patterns of Canine and Murine Osteosarcoma Tumors Before and After Histotripsy Treatment</p>
<p>43</p> <p><b>Collin Tanchanco</b></p> 	<p>Michelle Theus, Ph.D.</p> <p>Biraj Patel, M.D.</p>	<p>Biomarkers for Pial Collateral Circulation in Endovascularly Treated Ischemic Stroke</p>
<p>44</p> <p><b>Thisha Thiagarajan</b></p> 	<p>Laura Sands, Ph.D.</p> <p>Jacqueline Leung, M.D.</p>	<p>The Association Between APOE Alleles and Postoperative Delirium in the Older Elective Surgery Population</p>
<p>45</p> <p><b>Jessica Urbanczyk</b></p> 	<p>Matthew Weston, Ph.D.</p>	<p>Pharmacological Inhibition of KNa1.1 Suppresses Spontaneous Seizures in a Model of KCNT1-Related Epilepsy</p>
<p>46</p> <p><b>Jacqueline (Q) Urdang</b></p> 	<p>Megan Whitham, M.D.</p>	<p>Text Phrase-Mining in Identifying and Classifying Maternal Proteins and Genes Across Preeclampsia and Similar Pathologies</p>
<p>47</p> <p><b>Katie Voegtlin</b></p> 	<p>Joanne Tuohy, DVM, Ph.D.</p>	<p>In-Vitro Investigation of Immune Cell Response to Histotripsy Ablated Osteosarcoma Cells</p>

# 2026 Student Research Projects

Student	Mentor(s)	Project
<p>47</p> <p><b>Dana Wang</b></p> 	<p>Eli Vlaisavljevich, Ph.D.</p> <p>Joanne Tuohy, DVM, Ph.D.</p>	<p>Histotripsy for the Treatment of Oral Tumors: A Canine Ex-Vivo Feasibility Study</p>
<p>48</p> <p><b>Abigail Waugh</b></p> 	<p>Eli Vlaisavljevich, Ph.D.</p> <p>James Casey, M.D.</p>	<p>Feasibility of Thermally-Enhanced Histotripsy for Ablation of Uterine Fibroids</p>
<p>49</p> <p><b>Bradley Weaver</b></p> 	<p>Ian Dempsey, M.D.</p>	<p>Identification of Risk Factors for Component Changes in 3D CT Pre-Operatively Planned RTSA Patients</p>
<p>50</p> <p><b>Janeline Wong</b></p> 	<p>Read Montague, Ph.D.</p> <p>Seth Batton, Ph.D.</p>	<p>Neurotransmitter Fluctuations in the Awake, Conscious Human Brain During a Psychomotor Vigilance Task</p>
<p>51</p> <p><b>Isaiah Yim</b></p> 	<p>Michelle Rockwell, Ph.D.</p> <p>John Epling, M.D.</p>	<p>Evaluating the Consequences of Switching from Long-Term Opioids to Long-Term NSAIDs in Patients with Chronic Kidney Disease</p>
<p>52</p> <p><b>Kenneth Young II</b></p> 	<p>James Smyth, Ph.D.</p> <p>Samy Lamouille, Ph.D.</p>	<p>Internally Translated Cx43 Isoform GJA1-20k Affects Epithelial to Mesenchymal Transition and Metastatic Breast Cancer Cell Behavior</p>

numbers denote student poster order

# Letters of Distinction

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## **Effects of Macronutrients and Food Processing on Mediobasal Hypothalamic Inflammation**

Student: Lillian Brouwer

Mentor: Alexandra DiFeliceantonio, Ph.D.

## **Stabilizing Milk-Derived Extracellular Vesicles (mEVs) through Lyophilization: A Novel Trehalose and Tryptophan Formulation for Maintaining Structure and Bioactivity During Long-Term Storage**

Student: Alan Dogan

Mentor: Robert G. Gourdie, Ph.D.

## **The Effects of Cardiac Monitoring on Perceived Stress in Unexplained Syncope**

Student: Carter Gottschalk

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## **Impact of Direct Lateral Interbody Fusion on Functional Performance and Patient-Reported Outcomes**

Student: Zachary Johnson

Mentors: Jonathan J. Carmouche, M.D., MBA, Robin M. Queen, Ph.D.

## **Broad Host Range Peptide Nucleic Acids Prevent Gram-Negative Biofilms Implicated in Catheter-Associated Urinary Tract Infections**

Student: Hannah Karp

Mentors: Jayasimha Rao, Ph.D., Elizabeth Nowak, M.D.

## **Competing Risk Analysis of Corticosteroid Usage in COVID-19 ICU Patients: An N3C Study**

Student: Marina Levochkina

Mentor: Chris Grubb, Ph.D.

## **Pilot Trial of Theta Burst Transcranial Magnetic Stimulation for the Treatment of Methamphetamine Use Disorder**

Student: Roger Luong

Mentor: Anita Kablinger, M.D.

## **Clinical Evaluation of a Device to Treat Upper Extremity Lymphedema**

Student: Evgeniya Molotkova

Mentor: Andre A. Muelenaer, Jr., M.D., MS

## **Biomarkers for Pial Collateral Circulation in Endovascularly Treated Ischemic Stroke**

Student: Collin Tanchanco

Mentors: Michelle Theus, Ph.D., Biraj Patel, M.D.

## **Histotripsy for the Treatment of Oral Tumors: A Canine Ex-Vivo Feasibility Study**

Student: Dana Wang

Mentors: Eli Vlaisavljevich, Ph.D., Joanne Tuohy, DVM, Ph.D.

## **Neurotransmitter Fluctuations in the Awake, Conscious Human Brain During a Psychomotor Vigilance Task**

Student: Janeline Wong

Mentor: Read Montague, Ph.D., Seth Batton, Ph.D.

## **Evaluating the Consequences of Switching from Long-Term Opioids to Long-Term NSAIDs in Patients with Chronic Kidney Disease**

Student: Isaiah Yim

Mentors: Michelle Rockwell, Ph.D., John Epling, M.D.

VTC | Virginia Tech Carilion  
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