



MEDICAL STUDENT RESEARCH SYMPOSIUM

MARCH 22, 2024
NOON to 5 P.M.

VTC
Virginia Tech Carilion
School of Medicine

MEDICAL STUDENT RESEARCH SYMPOSIUM

AGENDA

12-12:45 P.M.

POSTER PRESENTATIONS
(RIVERSIDE 4, G101)

12:55-1:15 P.M.

RESEARCH MENTOR AWARD PRESENTATION
(RIVERSIDE 2, M203)



2024 Recipient
Peter Apel, M.D., Ph.D.

1:15-1:55 P.M.

ORAL PRESENTATIONS (M203)

*Robust Source Localization of Neural Activity Using
Optically-Pumped Magnetometers*

Abhishek Bhutada

Mentors: Stephen LaConte, Ph.D.; Mark Witcher, M.D., Ph.D.

*Optimizing Trauma Triage: The Impact of Non-Physician,
Technology-Driven Selection of Alert Level on Rates of
Appropriate Trauma Triage*

Megan Knapp

Mentor: Jacob Gillen, M.D., M.H.C.D.S.

1:55-2:20 P.M.

RAPID FIRE ORAL PRESENTATIONS
(M203)

*Harnessing the Innate Immune Response for Potential
Malignant Melanoma Therapy*

Celine Marlin Andrews

Mentors: Kristin Eden, DVM, Ph.D.; Douglas Grider, M.D.

*Imaging in Cervical Spondylotic Myelopathy: An Analysis
of New MRI Modalities*

Liam Cleary

Mentors: Jonathan Carmouche, M.D.; Joseph Hughes, M.D.

*Defining Novel Inflammatory Pathways in Patients with
Eosinophilic Esophagitis and Inflammatory Bowel Disease*

Kacie Hoyt

Mentors: Irving Coy Allen, Ph.D.

MEDICAL STUDENT RESEARCH SYMPOSIUM AGENDA

2:30-3:20 P.M.

POSTER PRESENTATIONS (RIVERSIDE 4, G101)

3:30-4:10 P.M.

ORAL PRESENTATIONS (RIVERSIDE 2, M203)

High-Throughput Identification of Novel Modulators in Hybrid Epithelial-Mesenchymal Transition States

Daniel Purcell

Mentor: Samy Lamouille, Ph.D.

Impact of Obesity on the Perinatal Vaginal Environment and Bacterial Microbiome: Effects on Birth Outcomes

Kelly Ingram

Mentors: Brittany Howell, Ph.D.; Jaclyn Nunziato, M.D.

4:10-4:40 P.M.

RAPID FIRE ORAL PRESENTATIONS (M203)

Using Lung Ultrasound to Predict Clinical Outcomes in Chest Wall Trauma

Samantha Speroni

Mentors: Emily Faulks, M.D.; Bryan Collier, D.O.

A Double-Blind, Randomized, Pilot Study to Investigate the Thermosensitivity of a Topical Palmitated Formulation of Capsaicin

Casey Engel

Mentors: Joshua Eikenberg, M.D.; Zachary Holcomb, M.D.

Measuring Perfusion Differences In Healthy Control Participants Versus Participants With Sickle Cell Disease Using a Novel Bio-Heat Perfusion Sensor: A Pilot Study

Ilona Kitay

Mentors: Violet Borowicz, M.D.; Ali Roghani, M.D.; Joshua Morales, M.D.; Thomas Diller, Ph.D.; Jennifer Vaughn, M.D.

Assessing Fall Risk Using Margin of Stability in Patients with End Stage Ankle Arthritis and Following Unilateral Total Ankle Arthroplasty

Martin Barylak

Mentors: Robin Queen, Ph.D.; Sara Arena, Ph.D.

4:50-5 P.M.

AWARDS AND CLOSING (M203)

RESEARCH PROJECTS

POSTER #	STUDENT	MENTOR(S)	RESEARCH TITLE
1	Devra Asah	Konark Mukherjee, MBBS, Ph.D.; Paras Patel, Ph.D.; Leslie LaConte, Ph.D.	<i>Developing an Antibody Mimicking Molecule (AMM) Against Sars-Cov-2</i>
2	Martin Barylak	Robin Queen, Ph.D.; Sara Arena, Ph.D.	<i>Assessing Fall Risk Using Margin of Stability in Patients with End Stage Ankle Arthritis and Following Unilateral Total Ankle Arthroplasty</i>
3	Patrick Beck	Zhi Sheng, Ph.D.; Robin Varghese, Ph.D.	<i>Developing Novel Precision Medicine for Glioblastoma</i>
4	Jesse Bendetson	Anthony Baffoe-Bonnie, M.D.	<i>Examining the Impact of Diabetes on Covid-19 Outcomes</i>
5	Abhishek Bhutada	Stephen LaConte, Ph.D.; Mark Witcher, M.D., Ph.D.	<i>Robust Source Localization of Neural Activity using Optically-Pumped Magnetometers</i>
6	David Brooks	John Epling, M.D.	<i>Rescue Packs for COPD Exacerbation</i>
7	Lauren Canary	Quinton Nottingham, Ph.D.	<i>The Impact of a Central Appalachian Medical-Legal Partnership on Patient-Reported Health & Healthcare Utilization Practices</i>
8	Liam Cleary	Jonathan Carmouche, M.D.; Joseph Hughes, M.D.	<i>Imaging in Cervical Spondylotic Myelopathy: An Analysis of New MRI Modalities</i>
9	Patrick D'Onofrio	Read Montague, Ph.D.; Terry Lohrenz, Ph.D.	<i>Quantitative Behavioral Estimates Using the Ultimatum Game in Borderline Personality Disorder</i>
10	Stephen Dvorak	David Sane, M.D.	<i>Myocardial Function in Takotsubo Cardiomyopathy as Quantified by 2D Speckle Tracking Echocardiography</i>
11	Nneoma Edokobi	Brittany Howell, Ph.D.	<i>Human Milk Growth Factors and Hippocampal Growth During Infancy</i>

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12	Casey Engel	Joshua Eikenberg, M.D.; Zachary Holcomb, M.D.	<i>A Double-Blind, Randomized, Pilot Study to Investigate the Thermo-sensitivity of a Topical Palmitated Formulation of Capsaicin</i>
13	Carney Flinn	Anthony LaMantia, Ph.D.	<i>Mechanoreceptive/Nociceptive Balance is a Target in Perinatal Dysphagia Pathology</i>
14	Brandon Ganjineh	Samantha Harden, PhD; Shannon Armbruster, M.D.	<i>The Feasibility and Acceptability of FitEx for Endometrial Cancer Survivors: A Pilot Randomized Controlled Trial of General Exercise with or without Yoga</i>
15	Kristina Gueco	Timothy Fortuna, D.O.	<i>Synovial Fluid Lactate as an Early Diagnostic Tool for Septic Arthritis</i>
16	Stephanie Hamlin	Robin Queen, Ph.D.	<i>Gait Symmetry in Bilateral and Unilateral Total Ankle Arthroplasty Patients</i>
17	Megan Knapp	Jacob Gillen, M.D., M.H.C.D.S.	<i>Optimizing Trauma Triage: The Impact of Non-Physician, Technology-Driven Selection of Alert Level on Rates of Appropriate Trauma Triage</i>
18	Kacie Hoyt	Irving Coy Allen, Ph.D.	<i>Defining Novel Inflammatory Pathways in Patients with Eosinophilic Esophagitis and Inflammatory Bowel Disease</i>
19	Audrey Humphries	Brittany Howell, Ph.D.	<i>Histopathology of Placental Tissue after Chronic Opioid Exposure</i>
20	Kasen Hutchings	Zhi Sheng, Ph.D.	<i>Novel PI3K Inhibitor as a Glioblastoma Treatment</i>
21	Kelly Ingram	Brittany Howell, Ph.D.; Jaclyn Nunziato, M.D.	<i>Impact of Obesity on the Perinatal Vaginal Environment and Bacterial Microbiome: Effects on Birth Outcomes</i>
22	Aakash Jain	Sarah Parker, Ph.D.; Stephanie Tulk Jesso, Ph.D.; Justin Price, M.D.	<i>Evaluation of a Sepsis Prediction Model Implemented for Hospitalized Patients</i>

RESEARCH PROJECTS

POSTER #	STUDENT	MENTOR(S)	RESEARCH TITLE
23	Caroline Hyun Sue Kim	Anthony Baffoe-Bonnie, M.D.	<i>Is the Juice Worth The Squeeze: Ophthalmologic Examination for all Hospitalized Patients with Candidemia in Southwest Virginia</i>
24	Ilona Kitay	Violet Borowicz, M.D.; Ali Roghani, M.D.; Joshua Morales, M.D.; Thomas Diller, Ph.D.; Jennifer Vaughn, M.D.	<i>Measuring Perfusion Differences In Healthy Control Participants Versus Participants With Sickle Cell Disease Using a Novel Bio-Heat Perfusion Sensor: A Pilot Study</i>
25	Catherine Lavalée	Brittany Howell, Ph.D.	<i>Interleukin-6 in Human Milk Across Lactation: Impacts on White Matter Development in Infancy</i>
26	Melissa Leaf, DVM	Scott Johnstone, Ph.D.	<i>Macrophages Stimulate Vascular Smooth Muscle Proliferation</i>
27	Celine Marlin Andrews	Kristin Eden, DVM, Ph.D.; Douglas Grider, M.D.	<i>Harnessing the Innate Immune Response for Potential Malignant Melanoma Therapy</i>
28	Caroline Mebane	Wendy Chung, M.D., Ph.D.; Anthony LaMantia, Ph.D.	<i>Evolution of Clinical Phenotype in Kif1A-associated Neurological Disorder</i>
29	Vemmy Metsutnan	Osa Emohare, M.D., Ph.D.	<i>Evaluation of Bone Density Using CT Attenuation in Kyphoplasty Patients after Compression Fractures</i>
30	Mary Milam	Sora Shin, Ph.D.; In-Jee You, Ph.D.	<i>Dissecting Neurocircuitry Underlying Self-Destructive Behaviors after Early Life Trauma</i>
31	Alex Miner	Harald Sontheimer, Ph.D.	<i>Modulation of the P53-Sxc-Gluthathione Axis as a Therapeutic Tool in Glioblastoma</i>
32	Douglas Murray	Kristin Eden, DVM, Ph.D.; Douglas Grider, M.D.	<i>Biomaterial-Induced Stimulation of the Innate Immune System as a Potential Melanoma Therapy</i>
33	Riya Patel	Mariana Phillips, M.D.; Joshua Eikenberg, M.D.	<i>Combination Topical 5-Fluorouracil 5%/Calcipotriene 0.005% Cream for the Treatment of Cutaneous In Situ Squamous Cell Carcinoma: A Study of Efficacy and Risks</i>

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POSTER #	STUDENT	MENTOR(S)	RESEARCH TITLE
34	Daniel Purcell	Samy Lamouille, Ph.D.	<i>High-Throughput Identification of Novel Modulators in Hybrid Epithelial-Mesenchymal Transition States</i>
35	Erika Robertson	Phyllis Whitehead, C.N.S, Ph.D.; Brian Unwin, M.D.	<i>Assessing the Effects of VitalTalk Training Intervention on Medical Student Perspectives on Participation in End-of-Life Care</i>
36	Abigail Ruffle	Bonnie Hennig-Trestman, D.S.W.; Anita Kablinger, M.D.; Robert Trestman, M.D., Ph.D.	<i>Patient and Caregiver Needs and Quality of Life in Huntington's Disease</i>
37	Atreyi Saha	Chad Ward, D.O.	<i>Acute Stress Disorder in Caregivers of Ventilated Pediatric Patients</i>
38	Abigail Simpson	Deirdre Rea, D.N.P.; Anita Kablinger, M.D.	<i>The Effect of Emergency Psychiatric Training in Residency for Emergency Medicine and Psychiatry Residents on Bias and Attitudes in Patients with Mental Illness</i>
39	Neha Singh	Eli Vlaisavljevich, Ph.D.	<i>Non-invasive Focused Ultrasound Ablation for the Treatment of Pancreatic Tumors</i>
40	Samantha Speroni	Emily Faulks, M.D.; Bryan Collier, D.O.	<i>Using Lung Ultrasound to Predict Clinical Outcomes in Chest Wall Trauma</i>
41	Miles Thomas	Charlotte Baker, Dr.P.H., M.P.H.	<i>Characterizing Access To P-Selector Inhibitor Therapy and Its Use in Patients with Sickle Cell Disease</i>
42	Benjamin Tintera	Irving Coy Allen, Ph.D.	<i>Enhancing Systemic Immunity Using Focal Tumor Ablation Strategies</i>
43	Nirali Trivedi	Alexei Morozov, Ph.D.	<i>Home Cage Behaviors Correlated with Synchronization of Fear in Mice</i>
44	Serina Williams	Kimberly Horn, M.S.W., Ed.D.	<i>Effect of Recovery Capital on Substance Use Disorder Treatment and Recovery</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 2024 students and their research projects.

2024 RECIPIENTS

Martin Barylak
Abhishek Bhutada
Liam Cleary
Casey Engle
Megan Harrigan
Kacie Hoyt
Kelly Ingram
Ilona Kitay
Celine Marlin Andrews
Daniel Purcell
Samantha Speroni