Davidson Research Network Mentors and Sites 2026

1. Anil K. Sood, M.D. (Davidson Alumnus) Professor and Vice Chair for Translational Research

Departments of Gynecologic Oncology, Reproductive Medicine, and Cancer Biology

Director, Ovarian Cancer Research Program

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Research Focus

Gynecologic Cancer

Projects

RNA Interference

Non-coding RNA work

Angiogenesis

Influence of stress hormones

Techniques

RT-PCR

Protein analysis

Animal work

Immunohistochemistry

2. **Brett Ginsburg, Ph.D.**

Associate Professor of Psychiatry and Pharmacology

University of Texas Health Science Center

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Research Focus

Biological Psychiatry/Pharmacology

Projects

Measuring biomarkers for psychiatric disorders

Analysis of drugs of abuse

Development of drug delivery solutions

Techniques

Mass spectrometry

Drug measurement

3. Andrew Bazemore MD MPH (Davidson Alumnus)

Senior Vice President for Research and Policy
American Board of Family Medicine

Co-director Center for Professionalism & Value in Healthcare

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Also, Departments of Family Medicine, Georgetown University, Virginia Commonwealth University and University of Toronto

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Website: https:www.professionalismandvalue.org

Research Focus:

- Professionalism in Health Care
- Equity and Social Accountability in Health Workforce and Training
- Value-Based Payment and Measurement
- Access to Care, Geospatial Analytics
- Integrated Primary Care Practice and Delivery

4. Neil Alexis

Professor, Dept. of Pediatrics

Director of the Airway Immunobiology Laboratory at the UNC Center for Environmental Medicine, Asthma, and Lung Biology (CEMALB)

University of North Carolina School of Medicine

US EPA Human Studies Facility

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Research Focus

Biology of the central airways, specifically trying to understand the cellular and biochemical host defense functions that occur in that region of the lung.

Innate and acquired immune responses in normal healthy people as well in individuals with pre-existing airway diseases such as asthma, chronic obstructive pulmonary disease (COPD) and cystic fibrosis (CF).

Immune-inflammatory pathophysiology of lung disease and how inhaled irritants affect patients with lung disease

Environmental exposure studies with the Environmental Protection Agency using state of the art exposure chambers

5. Clyde Wright MD (Davidson Alumnus)

Assistant Professor

Section of Neonatology

Department of Pediatrics

Children's Hospital Colorado and

University of Colorado School of Medicine

Perinatal Research Center

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Research Focus

The contribution of the innate immune response to the pathogenesis of bronchopulmonary dysplasia (BPD) in very low birthweight infants (infants born less than 1500 grams).

BPD, a chronic lung disease of infancy, affects 25% of the very low birthweight infants and leads to significant long term morbidity. BPD results in part from multiple inflammatory and oxidant insults encountered in the perinatal period. The innate immune response to these insults is thought to contribute to the pathogenesis of BPD. The major focus of the research is to further define how the neonatal lung responds to these toxic exposures. Over 100 genes orchestrating the cellular response to these insults are regulated by the transcription factor NF-κB. Clinical studies have correlated NF-κB activation in the preterm lung to an increased risk of developing BPD. This lab is working to define how NF-κB activation contributes to neonatal lung injury and abnormal development.

Dr. Wright's DRN position is funded by the GEMS program at the University of Colorado. The GEMS program has the following requirements: "GEMS interns are selected on the basis of academic achievement, interest in biomedical science research careers, and inclusion in an underrepresented group or category (first generation college attendee, low income, financial need, or ethnic identity as African American, Hispanic, American Indian, Alaska Native, or Southeast Asian, Pacific Islander) Being GEMS eligible is a requirement for Dr. Wright's position.

6. Kelly Carter Nelson MD. (Davidson Alumnus)

Associate Professor

Department of Dermatology

MD Anderson Cancer Center

The University of Texas

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Research Interests: exploring barriers to and options for early melanoma diagnosis, including:

Cost of care impact of provider diagnostic accuracy for melanoma

Barriers to early melanoma diagnosis in the state of Texas

Providing dermoscopy education to enhance provider diagnostic education

Validating non-invasive diagnostic technologies to enhance early melanoma detection

7. Anna Mandinova, MD, PhD

Vice-Chair for Research, Department of Dermatology

Associate Director, Cutaneous Biology Research Center
Associate Professor, Harvard Medical School
Broad Institute MIT/Harvard, Associate Member
Harvard Stem Cell Institute, Affiliate Faculty
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In the Mandinova lab, we employ the epidermis as a model system to investigate adult stem cells in both normal and pathological conditions. Our research endeavors revolve around key inquiries:

- We examine the mechanisms governing homeostatic stem cell renewal and its intricate balance with the commitment to differentiation, which is essential for preserving tissue integrity.

- We explore the epidermis's remarkable capacity to endure and repair frequent injuries and insults.

- We study the safeguards that protect genomically damaged stem cells.

- We investigate the factors that underlie infrequent instances of aberrant clonal expansion, which can transform these cells into benign or malignant lesions.

To attain these insights, our attention is directed toward the posttranscriptional regulation of gene expression and its dynamic interaction with cellular metabolism. We posit that this approach offers pragmatic avenues for potential therapeutic interventions and identifying pharmacologically "druggable" targets.

8. Richard M. Peek, Jr., M.D. (Davidson Alumnus)

Director, Division of Gastroenterology, Hepatology, and Nutrition

Mina Cobb Wallace Chair in Immunology

Professor of Medicine

Professor of Cancer Biology

Professor of Pathology, Microbiology and Immunology

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Research Focus

Helicobacter pylori and gastric disease

Projects

Cell signaling/gastric inflammation and cancer

Microbial pathogenesis

Host pathogen interactions

Techniques

PCR/RT-PCR

Protein analysis

Cell and organoid culture

Molecular techniques

Cell imaging

Animal models of gastric cancer

9. **Sallie Permar, M.D., Ph.D. (Davidson Alumnus)**

Nancy C. Paduano Professor and Chair

Weill Cornell Medicine

Pediatrician-in-Chief

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WCM Pediatrics Website: https://pediatrics.weill.cornell.edu/

WCM Permar Lab Website: https://www.permarlabwcm.org/

Research focus

The Permar lab focuses on development of immunologic strategies to eliminate neonatal pathogens – with the ultimate goal of providing every child with a healthy start to life. Research projects include:

- Investigating the natural maternal and infant immune responses that contribute to impeding transmission of vertically transmitted viral pathogens, such as HIV, cytomegalovirus (CMV), and Zika, and how these effective immune responses can best be targeted by vaccine approaches.

- Developing and utilizing nonhuman primate models of vertical virus transmission to perform proof of concept studies to determine whether the vaccine approaches that target the naturally protective immune responses are effective.

- Defining both innate and adaptive immune responses at the maternal-fetal interface, including mucosal surfaces and the immunology of breast milk.

Experience may include limited clinical shadowing in pediatrics and infectious diseases, as well as interaction with other trainees in the lab (that may include postbaccalaureate scholars and research technicians, research staff, PhD and MD students, postdoctoral fellows, clinical fellows, and junior faculty) and Dr. Permar in her leadership role as a department chair at an academic medical center.

10. Brad Ellison, MD MS (Davidson Alumnus)

Clinical Director of Orthopedic Adult Reconstruction Operations

OrthoCarolina – Concord

Musculoskeletal Clinical Research Coordinator for Davidson College Pre-Medical Program

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OrthoCarolina Research Institute Director: Christi Cadd (Christi.Cadd@orthocarolina.com)

Atrium Musculoskeletal Research Director: Susan Odum PhD (Susan.Odum@Atriumhealth.org)

Orthopedic Surgery is the medical and surgical discipline focused on treatment of musculoskeletal disease and injury. The OrthoCarolina Research Institute is one of the most prolific clinical research programs in the world, producing more publications, presentations and research studies in musculoskeletal sciences than any other single institution (84 publications in 2021). The experience will have two points of focus that will emphasize both clinical and research activity during the two-month opportunity. The first component will be working alongside leading

researchers in analyzing data to contribute to research studies in a manner that would hopefully result in opportunity for authorship on a peer-reviewed publication and presentation at a national Orthopedic meeting. The second component will consist of an in-person opportunity to shadow live surgery in the Operating Room, as well as join in the clinic for direct patient interactions. Collectively, this experience will provide a comprehensive opportunity in Orthopedic Surgery that will generate meaningful clinical research, while also engaging in direct patient care experiences in the operating room and office settings.

11. Maria Blasi, Ph. D. (Duke University)

Maria Blasi, PhD
Assistant Professor of Medicine

Division of Infectious Diseases

Co-Director Training Program at The Duke Human Vaccine Institute
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Research Focus

- HIV vaccine development using an integrase defective lentiviral vector (IDLV) as delivery platform to induce durable immune responses.
- Coronavirus vaccine development using IDLV.
- Engineering of monoclonal antibodies against HIV and other viral infections
- HIV persistence in the kidney
- Development of therapeutic strategies against HIV and other viral infections

Techniques

Cloning

RT-PCR

Sequencing

Cell culture and transfection

Antibody purification

ELISA

ELISPOT

Flow cytometry

High Containment BSL-3 work for coronavirus research

Processing of human samples (fluids and tissues) from people with HIV and SARS-CoV-2

Animal models (mouse and non-human primate)

12. **William Stoops, PhD (Davidson Alumnus)**

Professor

Departments of Behavioral Science, Psychiatry and Psychology

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Lab Website:
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Research focus

Development and testing of novel interventions and outcomes for cocaine use disorder using Phase I, II and III clinical trial methods

Human behavioral pharmacology of stimulants, opioids, nicotine and alcohol using tightly controlled human laboratory methods

Identifying risk and vulnerability factors associated with substance use disorders

Understanding psychosocial, immune and cardiovascular consequences of cocaine use

13. P. Brent Ferrell, MD (Davidson Alumnus)

Assistant Professor of Medicine

Vanderbilt University Medical Center

Vanderbilt Ingram Cancer Center

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Research focus

The Ferrell Lab focuses on clonal bone marrow disorders, from clonal hematopoiesis, a common non-malignant phenomenon that precedes many blood cancers, to myeloid malignancies, including acute myeloid leukemia. We investigate the molecular pathology of these disorders, including genotype-phenotype relationships (cell intrinsic changes), and microenvironmental effects (cell extrinsic/immune cell focused). Currently we have projects in the lab that investigate clonal evolution in MDS/AML, drug resistance in FLT3 mutated AML, bone marrow inflammation in clonal hematopoiesis, and T cell interactions in AML. Our lab uses a breadth of wet lab and computational techniques to study these areas, along with in vivo (mouse) models, in vitro approaches, and primary human samples. Dr. Ferrell is a physician scientist who had an unusual path to his current career, including avoiding pre-med and being a philosophy major at Davidson 🙂 His clinical work is focused on hematologic malignancies (leukemia/lymphoma).

Students will likely work with lab staff as well as VU graduate and MSTP students in Dr. Ferrell's lab and learn the basic techniques we use (flow cytometry, mass cytometry, single cell genomics, other genomic methods, cell culture, mouse/human tissue processing).

14. Jason Somarelli, PhD

Assistant Professor

Department of Medicine

Director of Research, Duke Comparative Oncology Group

Duke Cancer Institute

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Research interests:

The study of adaptation to extreme environments, including:

- Discovering novel treatment approaches to overcome therapy resistance in cancer
- Bioengineering microbes to remediate plastic pollution
- Analyzing negative health consequences of plastic and plastic additives
- Determining the molecular adaptations of marine mammals to diving