Please note: Several mentors have agreed to support returning Davidson students whose opportunities were cancelled due to COVID-19 in the summer of 2021. These mentors are indicated with an asterisk (*). Students may select these mentors as alternates but should select their mentor from the list of mentors without an asterisk. Thank you for your patience and understanding.

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
M.D. Anderson Cancer Center
Unit 1362
P.O. Box 301439
Houston, Texas 77230-1439
Phone: 713-745-5266
Email: asood@mdanderson.org
Assistant: Maria Flores
mflores@mdanderson.org
Lab manager: Nick Jennings
nbjennin@mdanderson.org
Phone: 713-792-4130
Website: http://faculty.mdanderson.org/Anil_Sood

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. John McDevitt, Ph.D.

Chair, Department of Biomaterials and Biomimetics
New York University College of Dentistry
433 First Avenue, 8th floor
New York, N.Y. 10010
212-998-9204 office
212-995-4244 fax
E-mail: mcdevitt@nyu.edu

Research Focus
   Development of lab-on-a-chip biosensors that will allow point of care diagnostic testing of human disease
   Projects
      Bioengineering of lab-on-a-chip biosensors
      Biomarker discovery for various diseases
         Cardiac disease
         Various cancers
         Substance abuse
         Diabetes
   Techniques
      Luminex assay for disease markers
      Engineering processes for nanochips
      Development of alpha and beta prototypes of chips and analyzers
3. *Tom Patterson, MD (2020 Student Priority)*

Division Head-Infectious Disease  
Department of Medicine  
University of Texas Health Science Center  
7703 Floyd Curl Drive  
San Antonio, Texas 78229-3900  
Contact through Spencer Redding, DDS, MEd (Davidson Alumnus ‘72)  
Phone: 210-21302721  
Email: redding@uthscsa.edu  
(Best contact is Dr. Redding’s Email or phone)  
Website: www.sacmm.org

Research Focus  
Medical Mycology (Fungal pathogens that cause human disease)  
Projects  
Diagnostic testing  
Fungal resistance to current treatments  
Animal models of fungal infections  
Evaluation of new antifungal agents  
Techniques  
In vivo animal studies  
RT-PCR  
Antifungal susceptibility testing
4. Marty Javors, Ph.D.

Professor of Psychiatry and Pharmacology
University of Texas Health Science Center
7703 Floyd Curl Drive
San Antonio, Texas 78229-3900
Phone: 210-567-5532
Email: javors@uthscsa.edu

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

5. 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
1016 16th Street NW, Suite 700
Washington, D.C. 20036
Also, Departments of Family Medicine, Georgetown University, Virginia Commonwealth University and University of Cincinnati; Division of Health Policy, George Washington University

Phone: 202-600-9447
Email: abazemore@theabfm.org

Website: https://www.professionalismandvalue.org
Research Focus:

- Health Workforce
- Primary Care Economics
- Needs Assessment
- Geospatial Analytics in Primary Health Care
- Social Accountability in Medical Education
- Integrated Primary Care
6. *Neil Alexis (2020 Student Priority)*

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  
104 Mason Farm Road  
UNC Chapel Hill  
Chapel Hill, N.C. 27599  
919-966-9915 office  
919-966-9863 fax  
919-215-7450 cell  
E-mail: neil_alexis@med.unc.edu

**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
7. David Walker, MD (Davidson Alumnus)

Professor Department of Pathology
Executive Director, Center for Biodefense and Emerging Infectious Diseases
The University of Texas Medical Branch
301 University Blvd., Keiller Building
Galveston, Texas 77555-0609
Phone: 409-747-3990
Fax: 409-747-0762
E-mail: dwalker@utmb.edu

Research Focus
Pathogenesis of tickborne infectious diseases
Immune function related to these infections with the goal of vaccine development

Techniques
- Western Blot
- ELISA
- PCR
- Animal studies
8. *Clyde Wright MD (Davidson Alumnus) (2020 Student Priority)*

Assistant Professor  
Section of Neonatology  
Department of Pediatrics  
Children's Hospital Colorado and  
University of Colorado School of Medicine

Perinatal Research Center  
13243 East 23rd Ave, Mail Stop F441  
Aurora, CO 80045  
Office Phone: 303.724.6564  
Email: clyde.wright@ucdenver.edu

**There are two applications for this position-one to the Davidson Research Network and one to the GEMS Program at the University of Colorado. They must both be completed to apply to this site. Information about both applications are on the Davidson Research Network page**

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.

Associate Professor
Department of Dermatology
MD Anderson Cancer Center
The University of Texas
Email: kcnelson1@mdanderson.org
Office: 713-745-1113
Fax: 713-745-3597

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

10. *Xu Wu, Ph.D (Tom Horn) (2020 Student Priority)

Associate Professor
Cutaneous Biology Research Center, Massachusetts General Hospital
Harvard Medical School
Charlestown, MA 02129
Phone: 617-726-4438
Fax: 617-726-4453
Email: xwu@cbrc2.mgh.harvard.edu
Lab website: www.xwulab.org

Research focus:
Chemical biology, medicinal chemistry, cell signaling, and protein lipidation

Projects:
*Chemical approaches to study posttranslational protein lipidation and lipid metabolism in cellular processes
*Chemical approaches to dissect signal cross-talking and “rewiring” in degenerative diseases and cancers
*Chemical and functional genomic approaches to explore cellular senescence and terminal differentiation

Techniques
Chemical biology
Functional genomics
Assistant Professor
Department of Dermatology and MGH Cancer Center
Massachusetts General Hospital
Harvard Medical School
Center for Cancer Immunology
Cutaneous Biology Research Center
Building 149 13th Street, 3rd floor
Charlestown MA 02129
Phone: 617-643-6436, Fax: 617-726-4453
Email: sdemehri1@mgh.harvard.edu

Webpage:
http://www.massgeneral.org/cancer/research/researchlab.aspx?id=1648

Research Focus

The focus of the Demehri laboratory is to determine the role of the immune system in regulating the early stages of cancer development in order to harness its anti-tumor potential for cancer therapy.

Projects

- Mechanisms of T cell activation against cancer.
- Mechanisms of natural killer (NK) cell recruitment and activation against cancer.
- Mechanisms of tumor promotion by the immune system.

Techniques

- Immunohistochemistry
- Flow cytometry
- PCR / qPcr
12. Duke University HIV Program

Dr. Saunders at Duke is able to take one student per session. The research will focus on HIV and will occur in the lab.

Kevin O. Saunders, Ph. D. (Davidson Class of 2005)
Assistant Professor
Director, Laboratory of Protein Expression
Associate Director of Research Duke Human Vaccine Institute
Department of Surgery
Duke University Medical Center
2 Genome Court, MSRBII Bldg. Room 4074
DUMC 103020 Durham, NC 27710-5907 Ph: 919-684-1503 Email: kevin.saunders@duke.edu
Website: https://dhvi.duke.edu/kevin-saunders

Research Focus
HIV-1 immunity and immunogen design
Projects
Pathogen-specific monoclonal antibody repertoire analysis
Antibody engineering
Antibody recognition of glycans
HIV-1 Envelope design
B cell clonal persistence
Techniques
Illumina MiSeq
RT-PCR
Fast performance liquid chromatography purification
Luminex multiplex immunoassays for cytokines and glycans
Cell culture and transfection
Surface plasmon resonance
ELISA
Flow cytometry
Site-directed mutagenesis
12. Stokes Peebles, M.D. (Davidson class of 1982)

Elizabeth and John Murray Professor of Medicine
Division of Allergy, Pulmonary, and Critical Care Medicine
T-1218 Medical Center North
Vanderbilt University Medical Center
1161 21st Avenue South
Nashville, TN 37232-2650
Phone: 615-322-3412
Email: stokes.peebles@vanderbilt.edu
Website: https://medicine.mc.vanderbilt.edu/person/Ray%20%20Stokes-Peebles

Research focus:
   Lung Inflammation

Projects
Eicosanoid regulation of allergic airway inflammation
Glucagon-like peptide-1 receptor signaling in allergic airway inflammation
Respiratory syncytial virus pathogenesis

Techniques
Flow cytometry
Airway physiology
In vivo animal models of asthma and anaphylaxis
In vivo infection models
14. *Richard M. Peek, Jr., M.D. (Davidson Alumnus) (2020 Student Priority)*

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  
Vanderbilt University Medical Center  
1030C MRB-IV  
Division of Gastroenterology  
2215 Garland Avenue  
Nashville, TN 37232  
Phone: 615-343-1596  
Email: rickード.peek@vumc.org  
Assistant: Nikki Hirsch  
nikki.hirsch@vumc.org  
615-875-7498

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

Contact Dr. Spencer Redding for questions: redding@uthscsa.edu