


# Graduate Program in Biochemistry and Cancer Biology

## BCB Faculty 2024

 Highlighted in Yellow indicates currently recruiting PhD students



### **Ande, Satyanarayana, PhD**

CN3150  
Associate Professor of  
Biochemistry and Molecular  
Biology

[SANDE@augusta.edu](mailto:SANDE@augusta.edu)

Dr. Ande's lab investigates the regulation and function of specific transcription factors and tumor suppressors in liver tumorigenesis and liver tumor angiogenesis. His lab also studies adipose tissue metabolism and obesity and the molecular links between obesity and liver cancer by utilizing knockout and transgenic mouse models.



### **Arbab, Ali, PhD, MBBS**

CN 3141  
Professor, Biochemistry and  
Molecular Biology  
Phone: (706) 721-8909

[AARBAB@augusta.edu](mailto:AARBAB@augusta.edu)

Our laboratory creates different orthotropic animal models for human glioma. We use in vivo MRI, SPECT and optical imaging to determine the tumor growth, tumor vascular parameters, migration and accumulation of endogenous or exogenously administered stem/progenitor cells in the tumor neovascularization, and accumulation of laminin avid nanoparticle based contrast agents.



### **Bartoli, Manuela, PhD**

CB 2335  
Professor, Dept. of  
Ophthalmology  
Phone: (706) 721-9797

[mbartoli@augusta.edu](mailto:mbartoli@augusta.edu)

The focus of my research is on identifying the molecular and cellular mechanisms involved in the etiologies of several diseases affecting vascular dysfunction and promoting retinal and brain neurovascular injury. In particular, we are studying the role of histone deacetylases and non-coding RNAs in these pathologic processes.



### **Browning, Darren, PhD**

Director, Graduate Program in  
Biochemistry & Cancer Biology  
CN 1167  
Professor, Biochemistry and  
Molecular Biology  
Phone: (706) 721-9526

[DBROWNING@augusta.edu](mailto:DBROWNING@augusta.edu)

Our focus is cGMP signaling in the intestine. My lab has identified important roles for cGMP in epithelial homeostasis, and that increasing cGMP using PDE5 inhibitors can prevent colon cancer and treat constipation and ulcerative colitis in mice. Current projects: (1) using intestinal organoids to delineate underlying mechanisms, (2) developing novel gut-targeted PDE5 inhibitors for clinical use, (3) studying the loss of intestinal cGMP signaling and its role in age-related gut pathology.

# Graduate Program in Biochemistry and Cancer Biology

---



## **Chadli, Ahmed, MS, PhD**

CN 3151  
Molecular Chaperone Biology  
Associate Professor of Medicine  
Phone: (706) 721-4661

[ACHADLI@augusta.edu](mailto:ACHADLI@augusta.edu)

Research in Dr. Chadli's laboratory focuses on understanding the Hsp90 chaperoning machine and co-chaperones in the initiation and progression of breast and prostate cancers using *in vitro* and mouse conditional knockout models. Targeting the Hsp90 machine have been shown to disrupt the dysfunctional circuitries that underlie cancer. We have discovered new natural products that inactivate the Hsp90 machine. These compounds have a powerful immunotherapeutic impact through combination of Hsp90 machine inhibition and activation of T-cell response to eliminate tumors in mice.



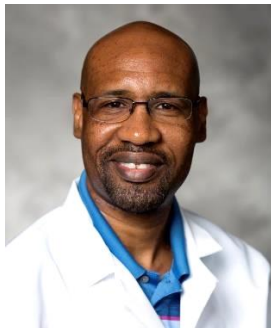
## **Chiang, Austin PhD**

GE 4020  
Assistant Professor, Immunology  
Center of GA  
Phone: (706) 667-4941

[auchiang@augusta.edu](mailto:auchiang@augusta.edu)

Austin Chiang's research focuses on systems immunology, a powerful approach to understand the complex immune system as a whole, which holds great promise for vaccine development and the manipulation of human immune system.

Dr. Chiang's research focuses on unraveling the complexities of human diseases such as atherosclerotic cardiovascular disease, cancer, eosinophilic esophagitis, Staphylococcus aureus infection, and Autism Spectrum Disorder (ASD).



## **Daddacha, Waaqo, PhD**

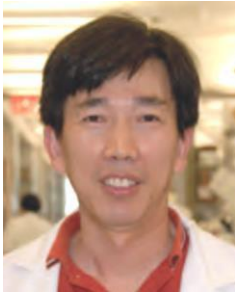
CN 2176  
Assistant Professor, Biochemistry  
and Molecular Biology  
Phone: (706) 721-0272

[wdaddacha@augusta.edu](mailto:wdaddacha@augusta.edu)

DNA double-strand break (DSB) repair and nucleotide metabolism are critical determinants of resistance to many types of cancer treatments, including chemotherapy and ionizing radiation (IR). Therefore, expanding our knowledge of both pathways is of considerable significance for discovering a novel therapy as well as improving the existing options. Our laboratory contributes to this effort by investigating the overlaps between the two pathways and implication to cancer. We mainly focus on delineating functions and regulation of genes like SAMHD1, a known player in nucleotide metabolism and DNA damage response, while determining its coordination with RNR, a well-established nucleotide regulator. Our ultimate goal is exploring the possibility of utilizing knowledge gained to identify biomarkers and therapeutic targets for cancers such as malignant glioma.

# Graduate Program in Biochemistry and Cancer Biology

---



## He, Yukai, MD, PhD

CN 4150  
Professor of Medicine Phone:  
(706) 721-2728

[YHE@augusta.edu](mailto:YHE@augusta.edu)

Dr. He studies the basic mechanisms of how vaccines activate the immune system and the innovative design of cancer vaccines. His research focus is on creation of cancer vaccines for melanoma and hepatocellular carcinoma in mice and on translation of animal studies into clinical applications.

---



## Hedrick, Lynn, PhD

CN 4317  
Professor and co-director  
MCG-Immunology Center of GA

[lhedrick@augusta.edu](mailto:lhedrick@augusta.edu)

Immune cells are central to our health and are key cellular players in fighting disease. Innate immune myeloid cells are early responder immune cells that sense pathogenic bacteria, viruses, and even tumor cells, and then orchestrate their killing. Our laboratory studies these myeloid cells in health, cardiovascular disease, and cancers. Key new projects are to determine how these innate immune cells differ in healthy men and women and in healthy people from different ethnicities, and how these differences impact disease susceptibility. We utilize high dimensional immunoprofiling methods, including CyTOF mass cytometry and single cell RNA sequencing to study myeloid cells in healthy humans, and in human subjects with heart disease and cancer. We use our discoveries to create new molecular targets of disease and to predict responses to immunotherapy.

---



## Horuzsko, Anatolij, MD, PhD

CN 3123  
Professor of Medicine  
Phone: (706) 721-8736

[AHORUZSKO@augusta.edu](mailto:AHORUZSKO@augusta.edu)

Dr. Horuzsko's studies focus on organ transplantation and the role of Human Leukocyte Antigen-G (HLA-G). His aim is to improve allograft survival in patients and address allergy, autoimmune diseases and graft-versus-host disease. His work in transplantation is relevant to cancer, but he also studies the inflammatory mechanisms of host defense and carcinogenesis.

---



## Hu, Tianxiang, PhD

CN 2132  
Assistant Professor,  
Biochemistry & Molecular Biology  
Phone: (706) 721-7849

[TIHU@augusta.edu](mailto:TIHU@augusta.edu)

The researches in our group focus on the investigation of molecular mechanisms regulating leukemia initiation and progression. We decipher the transcriptional regulatory network, including oncogenes, miRNAs and lncRNAs during leukemogenesis driven by different chromosome translocations. We also investigate the gene regulation underlying the establishment of immune evasion in leukemogenesis. We use the newly discovered insights to direct the development of novel cancer therapy strategies.

# Graduate Program in Biochemistry and Cancer Biology

---



## **Jadeja, Ravirajsinh, PhD**

CN 1166  
Assistant Professor of Biochemistry  
and Molecular Biology  
Phone: (706) 721-1300

[rjadeja@augusta.edu](mailto:rjadeja@augusta.edu)

Our research seeks to innovate a therapy for a prevalent childhood blindness condition, Retinopathy of Prematurity (ROP). This condition typically arises from premature infants' exposure to high oxygen and neonatal hyperglycemia, affecting retinal vasculature development, causing detrimental eye development, and potentially leading to blindness. The current therapeutic landscape is limited to invasive procedures with substantial adverse effects. Our findings suggest a link between the dysfunction of the gut microbiome and its metabolites with ROP. Our results indicate that administering a short-chain fatty acid to the ROP mice model mitigates pathological neovascularization, hinting at a promising non-invasive treatment. Our objectives include validating this treatment in disease models, deciphering the molecular interactions involved, and assessing its effects on specific retinal cells.

---



## **Layman, Lawrence, MD, PhD**

BA 7300  
Chair & Professor of Obstetrics &  
Gynecology  
Phone: (706) 721-3832

[lalayman@augusta.edu](mailto:lalayman@augusta.edu)

Dr. Layman studies the roles of the reproductive endocrinology, infertility & genetics.

---



## **Liu, Kebin, PhD**

CN 1173  
Professor of Biochemistry and  
Molecular Biology  
Phone: (706) 721-9483

[KLIU@augusta.edu](mailto:KLIU@augusta.edu)

A graduate of the University of Oklahoma, Dr. Liu studies epigenetic and genetic regulation of tumor suppressor gene expression, molecular mechanisms of apoptosis resistance in tumor immune evasion and escape, and development of molecular target-based chemotherapy to enhance the efficacy of cancer immunotherapy.

---



## **Lokeshwar, Bal, PhD**

CN 3130  
Professor of Medicine Phone:  
(706) 723-0033

[BLOKESHWAR@augusta.edu](mailto:BLOKESHWAR@augusta.edu)

The research program is focused on two aspects of cancer: cancer prevention using natural products and understanding the mechanism of cancer progression leading to metastasis. Current projects in his laboratory investigate the role of CXC chemokines and their receptors (CXCRs) that contribute to cancer progression and metastasis. The laboratory is engaged in translational research, where the group is investigating novel compounds isolated from dietary spices that may prevent cancer development and enhance response to existing therapy for prostate and breast cancers.



# Graduate Program in Biochemistry and Cancer Biology

---



## Lokeshwar, Vinata, PhD

CN 1161  
Professor and Chair  
Biochemistry & Molecular Biology  
Phone: (706) 721-7652

[VLOKESHWAR@augusta.edu](mailto:VLOKESHWAR@augusta.edu)

The major focus of the laboratory is to examine how extracellular matrix-driven tumor cell signaling promotes tumor growth, metastasis and angiogenesis. The emphasis is to discover and validate accurate diagnostic and prognostic biomarkers for prostate, bladder and renal cell carcinomas and to design biomarker-driven targeted treatments and chemodietary prevention strategies for metastatic cancers. The laboratory provides training in translational research and a collaborative atmosphere.

---



## Lui, Vivian, PhD

CN 3111  
Associate Professor of Medicine,  
Biochemistry & Molecular Biology  
Phone: 706-721-5047

[WLUI@augusta.edu](mailto:WLUI@augusta.edu)

We are a Precision Medicine Laboratory. Our laboratory employs both Bioinformatics and wet-lab techniques in the -omics arena (genomics, transcriptomics, and proteomics) to identify new precision medicine drug targets for head and neck cancer. Come join us if you would like to focus on highly translational research, which can lead to clinical trials.

---



## Manicassamy, Kumar, PhD

CN 4158A  
Professor, Biochemistry  
and Molecular Biology

[SMANICASSAMY@augusta.edu](mailto:SMANICASSAMY@augusta.edu)

The overall goal of our research is to understand how the innate immune system regulates adaptive immune responses to pathogens, tumors and self-antigens, and harness this knowledge in the design of vaccines and therapeutics.

---



## Mivechi, Nahid, PhD

CN 3153  
Professor, Radiology/Radiation  
Oncology, Molecular Chaperone  
Biology  
Phone: (706) 721-8759

[NMIVECHI@augusta.edu](mailto:NMIVECHI@augusta.edu)

Dr. Nahid Mivechi has a long-standing research interest in the regulation and function of heat shock transcription factors (HSFs) and heat shock protein (HSPs) in disease conditions. Her strongest contribution is in dissecting cellular and molecular mechanisms regulated by HSFs and molecular chaperone machines for cancer (Breast, T-ALL, AML, Liver) and metabolic diseases. For this research, she has developed several animal models including conventional and conditional HSF or HSP-knockout mice.

# Graduate Program in Biochemistry and Cancer Biology

---



**Moskofidis, Dimitrios, MD,  
PhD**

CN 3143  
Molecular Chaperone Biology  
Professor of Medicine Phone: (706)  
721-8738

[DMOSKOFIDIS@augusta.edu](mailto:DMOSKOFIDIS@augusta.edu)

Dr. Moskofidis explores basic processes in the immune response against acute and persistent viral infections in well-established mouse models, with long-term goals of developing or improving vaccination strategies for the prevention and treatment of viral infections in humans. He also studies molecular chaperones in cancer and neurodegenerative diseases.



**Nagendra, Singh, PhD**

CN 1176  
Professor of Biochemistry and Molecular  
Biology  
Phone: (706) 721-6238

[NASINGH@augusta.edu](mailto:NASINGH@augusta.edu)

Dr. Singh's Lab studies molecular and cellular mechanisms of generation of antibody responses against bacteria, viruses, pathogens, and vaccines. Once induced how long these antibody responses last. The latter is directly linked to how long antibodies induced following vaccination and infections protects us against future infections. The second project in his laboratory focuses on how T cells are activated, and how do they generate immune responses and help other immune cells to successfully eliminate invading pathogens and cancers



**Pace, Betty, MD**

Francis J. Tedesco, MD Distinguished Chair  
in Pediatrics Hematology/Oncology  
Professor of Pediatrics  
Professor of Biochemistry and Molecular  
Biology  
Professor of Graduate Studies  
Phone: (706) 721-6893

[BPACE@augusta.edu](mailto:BPACE@augusta.edu)

The Pace laboratory conducts research related to the developmental regulation of globin gene expression using primary erythroid progenitor culture systems and the preclinical sickle cell disease transgenic mouse model. The major effort has been the identification of transcription factor and epigenetic targets for drug-mediated fetal hemoglobin induction as a treatment for sickle cell disease. Preclinical data generated in the Pace laboratory has translated into a recent Investigational New Drug approval from the US Food and Drug Administration and three novel drugs that are currently in early-phase clinical trials. Parallel her research efforts, Dr. Pace has personally mentored over 100 junior scientists including ten PhD candidates. She also directs an NHLBI-funded training Program to Increase Diversity for Individuals Engaged in Health-Related Research-Functional and Translation Genomics (PRIDE-FTG) blood research. Over 114 junior faculty members from different academic centers across the US have trained in the PRIDE-FTG program.

# Graduate Program in Biochemistry and Cancer Biology

---



## **Saini, Sharanjot, PhD**

CN 1161  
Associate Professor, Biochemistry and  
Molecular Biology  
Phone: (706) 721-0856

[ssharanjot@augusta.edu](mailto:ssharanjot@augusta.edu)

Saini lab focusses on harnessing the potential of exosomes as a source of novel cancer biomarkers and for engineering novel therapies against cancer. Specific focus areas include: (i) developing novel diagnostic and prognostic biomarkers against aggressive, late-stage prostate cancer; (ii) developing novel targeted exosome based therapeutic strategies against aggressive cancers, with a primary focus on prostate cancer. (iii) Deciphering novel roles of small non-coding RNAs/microRNAs underlying progression and metastasis of prostate cancer to bone and viscera.

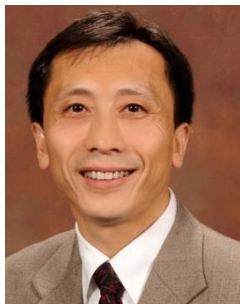


## **Sakamuro, Daitoku, PhD**

CN 2177  
Associate Professor of  
Biochemistry & Molecular Biology  
Phone: (706) 721-1018

[DSAKAMURO@augusta.edu](mailto:DSAKAMURO@augusta.edu)

The Sakamuro laboratory is interested in the signaling mechanisms by which advanced cancer cells acquire resistance to DNA damage, p53- dependent apoptosis, and substratum dissociation stress, and reverse EMT. One focus is the dual roles of the c-MYC transcription factor in genomic instability and DNA damage resistance. Another is the mechanisms of apoptosis induced by the p53 tumor suppressor in the presence of chromatin remodeling factors.



## **Shi, Huidong, PhD**

CN 2138  
Professor of  
Biochemistry & Molecular Biology  
Phone: (706) 721-6000

[HSHI@augusta.edu](mailto:HSHI@augusta.edu)

Dr. Shi studies epigenomics, and development of high-throughput technologies for dissecting the complex epigenetic regulation in normal and tumor cells. Epigenetics is heritable chromatin organization and gene expression not coded by DNA sequence. While epigenetics refers to the study of single genes or sets of genes, epigenomics is the global analyses of epigenetic changes across the genome.



## **Thangaraju, Muthusamy, PhD**

CN 1161  
Professor of  
Biochemistry & Molecular Biology Phone:  
(706) 721-0272

[MTHANGARAJU@augusta.edu](mailto:MTHANGARAJU@augusta.edu)

Dr. "Raju" is interested in the role of plasma membrane transporters in the uptake of histone deacetylase (HDAC) inhibitors into tumor cells; Relevance of these transporters to tumor suppression in mammary gland via HDAC inhibition; Physiologic role of these transporters in apoptosis during mammary gland involution; Epigenetic mechanisms for silencing of these transporters in breast cancer.

# Graduate Program in Biochemistry and Cancer Biology

---



## **Thompson, Stuart, PhD**

CB 2607  
Professor, Division for Infectious Diseases,  
and  
Biochemistry & Molecular Biology,  
Phone: (706) 721-7277

[STTHOMPS@augusta.edu](mailto:STTHOMPS@augusta.edu)

My lab studies *Campylobacter* and *Helicobacter*, bacteria that cause gastroenteritis and gastric cancer, respectively. We use molecular and biochemical techniques to elucidate the mechanisms by which these pathogens cause disease. Specifically, we study gene regulation events that link motility with formation of biofilms, bacterial communities that resist antibiotics and the host immune system.



## **Zhu, Yanfang 'Peipei' PhD**

CN 3323  
Assistant Professor of  
Biochemistry & Molecular Biology  
and  
Immunology Center of Georgia  
Phone: (706) 729-2404

[PZHU@augusta.edu](mailto:PZHU@augusta.edu)

Peipei Zhu's research focuses on the role of neutrophils, a group of cells that comprise more than 60% of the pool of white blood cells that repair the body from infection and help heal tissue. She discovered that a pool of circulating neutrophils in the bloodstream becomes heterogeneous in inflammatory diseases, including cancer and cardiovascular diseases. In addition to "normal" neutrophils, a new type of neutrophil called NeP (Neutrophil Progenitor) appears only in tumor-bearing mice and melanoma patients – and can serve as a possible early-stage marker for melanoma

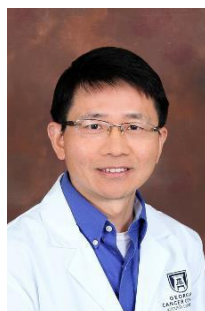


## **Yan, Chunhong, PhD**

CN 2134  
Professor  
Biochemistry & Molecular Biology  
Phone: (706) 721-0099

[CYAN@augusta.edu](mailto:CYAN@augusta.edu)

Dr. Yan's lab utilizes biochemical approaches and genetically-engineered mouse models to study tumor suppressor networks and understand how cancer is generated and progressed. Current interests include the p53 pathway and protein modifications (e.g., ubiquitination and acetylation) in cellular responses to DNA damage and metabolic stresses. He is also interested in developing novel therapeutic strategies targeting aberrant protein translation in cancer.



## **Zhou, Gang, PhD**

CN 4140  
Professor, Medicine, Dept. of  
Biochemistry and Cancer Biology  
Phone: (706) 721-4472

[gzhou@augusta.edu](mailto:gzhou@augusta.edu)

Dr. Zhou's lab studies the molecular and cellular mechanisms underlying tumor-induced immune tolerance. Major efforts include identifying and characterizing novel CD4+ T cell- potentiating agents, elucidating the mechanisms by which CD4+ effector cells activate other tumor-reactive immune cells, determining pathways involved in sustaining or attenuating the function and survival of CD4+ effector cells. Findings from these studies will provide a mechanistic basis for the design of more effective chemo-immunotherapy strategies to cure cancer.