CANCER RESEARCH Drives Discovery
School of Medicine and Health Sciences

Learn more about the outstanding researchers, representing a variety of disciplines, who are collaborating to drive breakthrough innovations in cancer diagnosis and treatment.

EDWARD SETO
Professor of Biochemistry and Molecular Medicine
Associate Director for Basic Sciences, GW Cancer Center

Dr. Seto’s laboratory focuses on understanding histone deacetylase, an enzyme that epigenetically regulates how certain genes turn on or off. His team is developing drugs and chemicals to manipulate the enzyme when it is expressing abnormally high levels in cancer. As the associate center director, Dr. Seto is also developing three basic science research programs that will help the center’s bid for National Cancer Institute designation: cancer biology, immunology/immunotherapy, and microbial oncology. An eventual fourth program will focus on technology and cancer treatment in partnership with the Biomedical Engineering Department.

“It’s really fantastic that we will be in a building where biological scientists, public health scientists, engineers, and physical scientists are all in one place. There are a lot of studies that show proximity stimulates collaboration. Having scientists from different disciplines, yet with common interests, will help us come up with really innovative and outside-the-box ideas in our quest for curing cancer.”

XIAOYAN ZHENG
Assistant Professor of Anatomy and Regenerative Biology

Dr. Zheng’s research centers around the Hedgehog signaling pathway, which is a critical process in embryo development and tissue regeneration. When the pathway fails to function properly, it can lead to birth defects and disease, such as cancer. Dr. Zheng and her team study this pathway in mice and flies to identify target genes for cancer drugs and therapies. Dr. Zheng’s work will lead to a better understanding of how the pathway is linked to human disease and ultimately more targeted drugs for cancer treatment.

“If we want people to donate to our research, we have to show people this environment and that we’re doing the type of research we propose. The new building and its open environment, will make the collaboration easy so we can move things forward in a faster way.”

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ALEXANDROS TZATSOS  
Assistant Professor of Anatomy and Regenerative Biology

Dr. Tzatsos’ work in cancer epigenetics focuses on characterizing enzymes that allow gastrointestinal and blood cancers to proliferate in affected patients. His team develops genetically engineered mouse models that recapitulate molecular changes driving tumor growth and development. These animal models will improve our understanding on how these tumors grow and metastasize and will also provide a platform for drug screening and development.

“The establishment of the GW Cancer Center in the new Science and Engineering Hall is very exciting. It shows a strong commitment to make cancer research a top priority at GW. The advantage of the new building is the open space that integrates multiple disciplines working under the same umbrella. This diversity allows the exchange of ideas and promotes collaboration.”

ALEJANDRO VILLAGRA  
Assistant Professor of Biochemistry and Molecular Medicine

Professor Villagra’s research in “immunoepigenetics”, the combination of epigenetics and immunotherapy, focuses on training the immune system to kill invading cancer cells and tumors. This method of treatment, which would reduce the dependency on radiation and chemotherapy, involves disrupting the pathways that allow tumors to “trick” the immune system and grow and travel throughout the body. He and his team hope this work will lead to new drugs and therapies that will ultimately strengthen the immune system and allow it to recognize and attack cancer cells more effectively.

“Science and Engineering Hall is the best place for us to collaborate with our partners from other GW schools. I am amazed about the ongoing research in chemistry, biomedical engineering, and other departments. After talking to other departments, I have no doubt that multiple interdisciplinary collaborations will be set in the short term. Having access to researchers from different fields will accelerate our discoveries and attract companies and donors to advance our work.”

The GW Cancer Center unites under one organization all of the cancer-related activities across the George Washington University, including those at the GW School of Medicine and Health Sciences, the George Washington University Hospital, and The GW Medical Faculty Associates. It serves as an umbrella over our established cancer organizations, including the Dr. Cyrus and Myrtle Katzen Cancer Research Center, the GW Comprehensive Breast Center, the GW Radiation Oncology Center, and the GW Cancer Institute. Our vision is to become a leading innovator in basic, population, and clinical research and a premier destination for personalized cancer care.

FOR MORE INFORMATION, CONTACT:  
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