

CANCER

MOONSHOT

RETREAT

WEDNESDAY, SEPTEMBER 7, 2022

8:30AM - 3:00PM

UTSA STUDENT UNION, DENMAN ROOM, 2.01.28

UTSA.
Knowledge
Enterprise

 **UT Health**
San Antonio

Mays Cancer Center

AGENDA

7:30 am	Registration and Breakfast (Denman Room, SU 2.01.28)
8:30 am	WELCOME & MAYS CANCER CENTER REMARKS Ruben A. Mesa, M.D., F.A.C.P. Executive Director, Professor, Department of Medicine, Division of Hematology/Oncology, Mays Cancer Center at UT Health San Antonio
8:40 am	UTSA REMARKS Jaclyn L. Shaw, M.S. Interim Vice President for Research, Economic Development, and Knowledge Enterprise, Associate Vice President for Strategic Research Initiatives and Development, The University of Texas at San Antonio (UTSA)
8:50 am	CANCER DEVELOPMENT AND PROGRESSION PROGRAM PRESENTATIONS <i>Epigenetic Regulation in Normal Hematopoietic Stem Cell Functions and Myeloid Malignancies</i> Feng Chun Yang, M.D., Ph.D. Professor, Cell Systems & Anatomy, Mays Cancer Center at UT Health San Antonio
9:00 am	<i>Thermogenic Adipose Tissue and Cancer Cachexia</i> Maria Gonzalez Porras, Ph.D. Assistant Professor (Jan. 2023), Biomedical Engineering and Chemical Engineering, UTSA
9:10 am	<i>Understanding Androgen Receptor Regulation in Prostate Cancer</i> Elizabeth Wasmuth, Ph.D. Assistant Professor, Biochemistry & Structural Biology, Mays Cancer Center at UT Health San Antonio
9:20 am	<i>Multi-scale Multi-omics Cancer Modeling to Predict Tumor Growth and Cell Migration</i> Yusheng Feng, Ph.D. Professor, Mechanical Engineering, UTSA
9:30 am	<i>Targeting Tumor Evolution</i> Reuben Harris, Ph.D. Professor & Chairman, Biochemistry & Structural Biology, Howard Hughes Medical Institute investigator, Mays Cancer Center at UT Health San Antonio
9:40 am	<i>Computational Modeling and Simulation of Collective Cell Migration</i> Xiaowei Zeng, Ph.D. Associate Professor, Mechanical Engineering, UTSA
9:50 am	Morning Break
10:00 am	POPULATION SCIENCE AND PREVENTION PROGRAM PRESENTATIONS <i>The rise of obesity mediated endometrial cancer in South Texas and the US: Underlying mechanisms of epigenetics and disruption of cell-cell communication</i> Nameer Kirma, Ph.D. Associate Professor, Molecular Medicine, Mays Cancer Center at UT Health San Antonio
10:10 am	<i>Anthropology and Cancer: The Human Experience</i> Jill Fleuriet, Ph.D. Professor, Anthropology and Associate Dean (Honors College and College of Liberal and Fine Arts), UTSA
10:20 am	<i>The Institute for Health Promotion Research: Addressing the South Texas Cancer Burden</i> Rebecca Jones, Ph.D. Assistant Professor, Population Health Sciences, Assistant Director, Community Outreach & Engagement, Mays Cancer Center at UT Health San Antonio
10:30 am	<i>Culturally-Tailored Entertainment-Education for Health Promotion</i> Kim Kline, Ph.D. Professor, Communications, UTSA
10:40 am	<i>Inferring Ancestral Admixture of Hispanic Population in South Texas Using Whole Exome-seq Data</i> Yidong Chen, Ph.D. Professor, Population Health Sciences, Director, Biostatistics and Bioinformatics Shared Resource, Mays Cancer Center at UT Health San Antonio

10:50 am	<p><i>Building a Healthy Temple Cancer Prevention Program</i> Meizi He, Ph.D. Professor, Public Health, UTSA</p>
11:00 am	<p>EXPERIMENTAL AND DEVELOPMENTAL THERAPEUTICS PROGRAM PRESENTATIONS <i>Development of Novel Therapeutics for Primary Brain Tumors</i> Andrew Brenner, M.D., Ph.D. Professor, Medicine, Division of Hematology/Oncology, Program Leader, Experimental and Developmental Therapeutics Program, Mays Cancer Center at UT Health San Antonio</p>
11:10 am	<p><i>A Novel Therapeutic Target for the Treatment of Chemotherapy-Induced Peripheral Neuropathy</i> Hyoung-gon Lee, Ph.D. Associate Professor, Neuroscience, Developmental and Regenerative Biology, UTSA</p>
11:20 am	<p><i>Connexin Channels and Purinergic Signaling in Breast Cancer Metastasis and Therapeutic Application</i> Jean Jiang, Ph.D. Professor, Biochemistry & Structural Biology, Mays Cancer Center at UT Health San Antonio</p>
11:30 am	<p><i>Gold Nanoparticles for Improved Cancer Therapies: Radiation Enhancement and Photothermal Heating</i> Kathryn (Katie) Mayer, Ph.D. Associate Professor, Physics and Astronomy, UTSA</p>
11:40 am	<p><i>Targeting Epigenetic and Genetic Modifiers for Treating Cancers</i> Manjeet Rao, Ph.D. Professor, Cell Systems and Anatomy, Program Leader, Experimental and Developmental Therapeutics Program, Mays Cancer Center at UT Health San Antonio</p>
11:50 am	<p><i>Optical Tools for Cancer Research: Photoacoustic Tomography and Label-free Biosensing</i> Jing Yong Ye, Ph.D. Professor, Biomedical Engineering and Chemical Engineering, UTSA</p>
12:00 pm	<p><i>Design, Synthesis and Structure-Activity Relationships of Small Molecule ER- Agonists for Glioblastoma (GBM) Therapies</i> Stanton F. McHardy, Ph.D. Associate Professor, Chemistry, UTSA Director, Center for Innovative Drug Discovery</p>
12:10 pm- 1:30 pm	<p>LUNCH/POSTER SESSION (Denman Room, SU 2.01.28/Foyer)</p>
1:30 pm- 2:30 pm	<p>BREAKOUT SESSIONS Cancer Development and Progression Program (Denman Room, SU 2.01.28) Experimental and Developmental Therapeutics Program (Mesquite Room, SU 2.01.21) Population Science and Prevention Program (Pecan Room SU 2.01.26)</p>
2:45 pm	<p>POSTER AWARD CEREMONY (Denman Room, SU 2.01.28) Ruben A. Mesa, M.D., F.A.C.P. Executive Director, Professor, Department of Medicine, Division of Hematology/Oncology, Mays Cancer Center at UT Health San Antonio Robin Leach, Ph.D. Associate Director, Education, Professor, Cell Systems & Anatomy, Mays Cancer Center at UT Health San Antonio</p>
3:00 pm	<p>CLOSING REMARKS Ruben A. Mesa, M.D., F.A.C.P. Executive Director, Professor, Department of Medicine, Division of Hematology/Oncology, Mays Cancer Center at UT Health San Antonio</p>

SPEAKER BIOS

Ruben A. Mesa, M.D., F.A.C.P.

Executive Director, Professor, Department of Medicine, Division of Hematology/Oncology
Mays Cancer Center at UT Health San Antonio



Dr. Mesa serves as the executive director of the Mays Cancer Center, one of only four National Cancer Institute-designated Cancer Centers in Texas. Dr. Mesa is internationally renowned expert on myeloproliferative neoplasms (MPNs), a group of bone marrow disorders that often lead to leukemia. He has been the principal investigator or co-principal investigator of more than 100 clinical trials and co-led the research teams leading to the FDA's approval of 4 drugs including ruxolitinib, fedratinib, ropegylated interferon, and pacritinib. Dr. Mesa earned his Bachelor of Science degrees in nuclear engineering and physiology, with minors in radiation biophysics and bioengineering, from the University of Illinois at Urbana-Champaign. He received his medical degree, completed his residency in internal medicine and fulfilled his fellowship in hematology/medical oncology from the Mayo Graduate School at the Mayo Clinic College of Medicine in Rochester, Minnesota. He is a fellow of the American College of Physicians and is certified by the American Board of Internal Medicine in internal medicine and medical oncology. Dr. Mesa has been

elected to the boards of the American Association of Cancer Institutes and is an officer of the board of the Leukemia and Lymphoma Society.

Jaclyn L. Shaw, M.S.

Interim Vice President for Research, Economic Development, and Knowledge Enterprise
Associate Vice President for Strategic Research Initiatives and Development, The University of Texas at San Antonio (UTSA)



Jaclyn L. Shaw is the Interim Vice President for Research, Economic Development and the Knowledge Enterprise and Associate Vice President for Strategic Research Initiatives at The University of Texas at San Antonio (UTSA). Jaclyn is responsible for the leadership and oversight of strategic research development efforts within the Office of the Vice President for Research, Economic Development and the Knowledge Enterprise (REDKE). Jaclyn serves as UTSA's liaison for external research and development (R&D) partnerships with government agencies, research nonprofits, national laboratories, and private corporations. She leads federal relations, proposal development, faculty development, internal seed investments and research marketing and communications.

From 2013 to current, Jaclyn has served in various roles at UTSA, including Chief Operating Officer with the Cybersecurity Manufacturing Innovation Institute, Assistant Vice President for Strategic Initiatives and Research Partnerships and the

Director for Research Support within the REDKE. Major responsibilities include operational planning and partnership development efforts for the Cybersecurity Manufacturing Innovation Institute (CyManII). She also serves as REDKE's advisor to the National Security Collaboration Center (NSCC) and the School of Data Science, in support of the university's expansion as an Urban Serving University in San Antonio, Texas.

Prior to joining UTSA in 2013, Jaclyn served in multiple roles (2011-2013) within MedStar Health, the mid-Atlantic's largest healthcare system. She was responsible for operational management for the public health arm of MedStar St. Mary's Hospital. As a means to fund major initiatives within the system, Jaclyn secured funding from government and private sector partners for public health programming, capital projects and health information technology.

Before joining MedStar, Jaclyn acted as an Emergency Manager (2008-2011) in southern Maryland and held the position of Chair for the Tri-County Homeland Security Council for the Maryland Emergency Management Agency (MEMA). She led emergency joint operations, providing financial and programmatic support for fire, police and emergency medical services. Jaclyn obtained a Bachelor of Arts in Public Administration from the University of Hawaii, a Master of Science degree in Integrated Homeland Security Management and a Certificate in Security Assessment and Management from Towson University (University System of Maryland).

Feng Chun Yang, M.D., Ph.D.

Professor, Cell Systems & Anatomyn, Mays Cancer Center at UT Health San Antonio



The goal of my research is to elucidate the role of epigenetic regulation in normal and malignant hematopoiesis and hematopoietic stem cell biology. As an independent PI since 2005, I have been investigating the role of tumor suppressor gene NF1 in neurofibromatosis type I disease pathophysiology. Since 2010, my laboratory research has been focused on exploring the role of several novel genetic lesions in the multi-step pathogenesis of myeloid malignancies and to clarify their underlying cellular and molecular mechanisms with specific interest in ASXL1/2 and NF1 gene alterations. I have reported that deficiency of Asxl1 or Tet2 leads to myeloid malignancies in mice. Recently, I have developed several mouse models with Asxl1 and Asxl2 alterations, including Asxl1 and Asxl2 deletion and truncation. We also found that alterations of ASXL1 in the niche cooperates with ASXL1 deficient HSC/HSPCs to accelerate disease progression. Since joining the faculty of the Mays Cancer Center, U.T. Health Science Center at San Antonio, I have been actively pursuing research utilizing these models to unravel the mechanisms underlying leukemogenesis. I also actively collaborate with multi-laboratories to strengthen our research. I continuously publish in peer-reviewed journals, including Blood, Cell, PNAS, Immunity, JCI, Nature Communications, Hum Mol Genet, Leukemia, Science Advances, Peds Res, Bone, JBMR, Stem Cell Reports, and Scientific Reports.

Maria Gonzalez Porras, Ph.D.

Assistant Professor (Jan. 2023), Biomedical Engineering and Chemical Engineering, UTSA



Dr. Maria Gonzalez Porras is an Assistant Professor of Biomedical Engineering at The University of Texas at San Antonio (UTSA), where she leads research on adipocyte, the main cell type found in adipose tissue (fat), to learn how fat functions under normal and pathological conditions. She received her B.S. in Biomedical Engineering from the School of Engineering of Antioquia (Colombia), in 2011, and a Ph.D. in Biomedical Engineering from the Mayo Clinic, Rochester MN, in 2017 under the guidance of Drs. Carlos Mantilla and Gary Sieck, in the Cell and Regenerative Physiology Laboratory. Following a 1-year post-doctoral fellowship at the Mayo Clinic with Dr. Sieck, she joined Dr. Eric Brey's Laboratory at UTSA for 4-years where she developed strategies to target cells using nanotechnology and study adipocyte microenvironment. She has been the recipient of prestigious awards including the NIH F32 Kirschstein National Research Service Award. She is a member of the Biomedical Engineering Society and the American Society for Matrix Biology.

Elizabeth Wasmuth, Ph.D.

Assistant Professor, Biochemistry and Structural Biology, Mays Cancer Center at UT Health



Dr. Elizabeth Wasmuth is a tenure-track Assistant Professor who joined the department of Biochemistry and Structural Biology at UTHSA in May 2022. She has a long-standing interest in how macromolecular protein complexes recognize and modify their nucleic acid ligands to elicit biological outcomes. For her doctoral work in the lab of Dr. Christopher Lima at Memorial Sloan Kettering Cancer Center, she applied a combination of biochemistry and X-ray crystallography to discover how the essential multisubunit RNA turnover complex called the RNA exosome coordinates its various activities to commit to either RNA trimming versus decay. She completed her post-doctoral training under the joint mentorship of Dr. Charles Sawyers at Memorial Sloan Kettering Cancer Center and Dr. Sebastian Klinge at the Rockefeller University, where she pioneered means to isolate and biochemically characterize active, full-length AR, and, using cryo-electron microscopy, defined how intrinsic flexibility of AR dimers contributes to an enhanced repertoire of AR binding sites in prostate cancer. The primary focus of her research program is to uncover mechanisms of androgen receptor function and regulation, with the ultimate goal of discovering more effective AR inhibitors.

Yusheng Feng, Ph.D.

Professor, Mechanical Engineering, UTSA



Dr. Feng is a Professor of Mechanical and Biomedical Engineering at UTSA, and former Director and co-Founder of NSF-Sponsored Center for Simulation Visualization and Real-Time Prediction. His research areas are computational bioengineering, mathematical modeling, computer simulation, and scientific visualization. Prof. Feng received his Ph.D. in computational mechanics from the UT Austin. He earned two Master's degrees in mechanical engineering and applied mathematics before his doctoral research. Prof. Feng has been working on computational bioengineering and biomedicine for last 20 years. The NIH/K25 career award assisted him making the transition to the computational biomedical areas. Prof. Feng received numerous awards including Research Excellence Award in Research and Innovator of the Year from UTSA. Currently, his major interest includes multiscale modeling of biological systems and large system simulation. He is also affiliated with Center for Computational Oncology in Oden Institute for Computational Engineering and Science at UT Austin.

Reuben Harris, Ph.D.

Professor & Chairman, Biochemistry & Structural Biology, Howard Hughes Medical Institute investigator, Mays Cancer Center at UT Health San Antonio



Reuben Harris is an investigator of the Howard Hughes Medical Institute (HHMI) and chair of the Biochemistry and Structural Biology department at University of Texas Health San Antonio. He received his B.S. (1993) and Ph.D. (1997) degrees from the University of Alberta and performed postdoctoral work at Baylor College of Medicine (1997-1998), Yale University (1998), and Cambridge University (1998-2003). He joined the University of Minnesota as an Assistant Professor in 2003 and was promoted to Associate Professor with Tenure in 2008 and to Full Professor in 2013. In 2022, Dr. Harris moved his laboratory to University of Texas Health San Antonio.

Dr. Harris has received numerous grants and awards, including a Searle Scholarship, membership to the American Academy of Microbiology, NIH Merit Award, a Distinguished McKnight University Professorship, and the KT Jeang Prize. In 2015, he was also appointed as a Howard Hughes Medical Institute Investigator. Dr. Harris is an Associate Editor for *Science Advances* and an Editorial Board Member for *Journal of Biological Chemistry*, *Journal of Virology*, and *Cancer Research*. He has published over 200 manuscripts, contributed to 13 patent applications, and co-founded a cancer therapeutics company. Dr. Harris's scientific passion is elucidating mechanisms of mutation and establishing relevance to human biology and disease. As a doctoral student, he discovered a novel recombination-dependent mutation process operative in stationary-phase bacteria with implications for antibiotic resistance and microbial evolution. As a postdoctoral fellow, he helped solve an immunology Rosetta stone by discovering the DNA cytosine deaminase activity of AID and proposing a DNA deamination model for antibody gene diversification. Also as a postdoctoral fellow, he discovered the DNA cytosine deaminase activity of several APOBEC family members and, during the transition to faculty, elucidated a new mechanism of antiviral immunity by demonstrating APOBEC3G-catalyzed retroviral cDNA hypermutation. As a Principal Investigator, Dr. Harris has become known for his work on APOBEC enzymes in antiviral immunity. This body of work has shed light on fundamental mechanisms of antiviral immunity and yielded new strategies for drug development.

In recent years, Dr. Harris's virology studies have also enabled a major breakthrough in cancer research. His group found that APOBEC3 enzymes are responsible for a large proportion of mutations in breast, head/neck, lung, bladder, cervical, and other cancers. Independent work has confirmed these results and indicated that "APOBEC mutagenesis" far exceeds most other sources of mutations in cancer, including those attributable to smoking and UV rays. These breakthroughs have created new opportunities for cancer diagnosis, prognosis, and treatment by targeting tumor evolvability. One of his other passions is training and mentoring the next-generation of scientists, and he has trained a multitude of students and postdoctoral fellows over his career. Importantly, all of these trainees have succeeded in obtaining independent positions in academia or industry.

Xiaowei Zeng, Ph.D.

Associate Professor, Mechanical Engineering, UTSA



Dr. Xiaowei Zeng is currently an Associate Professor at the Department of Mechanical Engineering at The University of Texas at San Antonio. He received his Ph.D. in Mechanical and Aerospace Engineering from The George Washington University in 2008. From 2008 to 2011, he worked as a post-doctoral research fellow at the University of California at Berkeley. He joined The University of Texas at San Antonio as an Assistant Professor in 2011. His research focuses on computational mechanics with applications to cell mechanics and bone mechanics and he has published more than 45 peer-reviewed journal articles. He has a broad background in computational mechanics, with specific training and expertise in Finite Element methods, Meshfree methods, Molecular Dynamics simulation, and Multiscale methods. He has developed cell models and cell-cell/substrate interaction models to study cell contact and adhesion, cell spreading, cell rolling in fluid channel, collective cell migration, epithelial wound healing etc. He received funding from NSF and NIH.

Nameer Kirma, Ph.D.

Associate Professor, Molecular Medicine, Mays Cancer Center at UT Health San Antonio



Dr. Nameer Kirma focused his postdoctoral work on breast cancer research at Emory University. As faculty at the UT Health San Antonio, Dr. Kirma's research focuses on the mechanisms underlying endometrial malignancy and disease, as part of his interest in women's health. Specifically, the role of cell-cell communication and epigenetics in obesity-mediated endometrial cancer is investigated. Dr. Kirma is also the director of the institutional Bioanalytics and Single-cell Core facility at UTHSA. In addition, he is the co-founder of Hera Biotech, developing non-invasive diagnostics for endometriosis, which is a major cause of infertility in women.

Jill Fleuriet, Ph.D.

Professor, Anthropology and Associate Dean (Honors College and College of Liberal and Fine Arts), UTSA



Jill Fleuriet (PhD, Anthropology, Stanford University) is Professor of Anthropology, Associate Dean of the Honors College, and Associate Dean for Faculty Success in the College of Liberal and Fine Arts at The University of Texas at San Antonio. A cultural and medical anthropologist, Fleuriet researches health, place-making, care, and gender in the U.S.-Mexico borderlands. Her earlier work focused explaining the Latina Paradox. Her recent book, *Rhetoric and Reality on the U.S.-Mexico Border* (2021), challenges common misunderstandings about our southern borderlands, tracing how and why narratives persist and offering an alternative based on the lives of leaders in the Rio Grande Valley. Fleuriet's current research revolves around concepts, practices, and experiences of care. Her emerging research interests are liver cancer and care (clinical, self, kin, professional) in the Rio Grande Valley. She is especially interested in how ideas about the body and cancer shape the kind of care patients experience and the health impacts of that care. Fleuriet is an award-winning teacher and administrator. She received the University of Texas System Regents' Outstanding Teaching Award (2017); UTSA's President's Distinguished Achievement Awards for Faculty Mentoring (2021), University Service (2019), Community Engagement (2016), and Excellence in Teaching (2015); and the Richard S. Howe Outstanding Undergraduate Teaching Award (2019). She was named a Fellow of the University of Texas System Academy of Distinguished Teachers in 2018.

Awards for Faculty Mentoring (2021), University Service (2019), Community Engagement (2016), and Excellence in Teaching (2015); and the Richard S. Howe Outstanding Undergraduate Teaching Award (2019). She was named a Fellow of the University of Texas System Academy of Distinguished Teachers in 2018.

Rebecca Jones, Ph.D.

Assistant Professor, Population Health Sciences, Assistant Director, Community Outreach and Engagement, Mays Cancer Center at UT Health San Antonio



Rebecca Jones, PhD is an Assistant Professor and serves as the Assistant Director of the Institute for Health Promotion Research which is part of the Department of Population Health Sciences in the School of Medicine at UT Health San Antonio (UTHSA). She is also the Assistant Director for the Mays Cancer Center's (MCC) Community Outreach and Engagement (COE). She has over ten years of experience designing, implementing, and coordinating community programs and clinical research studies. The projects she previously and currently lead leverage evidence-based best practices and contribute to the development of new strategies for improving health outcomes and advancing health equity for individuals from underserved and historically marginalized communities. Jones received her doctorate from The University of Texas at San Antonio in applied demography with a concentration in population health and currently, leads the "For Your Health" program which leverages the strengths of Community Health Workers to improve patient care coordination for the UT Health San Antonio primary care Medicaid, low-income, uninsured, and Medicare patient populations. Additionally, she spearheaded the establishment and management of community and clinical linkages between various health systems and the San Antonio Health Department. As COE assistant director, she works closely with community organizations to ensure the MCC research and programming are addressing the needs of our South Texas community. Overall, her work focuses on chronic disease and cancer prevention, healthcare access and utilization, and community engagement.

Kim Kline, Ph.D.

Professor, Communications, UTSA



Dr. Kline (Ph.D. University of Georgia, 1996) is a Full Professor in the Department of Communication at The University of Texas at San Antonio. She conducts research on culturally-tailored health campaigns and entertainment-education, the popular media health environment, and critical-cultural approaches to health/inequities. Among other research projects, she has collaborated with health professionals at the Baylor University Dan L. Duncan Comprehensive Cancer Center Office of Community Outreach and Engagement (Houston, TX) as a consultant for applied public health initiatives including projects to develop and evaluate (1) an interactive computer-based telenovela to help Hispanic/Latino populations manage their diabetes, (2) short point-of-care patient education videos to prepare Hispanic, Black, and Caucasian parents/guardians to accept physician vaccine recommendations, (3) health promotion initiatives to reduce adolescent e-cigarettes, and (4) applied theater interventions to increase awareness of cancer screening among racial/ethnic medically underserved minorities (Black, Hispanic, Vietnamese) (the latter three are CPRIT funded initiatives). For these initiatives,

Dr. Kline brought her expertise in interdisciplinary theory and research methodology including social scientific theory relevant to crafting messages in terms of measurable attitudinal and behavioral outcomes, various theoretical perspectives relevant to addressing cultural variation in health understandings, and expertise in both qualitative and quantitative methodologies used in planning and evaluating the effectiveness of the interventions.

Yidong Chen, Ph.D.

Professor, Population Health Sciences, Director, Biostatistics and Bioinformatics Shared Resource, Mays Cancer Center at UT Health San Antonio



Yidong Chen received his B.S. and M.S. degrees in Electrical Engineering from Fudan University, Shanghai, China, and Ph.D. in Imaging Science from Rochester Institute of Technology, Rochester, NY. From 1986, he joined the Department of Electronic Engineering of Fudan University, and he was an exchange/visiting scholar at the Department of Computer Engineering, Rochester Institute of Technology from 1988-1989. From 1995 to 1996, He joined Hewlett Packard Company as a research engineer, specializing in digital image processing. In May 1996, he joined the microarray technology development effort at the National Human Genome Research Institute (NHGRI), National Institutes of Health (NIH) as a special expert, staff scientist, and associate investigator, and in 2006 he joined Genetics Branch at National Cancer Institute (NCI) as a staff scientist. Currently, he is a professor at the Department of Population Health Sciences at the University of Texas Health San Antonio, and the director of the Computational Biology and Bioinformatics at Greehey Children's Cancer Research Institute. Dr. Chen authored and co-authored about 240 peer-reviewed publications in the area of bioinformatics methods for

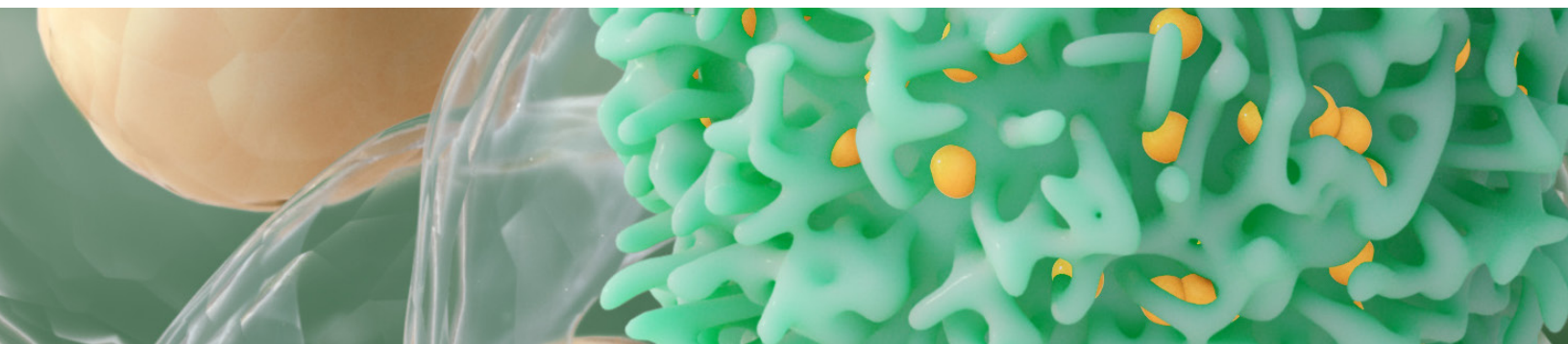
NGS data analysis, gene expression analysis, gene regulation networks, integrative genomic data analysis, genetic data visualization, and lately Deep Learning method development for translational research.

Meizi He, Ph.D.

Professor, Public Health, UTSA



Dr. He is currently a full Professor at UTSA. Her broad background training is in medicine and public health nutrition. She has extensive research experience in designing, conducting and supervising original research. Her research focuses on obesity and chronic diseases prevention and management among the predominately Hispanic populations. Dr. He has initiated a series of faith-based health promotion research projects under the umbrella of "Building a Health Temple". This line of research inquiry has been funded by a number of agencies including the Robert Wood Johnson Foundation, the San Antonio Life Science Institute, the Baptist Health Foundation, Blue Cross Blue Shield of Texas, the Cancer Prevention Research Institute of Texas (CPRIT) and American Diabetes Association. Dr. He is currently conducting a multisite faith-based cancer prevention intervention study among the medically underserved communities in the Rio Grande Valley and Bexar County. Throughout her career, Dr. He has collaborated with inter-disciplinary researchers, faith-based communities, medical community, as well as widely disseminated her research findings through peer-reviewed journals.



Andrew Brenner, M.D., Ph.D.

Professor, Medicine, Program Leader, Experimental and Developmental Therapeutics Program, Mays Cancer Center at UT Health San Antonio



I have worked in experimental therapeutics with a focus on treatment of neuro-oncological and breast malignancies for 12 years. My earliest work focused on defining the role of p16(CDKN2A) in breast tumorigenesis and immortalization. After completing my clinical training in medical oncology, my laboratory efforts have shifted to developmental therapeutics in both breast and brain neoplasms. In regards to brain neoplasms, my work focused on alternate means of targeting the vasculature in glioblastoma that was not dependent on angiogenic signals directly. This led to a collaboration with Vascular Biogenics in which my laboratory established the activity of the anti-endothelial gene therapy, VB111, in preclinical models of GBM (for which I hold a patent but no financial stake). I was then principal investigator of the first in human study for advanced malignancies with this novel biologic which determined the recommended phase 2 dose, as well as a subsequent dual phase I/II study in recurrent GBM that showed a marked improvement in survival compared to historical controls. I served on the steering committee for the pivotal GLOBE trial, as well as led trial accrual across international sites. While the GLOBE study was negative, subsequent findings suggest bevacizumab (bev) interferes with VB-111 transgene expression, and a neo-adjuvant study is ongoing to address this. Given the role of hypoxia in antiangiogenic resistance, we also began working with hypoxia activated prodrug evofosfamide (Evo) for bev refractory GBM. Our team was able to establish a phase 2 dose with bevacizumab as both safe and promising based with early signals of efficacy. This led to our recently completed multicenter phase 2 trial of Evo with Bev at Bev progression, including characterization of hypoxia with 18F-MISO PET and metabolomics. We demonstrated a PFS-4 on Evo-Bev of 31%, a statistically significant improvement over the historical rate of 3%. We also found baseline hypoxic volume to correlate with PFS (HV; HR=1.67, P=0.009) and OS (HR=1.711, p=0.01), with subgroup analysis trending toward a decrease in HV (baseline to day 28) correlating with longer OS and PFS. I have been involved in the development of a number of new therapeutics. We developed a novel form of radiation therapy utilizing a unique chelator (BMEDA) to load nanoliposomes with beta emitting theragnostic 186Rhenium. The final investigational product, RNL186, is currently in a multicenter phase 1 study for which I am PI, with plans to progress to phase 2 in the coming months. I led not only the preclinical evaluation, but the entire IND enabling process including authoring toxicology studies, collaborating with the Nanotechnology Characterization Laboratory at the NCI for CMC evaluation, as well as authoring the clinical documents. In breast cancer, due to the observations of poor outcomes in our majority obese breast cancer population, we began collaborating with Linda deGraffenried at UT Austin on defining mechanisms for obesity induced endocrine resistance in hormone receptor positive breast cancer. More recently, we have been working on establishing FASN inhibition as a therapeutic strategy for endocrine resistant breast cancer. I am a clinical investigator and PI on multiple breast and neuro-oncology clinical trials including those with breast cancer brain metastases (Tucatinib[HER2Climb], ANG1005, Sacituzumab Govitecan[S2007], etc), and I also currently am Study Chair of two cooperative group studies (S1906 and S2007). I have been coleader for several years of our Experimental and Developmental Therapeutics Program of our recently renewed P30, and I have participated on numerous clinical advisory boards for putative neuro-oncologic drugs. I have mentored numerous scientists at all levels from undergraduate through post-doctoral.

Hyung-gon Lee, Ph.D.

Associate Professor, Neuroscience, Developmental and Regenerative Biology, UTSA



Dr. Hyung-gon Lee is an Associate Professor in the Department of Neuroscience, Developmental and Regenerative Biology at The University of Texas at San Antonio. Specializing in neurodegenerative disease research, Dr. Lee has published numerous scientific articles on Alzheimer's disease and other neurodegenerative disorders. He also serves on the editorial board for multiple internationally recognized scientific journals. Dr. Lee's research is primarily focused on the molecular pathogenic mechanism of Alzheimer's disease. One of the projects in his lab is the pathological role of aberrant cell cycle activation in neurons as a key molecular mechanism of neurodegeneration. These studies on neurodegenerative disease led him to develop a novel hypothesis on the pathogenic mechanism for chemotherapy-induced peripheral neuropathy, a devastating consequence of cancer treatment regimens, and the ongoing study in his lab may provide a clue for the development of therapeutics for both Alzheimer's disease and peripheral neuropathy.

Jean Jiang, Ph.D.

Professor, Biochemistry & Structural Biology, Mays Cancer Center at UT Health San Antonio



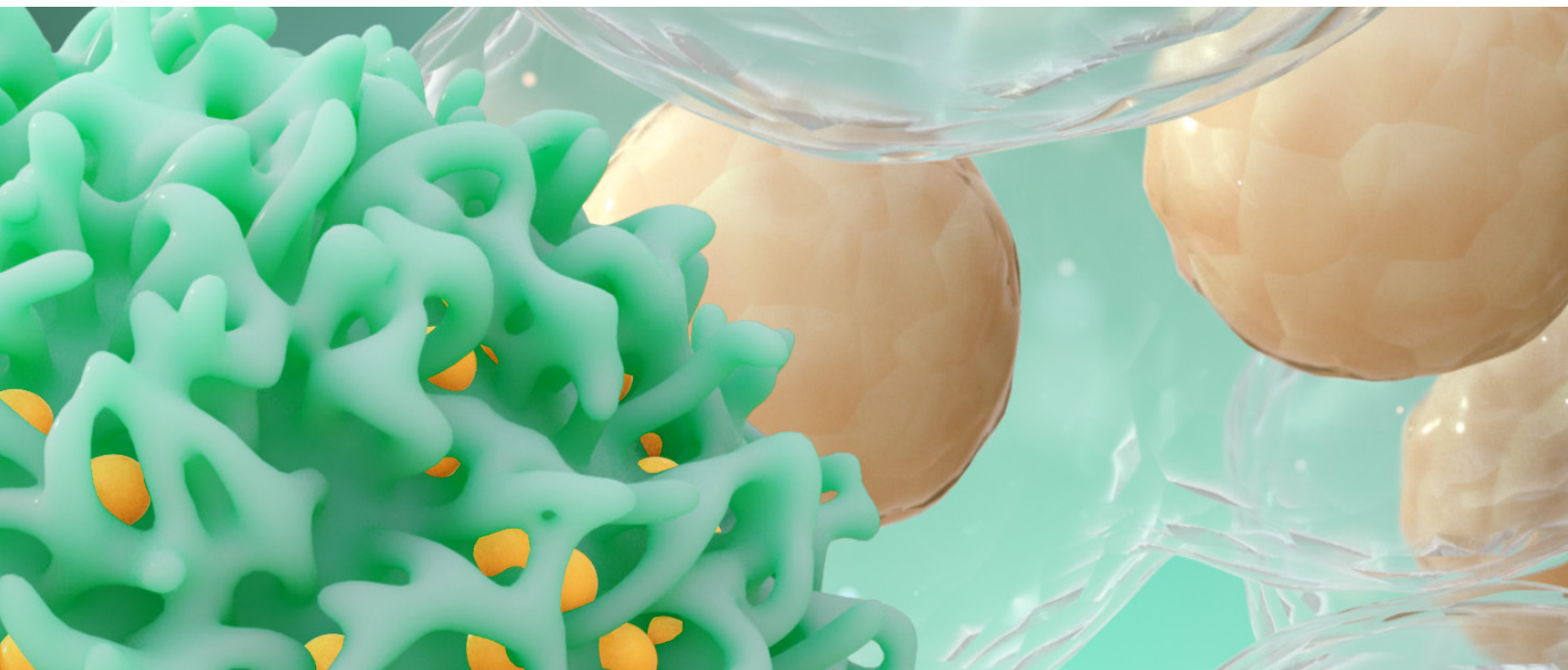
Dr. Jiang received her PhD in Biochemistry from the State University of New York at Stony Brook in Biochemistry and her postdoctoral training at Harvard Medical School in Cell Biology. She has been a faculty member at UT Health San Antonio since 1997. Her major research projects focus on connexin channels, and cell signaling mechanism in various tissues and cells and development of therapeutics in treating several diseases. Dr. Jiang has published more than 160 papers and has multiple patents published and issued. Her research has been funded by multiple federal and private funding agencies. She has received the UT Health President Distinguished Senior Scholar Award and is AAAS Fellow.

Kathryn (Katie) Mayer, Ph.D.

Associate Professor, Physics and Astronomy, UTSA



Kathryn (Katie) Mayer is an Associate Professor in the Department of Physics and Astronomy at The University of Texas at San Antonio, where she has been a faculty member since 2014. Her group studies metallic nanoparticles and their biomedical applications. Katie is originally from Cleveland, Ohio and completed her bachelor's and Ph.D. in Physics at Rice University in Houston, TX. After that, she did postdoctoral research in Chemistry at UT Austin and at Tufts University before joining UTSA. At UTSA, Katie and her research group have carried out several projects on topics relating to cancer nanomedicine, including (1) the functionalization and characterization of antibody-conjugated nanoparticles, (2) gold nanoparticles for dose enhancement in radiation therapy, and (3) photothermal heating of gold nanorods for potential therapeutic applications. Katie's research has been funded by the NIH, DOD (ARO), ConTex, the San Antonio Life Sciences Institute, and the San Antonio Medical Foundation. Katie also teaches Physics and Biophysics at UTSA and enjoys working with students at all levels.



Manjeet Rao, Ph.D.

Professor, Cell Systems and Anatomy, Program Leader, Experimental and Developmental Therapeutics Program, Mays Cancer Center at UT Health San Antonio



As a graduate student and postdoctoral fellow, I received training in multiple research fields including endocrinology, immunology, molecular biology and cancer biology. My training has led me to a unique understanding of how delicately cellular homeostasis is balanced and how a small perturbation can corrupt a normal physiological state into a disease state. As a graduate student, I developed a screening procedure to test anti-inflammatory drugs. Our study facilitated the identification of compounds that could control the overactive secretion of TNF- α from immune cells and provided a potential target to develop new drugs for inflammatory diseases (Int. J. of Immunopharm, > 175 citations). During my tenure in Dr. Miles Wilkinson's laboratory at M. D. Anderson Cancer Center, I generated a novel tissue-specific in vivo RNAi approach, which was a groundbreaking study as for the first time we showed that virtually any gene of interest can be silenced using a tissue-specific in vivo RNAi approach (Genes and Dev. >130 citations). I was also instrumental in discovering the RhoX gene family, a large cluster of homeobox genes on the X chromosome (Cell, >200 citations). After joining UTHSA in 2007, I focused

on developing new, more efficacious and less toxic treatments for adult and childhood cancers. My laboratory has made many seminal discoveries, which are published in top-tier journals including PNAS, Nature Communications and Science Advances; and are widely cited. In addition, our work has resulted in two clinical trials. I have been consistently funded by NIH for the last 15 years. The overall goal of my laboratory is to develop more potent and less toxic drugs for treating adult and pediatric cancer patients. We have employed unbiased high throughput genomewide functional screens as well as small molecule inhibitor screens to identify novel targets that may play critical roles in breast cancer, medulloblastoma, and osteosarcoma growth, progression and drug sensitivity. Our research endeavors have resulted in clinical development of anti-depressants for treating breast cancer and recurrent glioblastoma patients. These studies are perfect examples of bench to bedside initiative. In addition, we are also actively engaged in understanding the role of RNA epigenetics, which has just begun to capture the imagination of scientific community, in cancer growth and progression. We were the first group to design novel algorithms that can identify transcriptome wide methylation as well as differential RNA methylation in normal and disease condition. Recently, in a groundbreaking study, we showed that writers, erasers and readers of RNA methylation cross-talk with each other to maintain a level of RNA methylation that is critical for the stability of key pro-growth/proliferation-specific genes and any pro-tumorigenic stimulus that perturbs that balance leads to uncontrolled expression/activity of those genes, resulting in tumor growth, angiogenesis, and progression. Importantly, we discovered that RNA methylation machinery may play a critical role in osteosarcoma growth, lung metastasis and therapeutic resistance. In addition to research, I am deeply involved in the teaching and training mission at U.T. Health San Antonio. During my tenure as a faculty, I have mentored 17 pre/post-doctoral students/fellows and 2 junior faculty. I serve in a leadership role as a Discipline Director for the Cancer Biology (CB) track of the multidisciplinary graduate program at UTHSCSA. I also serve as a Co-Leader of the Experimental and Developmental Therapeutics program at Mays Cancer Center.

Jing Yong Ye, Ph.D.

Professor, Biomedical Engineering and Chemical Engineering, UTSA



Dr. Jing Yong Ye received his Ph.D. from University of Tsukuba, Japan in 1997. After a Postdoctoral Fellowship at JRCAT-ATP in the National Institute for Advanced Interdisciplinary Research in Japan, he joined University of Michigan, Ann Arbor, as a Research Scientist in 2000. In 2009, Dr. Ye moved to The University of Texas at San Antonio and currently is a Professor in the Department of Biomedical Engineering and Chemical Engineering. He also serves as the Director of the Joint BME Graduate Program of UTSA and UT Health at San Antonio. The primary focus of Dr. Ye's research is to develop cutting-edge biophotonics and nanobio-technologies to address critical issues for biomedical research and applications. He has led multiple exciting research programs, including the development of photonic crystal-based label-free bioassays, a novel optical ultrasound sensor for photoacoustic imaging, a new filtered backprojection algorithm for photoacoustic image reconstruction, fiber-optic in vivo biosensing and imaging of a multifunctional nano-device for targeted cancer drug delivery, ultrafast laser interactions with nanoparticle-targeted cancer cells, in vivo two-photon flow

cytometry, adaptive optical aberration correction in multiphoton scanning microscopy, and single-molecule fluorescence imaging and spectroscopy. His research is highly innovative and has generated 16 patents. Dr. Ye has served on review panels for federal funding agencies (NIH, NSF, and FDA), state programs, and private foundations. In addition, Dr. Ye is a co-founder of SAFEbiosense LLC and has served on the advisory board for a biotech company, and as a consultant for six companies.

Stanton F. McHardy, Ph.D.

Associate Professor, Chemistry, UTSA | Director, Center for Innovative Drug Discovery

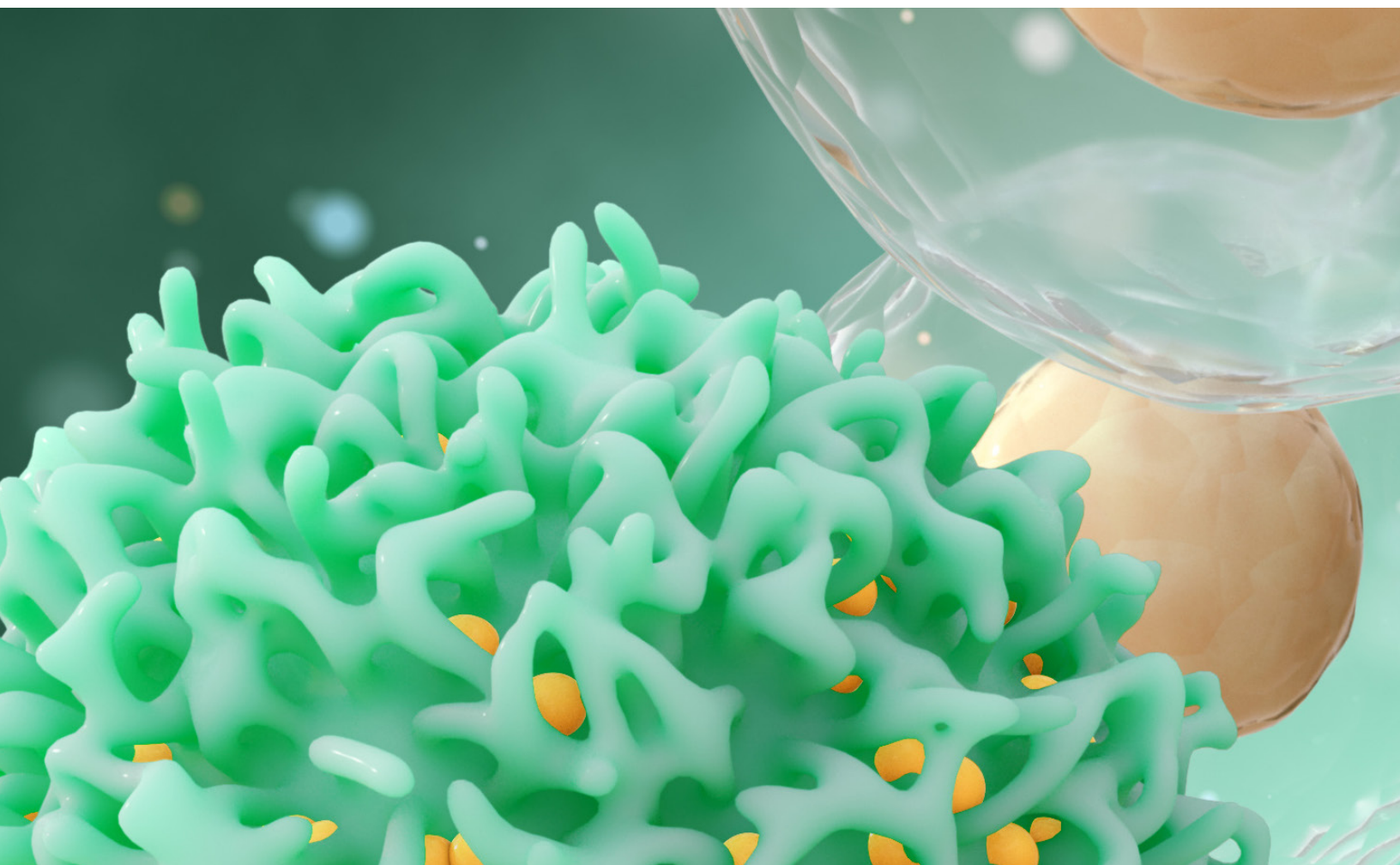


Dr. Stan McHardy is the director of the Center for Innovative Drug Discovery and Associate Professor in the Department of Chemistry. After receiving his Ph.D. in organic chemistry at the University of Utah in 1996, Stan served as a Pfizer Post-Doctoral Research Fellow. Dr. McHardy has over 25 years' experience in the pharmaceutical R&D and academic areas of neuroscience, cancer and infectious disease drug discovery, medicinal chemistry and synthesis and process chemistry.

From 1996 to 2006, Stan worked in the department of Neuroscience Medicinal Chemistry at Pfizer Global Research in Groton, Connecticut. In his roles there, Stan led project teams toward the discovery of several clinical drug candidates in the areas of addiction, schizophrenia, Alzheimer's and ADHD and managed multi-discovery project teams as Associate Director of Neuroscience Medicinal Chemistry.

Dr. McHardy joined Southwest Research Institute in 2006 and served as the Assistant Director of the division and was responsible for developing a strategy that ensured continued growth of exploratory and discovery research programs in synthesis and medicinal chemistry.

Dr. McHardy joined UTSA in July 2012 as the first director of the Center for Innovative Drug Discovery, a joint research effort between UTSA and UT Health SA. In his capacity as director, Stan has established a state-recognized core medicinal chemistry/drug discovery facility on the campus of UTSA and developed state and national research collaborations with both academic and private industry partners, securing >\$19M in collaborative extramural funding to date. Currently, the private, state and federally funded collaborative research programs in Dr. McHardy's CIDD labs are focused on various small molecule drug discovery approaches to cancer, psychotherapeutic and neurodegenerative diseases, non-opioid pain and infectious diseases. Dr. McHardy has >50 peer reviewed publications in the area of synthesis, medicinal chemistry and drug discovery and is inventor or co-inventor on 33 patents.



MAYS CANCER CENTER PROGRAMS

CANCER DEVELOPMENT AND PROGRESSION PROGRAM (CDP)

The Cancer Development and Progression (CDP) Program is led by Patrick Sung, D.Phil. and Ratna K. Vadlamudi, Ph.D. The CDP Program focuses on laboratory-based studies of fundamental problems in cancer etiology and progression and also clinical translation of our research findings. The Program has two thematic areas: 1) Genomic Repair and Epigenetics and 2) Tumor Microenvironment. Through these foci, the CDP Program continues to make important contributions toward the MCC's goal of cancer prevention and treatment, particularly for those disproportionate in our largely Hispanic population in South Texas. The Program's Specific Aims are to: 1) Pursue basic and translational research to discover cancer-specific genome alterations, DNA repair mechanisms, and epigenetic programming that can be effectively translated to the clinic; and 2) Discover mechanisms and identify new therapeutic targets for modulating tumor metastases, paracrine signaling, immune signaling, and metabolism. CDP scientific accomplishments have resulted in several paradigm-shifting findings, high-impact publications (e.g. Nature, Cell, Molecular Cell, Nature Communications), development of novel models for defining cancer development and progression mechanisms, an antibody-based therapeutic for metastatic breast cancer, new estrogen receptor-beta agonists for enhancing tumor suppression, and small molecule inhibitors for treating endocrine therapy resistance. CDP members work closely with the Experimental and Developmental Therapeutics (EDT) Program to move research into the clinic.

EXPERIMENTAL AND DEVELOPMENTAL THERAPEUTICS PROGRAM (EDT)

The Experimental and Developmental Therapeutics (EDT) Program is led by Andrew Brenner, M.D., Ph.D. and Manjeet Rao, Ph.D. The primary focus of the EDT Program is to improve treatment of cancer through basic, translational, and clinical research. The EDT Program is the hub for clinical development of discoveries made by all members of MCC. The EDT Program members have expertise spanning experimental and developmental therapeutics – from initial target discovery, to IND regulatory approval, to early-phase clinical trials. The EDT Program members pursue this research focused on three major themes: 1) Neuro-oncology; 2) Immuno-oncology; and 3) Drug repurposing. In addition to these major themes, the EDT Program has one emerging theme: Targeted therapeutics. EDT members will advance the translational potential within these themes through the following aims: 1) Discovery of novel targets; 2) Development of new therapeutic agents and approaches; and 3) Conduct of early-phase clinical trials of novel therapies.

POPULATION SCIENCE AND PREVENTION PROGRAM (PSP)

The Population Science and Prevention (PSP) Program is co-led by Pratap Kumar, Ph.D. and Gail Tomlinson, M.D., Ph.D. The primary focus of the PSP Program is collaborative research that addresses cancer risk and prevention to develop intervention strategies. Studies are focused on our overarching goal of reducing cancer burden in our 38-county catchment area. Our emphasis has been on improving cancer screening and detection, improving access to care, and translation prevention discoveries through interventional trials. These include behavioral interventions to improve cancer outcomes, incorporating community outreach and engagement of underserved populations. PSP members have: 1) Formulated a panel of patented biomarkers for predicting recurrent risk of prostate cancer; 2) Identified epigenotypes for stratifying an endometrial cancer subtype predominantly occurring in young, obese Hispanics; and 3) Shown that exposure to aflatoxin and hepatitis C virus may cause hepatocellular carcinoma in our catchment area and other Hispanic populations. Inter- and intra-programmatic efforts have found that: 1) Yoga-based exercise and nutritional interventions can reduce circulating inflammatory cytokines, thereby enhancing survival of breast cancer patients; and 2) Texting and mobile media services help Hispanic adolescent/young adults (AYAs) quit smoking in a cost-effective manner. Through our collaborative work, we have impacted the population across our geographic area (including rural and border regions): e.g. increased identification rates of those carrying hepatitis C, and increased HPV vaccine administration, genetic risk assessment and testing, and enhanced cancer screening in genetically at-risk populations. We continue to address the disproportionate burden of cancer across the age continuum – children, AYAs, and adults – in our catchment area. Our Program's Aims are to: 1) Discover biomarkers to enhance early detection and recurrent prediction; 2) Translate evidence-based chemotherapeutic/ nutritional/behavioral strategies to interventional trials; and 3) Enhance quality of life for cancer survivors. These Specific Aims will be achieved by promoting intra- and inter-programmatic collaborations to translate findings into clinical interventions to benefit our population.

SENIOR LEADERSHIP | MAYS CANCER CENTER



Ruben A. Mesa, M.D., F.A.C.P.

Executive Director, Professor, Department of Medicine, Division of Hematology/Oncology, Mays Cancer Center at UT Health San Antonio



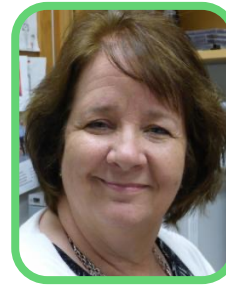
Tim Huang, Ph.D.
Deputy Director



David Gius, M.D., Ph.D.
Associate Director,
Translational Research



**Daruka Mahadevan,
M.D., Ph.D.**
Associate Director,
Clinical Research



Robin Leach, Ph.D.
Associate Director,
Education



Amelie Ramirez, Ph.D.
Associate Director,
Community Outreach &
Engagement



LuZhe Sun, Ph.D.
Associate Director,
Basic Research



Susan Padalecki, Ph.D.
Associate Director,
Research Administration



Daohong Zhou, M.D.
Associate Director,
Drug Development



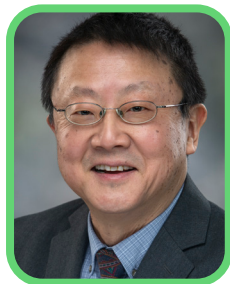
**Michael Liss, M.D.,
Ph.D.**
CTO Medical Director



Andrew Brenner, M.D., Ph.D.
Co-Leader, Experimental &
Developmental Therapeutics
(EDT) Program



Majeet Rao, Ph.D.
Co-Leader, Experimental &
Developmental Therapeutics
(EDT) Program | Deputy
Director, Greehey Children's
Cancer Research Institute



Patrick Sung, DPhil
Co-Leader, Cancer
Development &
Progression (CDP)
Program | Director,
Greehey Children's
Cancer Research Institute



Ratna Vadlamudi, Ph.D.
Co-Leader, Cancer
Development &
Progression (CDP)
Program



Pratap Kumar, Ph.D.
Co-Leader, Population
Science & Prevention
(PSP) Program



**Gail Tomlinson, M.D.,
Ph.D.**
Co-Leader, Population
Science & Prevention
(PSP) Program