Current Topics in Cancer Research

November 20, 2020
9:30 - 11A.M.

Obesity Research Institute

Texas Tech University
Office of Research & Innovation
Welcome Introduction from the Obesity Research Institute
Naima Moustaid-Moussa, Ph.D., FTOS, FAHA, ORI Founding Director, TTU, Lubbock & Jannette Dufour, Ph.D., ORI Associate Director, TTUHSC, Lubbock

Let's Talk About....Cancer Disparities & Prevention in El Paso
Jessica Calderon-Mora, Dr. PH., Instructor, Department of Molecular and Translational Medicine and Department Family and Community Medicine, TTHSC, El Paso

Changing Surgical Approach to Breast Cancer
Rakhshanda Layeequr Rahman, M.D., FRCS, FACS, Founding Executive Director of the Multi-Campus Breast Center of Excellence, TTUHSC, Lubbock

Effects of the Blockade of Monocarboxylates Transporters on Tumor Cells & Macrophages
Flavia De Sardela, M.S., Visiting Scholar and Research Aide, TTU, Lubbock

Novel Regulation of Wnt Signaling in Breast Cancer
Kevin Pruitt, Ph.D., Associate Professor, Department of Immunology and Molecular Microbiology, TTUHSC, Lubbock

Development of 3D Organoids
Annelise Nguyen, Ph.D., MBA, DABT, Professor, School of Veterinary Medicine, TTU, Amarillo

Isolation and recovery of circulating tumor cells (CTC) and CTC subpopulations
Wei Li, Ph.D., Associate Professor, Department of Chemical Engineering, TTU, Lubbock

Q&A Session
Dr. Moustaid-Moussa is professor in Nutritional Sciences and Founding Director of the TTU Obesity Research Institute. She has been leading a funded basic and integrated nutrition and obesity research, with emphasis on the endocrine function of adipose tissue and nutrient-gene interactions in metabolic diseases. Her current research includes mechanisms by which (1) the adipocyte renin angiotensin system increases inflammation and insulin resistance in metabolic diseases and breast cancer and (2) bioactive compounds (such as omega 3 fatty acids, tocotrienols, tart cherry anthocyanins and other polyphenols) reduce obesity-associated white fat inflammation and activate brown fat, using cell and animal models of obesity and Alzheimer’s disease. Her secondary areas of interest include beta cell function in diabetes and childhood obesity prevention.

Dr. Moustaid-Moussa’s research is currently funded by federal agencies (NIH and USDA), international Foundations (Qatar Foundation) as well as industry. She has extensively published in top tier journals (over 120 papers) and served in leadership positions within the American Society for Nutrition (ASN), The Obesity Society (TOS), and the American Heart Association (AHA). She currently serves as a member of the NIH Clinical Integrative Diabetes and Obesity study section. Dr. Moustaid-Moussa is Fellow of AHA (FAHA) and Fellow of TOS (FTOS). Her scholarship and mentoring was recognized through several awards including the 2012 Outstanding Investigator award and 2015 Pfizer Consumer Healthcare Nutritional Sciences award, both from ASN; the 2018 Nancy J Bell Outstanding Mentor Award from the TTU Graduate School, and the 2019 Outstanding Faculty Mentor for Undergraduate Research from the TTU Center for Transformative Undergraduate Experiences. This year, she was awarded the 2020 Outstanding Researcher Award from the Office of Research & Innovation, the 2020 Korean Nutrition Society Award, and was elected to the ASN Board of Directors representing Nutrition Mechanisms.
Dr. Jannette M. Dufour is currently a professor in the Department of Cell Biology and Biochemistry in the School of Medicine at Texas Tech University Health Sciences Center and Associate Director of the Obesity Research Institute. She received her Ph.D. in Genetics and Cell Biology from Washington State University in 1999 and trained as a postdoctoral fellow with the Islet Transplantation Group in the Surgical Medical Research Institute, Department of Surgery at the University of Alberta, Edmonton, Canada from 1999-2005.

The focus of her research is exploring the therapeutic potential of immune privileged Sertoli cells as a means to improve outcomes of transplantation. Specifically, her lab is testing the feasibility of using immune privileged Sertoli cells for cell based gene therapy as well as examining the mechanism(s) of Sertoli cell immune protection in order to improve survival of insulin-expressing cells as a treatment for diabetes.

Her research has been funded by several national and local agencies including the NIH, American Diabetes Association, and Texas ARP. Dufour was selected for the cover photo for Cell Transplantation (2008), Spermatogenesis (2012), and DNA and Cell Biology (2018). She has also been highlighted in Biology of Reproduction (2014) and Nature Medicine (2018). Invitations to give seminars at several universities as well as national and international meetings include American Society of Andrology (ASA; 2007, 2016), Society for the Study of Reproduction; 2012, 2016), NIAID (2017), and NIEHS (2017). She has received the TTUHSC President's Young Investigator Award (2011), the Outstanding Women Leader (OWL) Award from the West Texas Association for Women in Science (2013), the Harry M. Weitlauf Anatomy Teaching Award (2013), the Dean’s Basic Science Teaching Award (2017), and the President’s Team Teaching Award (2019).
Presenters

Jessica Calderón-Mora, Dr.PH.
Instructor, Department of Molecular and Translational Medicine and Department Family and Community Medicine, TTHSC, El Paso

Title of Presentation: Let’s Talk About…Cancer Disparities & Prevention in El Paso

Jessica Calderón-Mora is an Instructor with the Department of Molecular and Translational Medicine and the Department of Family and Community Medicine at Texas Tech University Health Sciences Center El Paso, Paul L. Foster School of Medicine. She received her bachelor’s degree from Stanford University and her master’s and Doctorate in Public Health from the University of Texas Health Science Center at Houston, School of Public Health. Dr. Calderón-Mora’s area of expertise is in the field of health disparities related to cancer and minority health, specifically Latinos along the US-Mexico border. She has worked in cancer prevention research and intervention development incorporating promotores, or community health workers, for over 14 years. She is currently a Co-Project Director on two Cancer Prevention and Research Institute of Texas prevention grants – one promoting HPV vaccination and the other is a community cervical cancer screening program.

Rakhshanda Layeequr Rahman, M.D., FRCS, FACS
Founding Executive Director of the Multi-Campus Breast Center of Excellence, TTUHSC, Lubbock

Title of Presentation: Changing Surgical Approach to Breast Cancer

Dr. Rahman joined Texas Tech University Health Sciences Center in 2009 and is the founding executive director of the multi-campus Breast Center of Excellence established in 2010. She spearheaded the development of the first breast center of excellence in west Texas accredited by the National Accreditation Program for Breast Centers (NAPBC). She is currently the director of UMC Cancer Center that is home to nationally accredited breast, and lung centers of excellence and is developing GI center of excellence. Her outreach program funded by CPRIT called Access to Breast and Cervical Care for West Texas (ABC2WT) project provides breast and cervical cancer education and screening across the 60 counties of Texas Panhandle, South Plains and Central West Texas. She maintains an active clinical research, educational and leadership portfolio and serves on several local, regional and national boards and committees including American Society of Breast Surgeons and National Consortium of Breast Centers. Her research interest includes cryoablative therapy for breast cancers, tumor infiltrating lymphocytes, circulatory tumor cells and aromatase related pathways in breast cancer.
Flavia De Sardela, M.S.
Visiting Scholar and Research Aide, TTU, Lubbock

**Title of Presentation:** Effects of the Blockade of Monocarboxylates Transporters on Tumor Cells & Macrophages

Flávia Sardela de Miranda is a short-term visiting scholar and a Research Aide at Texas Tech University under the mentorship of Dr. Naïma Moustaid-Moussa. Flávia earned her B.S. in Biomedical Sciences at the Sao Paulo State University (UNESP) and her M.S in Immunology at the University of Sao Paulo (USP), both in Brazil. Her M.S. research focused on investigating the effects of the blockade of lactate transport in co-cultures of macrophages and cervical-derived tumor cells. Currently, Flávia is pursuing a project in collaboration with Dr. Rakhshanda Rahman, Professor & breast cancer surgeon and Director of the Southwest Cancer Center at TTUHSC, Dr. Chanaka Kahathuduwa, Assistant Professor at the TTUHSC School of Health Professions, Dr. Latha Ramalingam, former NIOR research faculty, and Dr. Fahmida Rasha, former NIOR graduate and postdoc at TTUHSC. The main goal of this project is to investigate the associations between BMI, antihypertensive drug use and changes in key genes and proteins of the renin angiotensin system in samples of breast cancer patients.

Kevin Pruitt, Ph.D.
Associate Professor, Department of Immunology and Molecular Microbiology, TTUHSC, Lubbock

**Title of Presentation:** Novel Regulation of Wnt Signaling in Breast Cancer

Kevin Pruitt is an Associate Professor in the Department of Immunology and Molecular Microbiology. His formal training began with a B.S. degree in Chemical Engineering from UT-Austin followed by post-baccalaureate research at the Los Alamos National Laboratory. After Ph.D. training in pharmacology at the University of North Carolina at Chapel Hill, he completed postdoctoral training in oncology at Johns Hopkins School of Medicine. He has received several research awards during his career, serves on NIH and DOD study sections and maintains a funded research lab. In 2006, he joined the faculty at LSUHSC in the Physiology Department. In 2014, his lab was recruited to TTUHSC, and in 2017, he received the Childers-Fralick Chair in Cancer Research. His research team explores the role of epigenetics in malignancies.
Annelise Nguyen, Ph.D., MBA, DABT  
Professor, School of Veterinary Medicine, TTU, Amarillo  
**Title of Presentation:** Development of 3D Tumor Organoids

Dr. Nguyen, a diplomate of the American Board of Toxicology, is a professor in the School of Veterinary Medicine. Nguyen received a bachelor’s degree in molecular and cellular biology and a doctoral degree in toxicology from Texas A&M University. Nguyen has devoted her career to cancer research and the role of gap junctional intercellular communication, and recently developed in vivo-like tumor organoids 3D assay for anticancer drug efficacy and therapeutics. She is the recipient of 2020 PepGel® Award in Application and 2019 John Doull Award for outstanding contribution in the field of toxicology. Nguyen’s lab focuses on how the effect of natural, environmental, and synthetic compounds contributes to the loss of cell-cell communication during cancer formation. Her research interest recently expanded and applied the technology of regulating the closing and opening of gap junctions in alternative models, including 3D heterogeneous tumor organoids.

Wei Li, Ph.D.  
Associate Professor, Department of Chemical Engineering, TTU, Lubbock  
**Title of presentation:** Isolation and recovery of circulating tumor cells (CTC) and CTC subpopulations

Wei Li is an associate professor in the Chemical Engineering department at Texas Tech University. He obtained his Ph.D. at the University of Toronto (Canada) in 2010. Following his graduate studies, he received a Natural Sciences and Engineering Research Council of Canada (NSERC) Postdoctoral Fellowship to work at MIT. Dr. Li’s research at Texas Tech is combine microfluidics and nanoassembly techniques to develop novel functional polymer surfaces and microdevices for biomedical, energy and optical applications. His research has been funded by the Cancer Prevention and Research Institute Texas (CPRIT), National Science Foundation (NSF) and National Institute of Health (NIH).
Thank you for participating in Current Topics in Cancer Research

ORI Webinar Organizing Committee

Dr. Naima Moustaid-Moussa
Dr. Jannette Dufour
Cristal P. Sanchez
Dr. Kembra Albracht-Schulte
Crystal Price, MA
Caroline Shipley

Acknowledgments

OR&I and ORDC
ORI Advisory Committee

Connect with ORI

@obesityresearchinstitute.ttu
@ori.ttu
http://www.depts.ttu.edu/research/obesityresearch/