At the Intersection of Two Pandemics: COVID-19 & Obesity

July 16, 2020
10-11:15 a.m.

Obesity Research Institute
ORI Webinar
At the Intersection of Two Pandemics: COVID-19 & Obesity

Organizing Committee: Dr. Naima Moustaid-Moussa, Dr. Jannette Dufour, Dr. Kembra Albracht-Schulte, Cristal P. Sanchez, Crystal Price, M.A., & Caroline Shipley

Welcome and Introduction from the Obesity Research Institute
Naima Moustaid-Moussa, PhD, FTOS, FAHA, ORI Founding Director, TTU
Jannette Dufour, PhD, ORI Associate Director, TTUHSC

COVID-19, A Brief Overview
Ronald L. Cook, DO, MBA, FAAFP, FACOFP, TTUHSC

Can Smart Surface Slow the Contagion
Halima Bensmail, PhD, Qatar Computing Research Institute

Chanaka Kahathuduwa, MD (MBBS), PhD, TTUHSC

Texas A&M AgriLife Extension Service Response: Timely & Relevant
Mandi Seaton, MS, Texas A&M AgriLife Extension

Cancer in the Time of COVID-19
Theresa Byrd, DrPH, MPH, RN, TTUHSC

Applying Nanotechnology in Combating COVID-19 and Obesity
Shu Wang, MD, PhD, FAHA, TTU

Q&A Session


Schedule:

10-10:05 Welcome and Introduction from the Obesity Research Institute
Naima Moustaid-Moussa, PhD, FTOS, FAHA, ORI Founding Director, TTU
Jannette Dufour, PhD, ORI Associate Director, TTUHSC

10:05-10:10 COVID-19, A Brief Overview
Ronald L. Cook, DO, MBA, FAAFP, FACOFP, TTUHSC

10:10-10:18 Can Smart Surface Slow the Contagion
Halima Bensmail, PhD, Qatar Computing Research Institute

Chanaka Kahathuduwa, MD (MBBS), PhD, TTUHSC

10:26-10:34 Texas A&M AgriLife Extension Service Response: Timely & Relevant
Mandi Seaton, MS, Texas A&M AgriLife Extension

10:34-10:42 Cancer in the Time of COVID-19
Theresa Byrd, DrPH, MPH, RN, TTUHSC

10:42-10:50 Applying Nanotechnology in Combating COVID-19 and Obesity
Shu Wang, MD, PhD, FAHA, TTU

10:50-11:15 Q&A Session
Dr. Moustaid-Moussa’s primary scientific interests include (1) Identifying mechanisms mediating anti-inflammatory and other metabolic protective effects of bioactive food compounds and botanicals on adipose tissue and obesity-associated inflammation, insulin resistance, cardiovascular diseases, and Alzheimer’s disease; and (2) Functions of endocrine systems (such as the blood pressure regulating - renin angiotensin system) in adipose tissue and how these may contribute to chronic diseases such as diabetes, and breast cancer. The ultimate goals through these investigations is to discover potential novel targets for preventing and/or treating obesity and metabolic diseases. We use cell, organism models (nematode, C. elegans) and mouse models as well as relevant clinical specimens to dissect these complex interactions. Her research has been funded by federal and foundation agencies including NIH, USDA, AHA, and ADA as well as international foundations.

Dr. Moustaid-Moussa has been recognized by several honors and awards including Fellow of The Obesity Society (FTOS) and Fellow of The American Heart Association (FAHA); Fulbright Scholarship; the 2015 Pfizer Consumer Healthcare Nutritional Sciences Award sponsored by ASN; and most recently, the 2020 Korean Society for Nutrition Award sponsored by ASN. Honors/awards from her current institution include a TTU Presidential Research Excellence Professorship, College of Human Sciences nominee for the Faculty Leadership award in 2018, the Barnie E Rushing Faculty Distinguished Research Award in 2019 and 2020, The 2018 Nancy J. Bell Excellence in Mentoring award from the Graduate School, the 2019 Outstanding Faculty Mentor for Undergraduate Research in 2019, and the Outstanding Research Award in 2020.

Dr. Moustaid-Moussa held several leadership positions in professional societies including TOS council member, ASN Nutritional Sciences Council member, and is a member of the NIH Clinical Integrative Diabetes and Obesity study section. She currently serves as Regional Representative on the state-wide steering committee on obesity “Live Smart Texas” and was recently elected to the ASN Board of Directors to represent 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).
Dr. Ron Cook graduated from Texas College of Osteopathic Medicine in Fort Worth in 1993 and successfully completed his Residency in Family Medicine in 1996. He has been serving the city of Lubbock as the Health Authority since 2009 and has been the Braddock Chairman for the Department of Family and Community Medicine since 2012. Dr. Cook was promoted to Professor, Tenured, for the Department of Medical Education Center in 2018. In 2019, he was named America’s Best Physician in Today’s Physicians as well as Top Docs/Doctors of Distinction in Lubbock Magazine. He has been the recipient of numerous awards throughout his career.

The ratio of uncounted to confirmed cases is of major importance in implementing intervention measures for controlling the epidemic. Quantifying this ratio can be achieved by the identification of parameters of an epidemiological model from confirmed (reported) case data.

We show that using a SIR model, interventions have moderately controlled COVID-19 transmission in specific countries between March and June 2020 and that asymptomatic transmission pose clear challenges for the control of COVID-19 in the absence of strict social distancing measures or active epidemiological surveillance. We also project a dynamic reproductive number and study its behavior using added intervention measures such as smart surfaces especially in countries in which indoor activities are of high importance than outdoor activities (very hot or very cold weather).
Dr. Kahathuduwa holds a dual appointment as an Assistant Professor in the Department of Laboratory Sciences and Primary Care, School of Health Professions and as a Clinical Assistant Professor in the Department of Psychiatry, School of Medicine at TTUHSC. He is a physician in training in Sri Lanka and has earned his PhD in Nutritional Sciences from TTU. Dr. Kahathuduwa’s primary area of expertise is in cognitive neurophysiology and functional neuroimaging. He also has expertise in biostatistics, particularly in conducting systematic reviews, meta-analysis, and several meta-regression analyses. Today he will present the results of a thorough systematic review, meta-analysis, and a meta-regression he conducted with two alumni of the Department of Nutritional Sciences to accurately estimate the severity and mortality rates of COVID-19 based on the publications that appeared at the outset of the pandemic.

Mandi Seaton serves the Texas A&M AgriLife Extension Service Regional Program Leader for The Family and Community Health (FCH) program for the panhandle and south plains of Texas. The FCH program helps Texans better their lives through science-based educational programs designed to improve the overall health and wellness of individuals, families, and communities. Programs focus on increasing physical activity, basic nutrition, meal planning, chronic disease, passenger and community safety, aging, and financial wellness. Ms. Seaton leads a team of 40 in the development, implementation, and evaluation of community based programs that engage individuals and volunteers resulting in increased knowledge and changed behaviours.
Theresa Byrd, Dr.PH, MPH, RN
Associate Dean and Chair, Department of Public Health, TTUHSC

Theresa Byrd, Dr.PH, is Associate Dean and Chair of the Department of Public Health in the Graduate School of Biomedical Sciences at Texas Tech University Health Sciences Center. Dr. Byrd received a BSN from the University of Arizona and worked as a public health nurse for several years in the Tucson area before obtaining her MPH from UCLA. She worked in Cd. Juarez, Chihuahua, Mexico for three years with Proyecto Verdad serving very marginalized populations with basic public health needs and then went to Houston where she received a Dr.PH in Behavioral Sciences and Health Education from the University of Texas School of Public Health, where she worked as a faculty member at the El Paso Regional Campus for almost 20 years. Dr. Byrd’s research is focused on cancer prevention and screening, especially in the area of cervical and colorectal cancer. She led the development and testing of the AMIGAS program, an intervention to increase cervical cancer screening in Hispanic populations which has been adopted by the CDC as a recommended intervention. She was the Director of the CPRIT funded ACCION for Rural West Texas program, which provided free colorectal cancer screening to uninsured people. Her research has been funded by NCI, CDC and the Cancer Prevention Research Institute of Texas (CPRIT).

Shu Wang, MD, Ph.D., FAHA
Professor, Department of Nutritional Sciences

Dr. Wang conducts innovative research in nutrition and nanomedicine. Her research focuses on using biocompatible and biodegradable nanocarriers to enhance bioactivities of phytochemicals for the prevention and treatment of chronic diseases, especially cardiovascular disease and obesity. She has been funded by a variety of federal, industry, and foundation agencies, especially three competitive NIH awards. Since 2009, she has published more than forty peer-reviewed articles and four book chapters. Dr. Shu Wang has received several research honors to recognize the quality of her research. This includes American Heart (AHA) Association Young Investigator Award Finalist, 2014 Chancellor’s Council Distinguished Research Award in the Texas Tech University system, and 2017 Mary Swartz Rose Young Investigator Award from American Society for Nutrition. Dr. Wang is a fellow of AHA and a member of the Journal of Nutritional Biochemistry editorial board. She serves in grant review panels of NIH and AHA.

Dr. Shu Wang received her medical degree from Jilin University in China, her master’s in biochemistry and molecular biology from Capital Medical University in China, and her Ph.D. in nutritional biochemistry and metabolism from Tufts University in Massachusetts.