

Welcoming Dr. Kenneth Ataga and the Transformation of Sickle Cell Care in Memphis

In July 2018, the University of Tennessee Health Science Center welcomed Kenneth Ataga, MD, as director of the new UTHSC Sickle Cell Center. Dr. Ataga is also serving as professor of Internal Medicine and Pediatrics, director of the section of Non Malignant Hematology in the Division of Hematology/Oncology, and the director of the Memphis Consortium for Sickle Cell Disease and Classical Hematology Research. Additionally, he was named the Methodist Endowed Chair in Sickle Cell Anemia.

“Dr. Ataga’s presence will be vital in transforming sickle cell care and research in the Delta region,” Steven R. Goodman, PhD, vice chancellor for Research said. “We in Memphis must be united in our approach to sickle cell disease care for children and adults. Dr. Ataga will unify the care of adult patients and lead the research community by foraging a collaborative path for all area sites with a focus on sickle cell research.”

As written in the FY 15-FY18 UTHSC Institutional Research Accomplishments Booklet, the Memphis Consortium for Sickle Cell Disease and Classical Hematology Research “will be a Consortium without walls, and with representation from all participating institutions: UTHSC, West Cancer Center, UT-Methodist University Hospital, St. Jude Children’s Research Hospital, and Regional One Health.” Major goals of the Consortium include developing a collaborative approach to sickle cell research among all the participating Memphis institutions, creating standardized evidence-based clinical care supportive of clinical and translational research across the Consortium, and the integration of care for adult sickle cell patients across Memphis with seamless transition from pediatric to adult care. Dr. Ataga will lead the consortium with the support of two co-Directors.

“Through this new consortium, we are collectively working to provide the best comprehensive care possible for those individuals with sickle cell disease,” Dr. Ataga said. “The Memphis community is invested in sickle cell disease research and has an increased interest in new treatment options for patients. What excites me most are the opportunities to perform groundbreaking research with my collaborators through a multi-prong approach to execute a common vision.”

Among Dr. Ataga’s first steps in his new roles is to learn about Memphis’ current clinical infrastructure, how each of the existing area centers work and what their top-tier needs and resources are. From there, “we can develop a plan to provide high-quality, evi-

dence-based medical care to patients whether they are in the hospital or clinic, and no matter their age,” Dr. Ataga said. Low hanging fruits include filling out staff, creating common guidelines for consistent care, and bringing in new talent. Dr. Ataga will also focus on helping to facilitate the transition of adolescent sickle cell disease patients to the sickle cell clinic at Methodist Hospital or Regional One Hospital.

“As a pediatric hematologist at St. Jude, my interest is to help youth transition from pediatric to adult health-care, while minimizing the risks of care abandonment and health deterioration during this vulnerable time,” Jane S. Hankins, MD, associate professor in the Department of Pediatrics at UTHSC and Pediatric Hematologist at St. Jude Children’s Research Hospital said. “Dr. Ataga’s presence in Memphis will be pivotal in continuing the collaboration between St. Jude and the adult Institutions (Methodist and Regional One Health) in caring for these patients after they leave pediatric care. He will be critical in bringing together all the important stakeholders that will, together, advance care quality and bring a new era for care and research for sickle cell disease, giving continuity to Memphis’ important role in the field of sickle cell disease.”

Mitchell J. Weiss, MD, PhD, chairman of the Department of Hematology at St. Jude, notes the key role Dr. Ataga will also play in pulling together the Memphis sickle cell research community to further research and the development of new treatments for the disease.

“Dr. Ataga is an internationally recognized expert on clinical care and research related to sickle cell disease,” Dr. Weiss said. “Hematologists from the three hospitals (St. Jude, Methodist and Regional One) and Dr. Steven Goodman at UTHSC will collaborate to perform research that will lead to better therapies and cures for sickle cell disease. Our overall vision is to strengthen patient care and research on sickle cell disease in Memphis by leveraging the talents and dedication of hematologists and researchers at St. Jude, Methodist and Regional One Hospitals, and UTHSC. As a respected scholar in the field of sickle cell disease, Dr. Ataga will facilitate our goal tremendously.”



Dr. Kenneth Ataga
(Photo by University of North Carolina at Chapel Hill School of Medicine)

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New UTHSC Tennessee Clinical and Translational Science Institute Established to Improve Human Health for Southerners



Researchers at the University of Tennessee Health Science Center have formed the Tennessee Clinical and Translational Science Institute (TN-CTSI) to address health inequities in the Southern United States.

According to the U.S. Census Bureau, the American South represented the largest population growth by region in 2017. Comprised of 17 states, the South also has a large minority population with heightened levels of poverty and health disparities.

“TN-CTSI will catalyze the development of methods and technologies that lead to more efficient translation of medical discoveries into interventions that improve human health across the translational research spectrum, from basic science to population science,” Karen C. Johnson, MD, MPH, co-leader of TN-CTSI and Endowed Professor of Women’s Health in the UTHSC Department of Preventive Medicine said (pictured right). “Our mission is to improve the health of Tennesseans and underserved populations in the South by providing education and training, fostering interdisciplinary teams, improving quality and efficiency, and engaging community stakeholders and partners in meaningful collaboration.”

Michelle Martin, PhD, director of the Center for Innovation in Health Equity Research: A Community Cancer Alliance for Transformative Change at UTHSC and professor in the Department of Preventive Medicine (pictured left), will serve as the other leader of TN-CTSI.

“TN-CTSI will have participation from all six colleges, as well as participation from all campuses at UTHSC,” Dr. Martin said. “The institute will also collaborate with other UT units, such as the UT Institute of Agriculture, especially the extension service, and the UT Advanced Computing Facility in Knoxville. We are forming an integrated institute that spans

the entire state to address the most-pressing health needs in our area.”

Research Institutes at UTHSC are comprised of faculty from multiple colleges and multiple campuses, and are often catalysts for interdisciplinary team science that can lead to large Center or Program Project grant applications, collaborations, and awards.

TN-CTSI, in collaboration with the University of Mississippi Medical Center Clinical Research Institute and the Tulane University Translational Science Institute, have together formed the Delta Clinical and Translational Science Consortium. The collaborative consortium is designed to support high-quality interdisciplinary team-based clinical and translational research locally, regionally, and nationally, by fostering innovation in research methods, training, and career development. What makes this Delta Consortium unique is its focus on underserved populations, addressing health disparities by uncovering interrelationships of disease phenotypes with genomics, health-related behaviors, environmental exposures, and social factors that may affect health across the lifespan.

Long-term, the Delta Consortium’s goal is to obtain a Clinical and Translational Science Award (CTSA), which will identify the consortium as a hub linked to a national network of medical research institutes recognized by the National Center for Advancing Translational Sciences. UTHSC and Tulane are partners, with UMMC a collaborating Institution, within this consortium. Each university-created research institute will have cores designed to carry out the work of the Delta Consortium.

“We will build on decades of accomplishments in clinical and translational research at our respective institutions, along with robust workforce training programs, career development, and collaborative community engagement,” UTHSC Vice Chancellor for Research Steven R. Goodman, PhD said. “The vision of the Delta Consortium is to be a model environment that covers three states (Tennessee, Mississippi, and Louisiana) to facilitate research across the translational spectrum from basic science to population science that is responsive to community priorities, conducted by interdisciplinary teams, and that results in acceleration of discoveries into practice leading to improvement of human health.”

As described in another article in this quarter's edition of *The Research Rainmaker*, the American South is home to the largest minority population in the United States. With high levels of chronic disease and poor health outcomes, researchers at the University of Tennessee Health Science Center, Tulane University, and the University of Mississippi Medical Center (UMMC) are looking to combat these regional health disparities together.

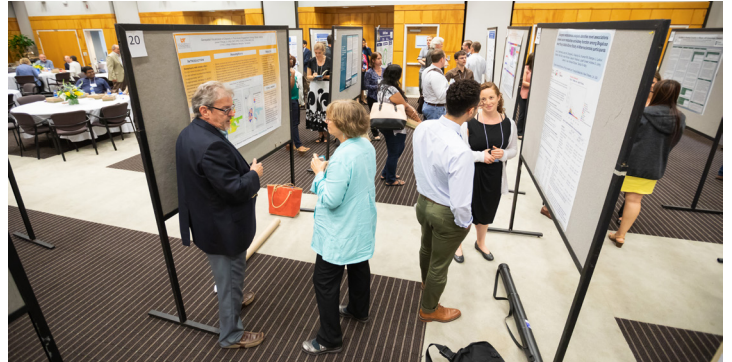
On July 19, nearly 200 investigators from UTHSC, Tulane, and UMMC gathered in Jackson, MS for the Delta Clinical and Translational Health Disparities Conference. Envisioned by Steven R. Goodman, PhD, vice chancellor for Research at UTHSC, Richard L. Summers, MD, vice chancellor for Research at UMMC, and Laura S. Levy, PhD, vice president for Research at Tulane, the conference was designed to bring together health disparities researchers from UTHSC with those from UMMC and Tulane, allowing them to share their research interests, and catalyze new collaborative partnerships that will result in the submission of a UTHSC/TU/UMMC Collaborative Research Network (CORNET) Award proposal in Health Disparities Research.

"The Delta Clinical and Translational Science Conference, on the subject of Health Disparities, is the first event of this kind engaging researchers from the University of Tennessee Health Science Center, Tulane University, and the University of Mississippi Medical Center," Dr. Goodman said. "This conference, with its outstanding symposia and poster sessions, will further enhance partnerships that will lead to robust basic, translational, clinical and population research on major diseases that impact our region and the nation."

The UTHSC/TU/UMMC CORNET Award proposal in Health Disparities Research was announced earlier this summer and is poised to stimulate innovative, interdisciplinary, team-based health disparities research that involves investigators from UTHSC, Tulane, and UMMC. The award is designed to promote new lines of research and provide seed money that will give rise to future external grant funding. To be eligible for a UTHSC/TU/UMMC CORNET Award in Health Disparities Research, each proposal must include, at a minimum, one faculty member from each participating institution. Resources are available to fund up to two awards, for up to \$75,000/award, for one year.

"Increasingly, we recognize the importance of bringing together multiple disciplines to solve complex health issues. The CORNET Awards will facilitate new collaborations and innovative solutions to persistent health disparities," Michelle Martin, PhD,

Addressing Health Disparities in the Delta: A Conference and a CORNET



Researchers during the conference's poster session. Photo courtesy of UMMC.

co-director of the UTHSC Tennessee Clinical and Translational Science Institute and director of the Center for Innovation in Health Equity Research: A Community Cancer Alliance for Transformative Change said.

The free conference featured nine keynote speakers from each institution, a robust poster session which allowed attendees to feature their health disparities research, and networking. A diverse set of research topics were presented, ranging from disparities in breast cancer to pediatric inequities associated with healthy mental and physical development.

"We were very excited about the enthusiastic response for our faculty who are interested in preventing and eliminating health disparities in the region and look forward to improving the health of our states," Karen C. Johnson, MD, MPH, co-director of the UTHSC Tennessee Clinical and Translational Science Institute and Endowed Professor of Women's Health in the Department of Preventive Medicine said.

Launched almost three years ago by Dr. Goodman, the CORNET Awards program has been the catalyst of multiple collaborative partnerships between researchers at UTHSC internally and across the state of Tennessee, with various academic institutions regionally and globally, and with industry partners. To date, the CORNET Awards have provided more than \$1.4 million in funding to new teams of researchers.

To learn more about the UTHSC/TU/UMMC CORNET Award proposal in Health Disparities Research, please visit the UTHSC Office of Research Development's website. Proposals are due by Wednesday, September 12, 2018 with funding set to begin December 1, 2018. If you have questions about the CORNET Award in Health Disparities Research or need help finding potential collaborators, please e-mail Lisa Youngentob, lyoungen@uthsc.edu.

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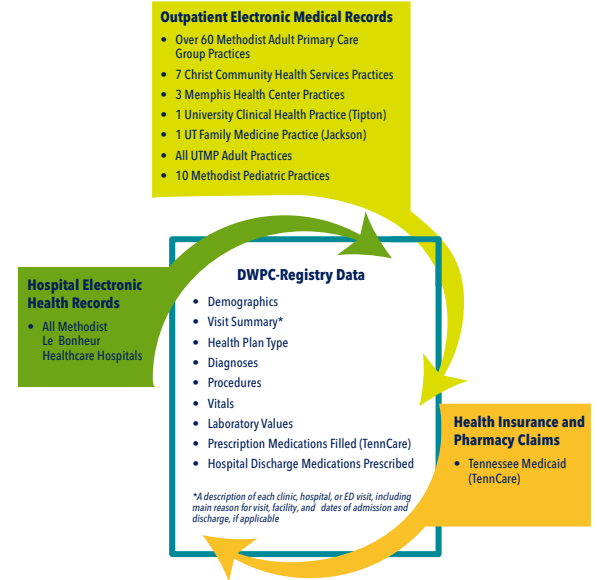
Coalition Aims to Improve Diabetes and Obesity Care for Mid-Southerners

According to the 2017 National Diabetes Statistics Report published by the Centers for Disease Control and Prevention, 30.3 million Americans had diabetes as of 2015. The report also showed that people living in the southern and Appalachian areas of the U.S. had the highest incidence of diabetes. In the Mid-South and Mississippi Delta region, the high percentage of people suffering from diabetes and obesity-associated chronic conditions such as hypertension, obesity, and congestive heart disease is frightening. Minority and underserved populations in particular are disproportionately affected by diabetes and obesity-associated multimorbidity. They are also less likely to seek out recommended care, which results in adverse outcomes, complications, suffering, and death from these conditions.

Researchers leading the Diabetes Wellness and Prevention Coalition (DWPC) are looking to transform obesity and diabetes care in the Mid-South, shifting the focus from reactive, rescue care to high-value, patient-centered care that will mobilize and engage the whole community. The DWPC Registry supports the coalition by delivering a comprehensive patient-data registry and practice-based research network that integrates several health systems and community provider data feeds. This fully HIPAA-compliant and professionally managed system serves as a specialized diabetes and chronic disease registry aimed to improve care for Mid-Southerners living with chronic diseases or who are at risk for chronic diseases.

“The registry includes data from more than 80 participating clinics from across the state of Tennessee as well as the UTHSC-Methodist Le Bonheur Healthcare Enterprise Data Warehouse and from Tennessee Medicaid (or TennCare),” James E. Bailey, MD, MPH, Director of the Center for Health System Improvement and professor of Medicine and Preventive Medicine at UTHSC said. “Around 15 percent of the over 450,000 Mid-South adults in the DWPC Registry live with diabetes. But because the registry includes all patients, it is also useful for health services and clinical trials focusing on other chronic conditions.”

Providers who participate in the registry work together to track processes and outcomes of care for people suffering from chronic disease, to help ensure that they receive recommended care. The registry is also specifically designed to help applied health care researchers evaluate the impact of healthcare delivery and health system quality improvement efforts. It serves as a fully qualified Specialized Registry as well that can help providers improve population health outcomes and achieve meaningful use of electronic



health records.

“We are able to receive electronic data generated from certified electronic health record technology (CEHRT) through appropriate secure mechanisms for any health care provider interested in joining the Coalition,” Dr. Bailey said. Participating providers also receive quarterly practice improvement reports including patient panel characteristics, comprehensive diabetes measures, and rates of common chronic conditions. Additionally, the Registry functions as a Practice-based Research Network (PBRN) and a major site and primary recruitment arm for the Clinical Trials Network of Tennessee (CTN2) as well. It allows providers the opportunity to participate in both practice-based pragmatic research initiatives and clinical trials through CTN2.

Future plans for the registry include making data available to UTHSC researchers (de-identified or identified) for pilot and feasibility studies, and health services research and clinical trials, all under appropriate IRB oversight. A long-term goal for the registry is to be linked with other large data networks in the southeastern U.S.

“It is vital to understand and address the disparities affecting our disenfranchised communities in the Mid-South,” Dr. Bailey said. “The registry enables applied healthcare researchers to follow cohorts of patients between primary care physician visits and record hospital-based encounters in near real time. This tool will allow us to develop tailored interventions for the patients most at risk of preventable emergency room visits, hospitalizations, and readmissions.”

For more information on the Diabetes Wellness and Prevention Coalition or the DWPC Registry, please contact Carrie Jo Riordan, MPH, at criorda1@uthsc.edu.

Could Genetics be the Primary Link Between the Risk of Parkinson's Disease and Agricultural Toxins?

Story adapted from its original feature on *Researchfeatures.com*: <https://researchfeatures.com/2018/04/05/agricultural-toxins-parkinsons-disease/>

Widely used in agriculture, Paraquat is a powerful herbicide that provides fast and effective results for ridding farms and gardens of weeds. This controversial chemical was banned in 2007 by the European Union and is classified as “restricted use” in the U.S. Recent studies suggest that chronic exposure to this weedkiller could damage brain cells and may even lead to a higher risk of Parkinson's disease (PD). Current studies by Byron Jones, PhD, professor in the Department of Genetics, Genomics and Informatics at UTHSC suggest that susceptibility to paraquat-related PD may be related to host genetics. His research further looks at how genes decide who is more at risk to paraquat's neurotoxic effects.

Parkinson's disease is a neurodegenerative disease which causes a loss of motor control and progressive cognitive decline in patients. This incurable disease is categorized as familial or sporadic, with sporadic being the most commonly diagnosed. In cases of sporadic PD, the cause is typically unclear and the complexity high as it involves multiple genes. Factors such as environment and lifestyle play a role in sporadic diseases, and mounting evidence indicates a correlation between agricultural workers with chronic exposure to toxic herbicides and a heightened risk of developing sporadic PD.

The direct links between paraquat to the cause of Parkinson's disease are unclear, however, with conflicting information found in both public health and animal model literature. Dr. Jones speculates that some of these discrepancies are not due to a lack of relationship but to heterogeneity in the people and animals studied, making the data hard to interpret because they fail to account for individual differences. Looking to identify the genetic risk factors that might modify susceptibility, Dr. Jones hypothesizes that some individuals exposed to paraquat could be at a greater risk of developing PD even if their living and working conditions are the same as others. His recent award from the National Institute of Environmental Health Sciences for \$2.6 million will support a five-year project researching susceptibility and the mechanism of neurotoxicity using genetically well-defined mouse models.

One recent study examining the neurological effect of paraquat found different amounts of dopami-

nergic neurons affected by the toxin despite the two mice strains used having equivalent amounts of the herbicide in the midbrain. These findings underline the

significant role genetics play on one's susceptibility to paraquat's effects, enabling investigators to “reverse” study the genes and biochemical pathways that could be regulating this. If a “toxic-sensitive genotype” is discovered, it will play a crucial role in determining individuals who might be at an increased risk of PD due to paraquat exposure and could provide new safety information for agricultural workers.

Additional research into the specific mechanism through which paraquat could cause Parkinson's disease are being investigated, too. Current thinking suggests the toxin is associated with an increased production of harmful reactive oxygen species or free radicals, leading to dysfunction and death of dopamine neurons linked to the onset of Parkinson's disease. Dr. Jones' lab is specifically looking into iron regulation in the substantia nigra which has been shown to be disrupted after paraquat exposure and mysteriously alter gene expression of iron ion-binding proteins in more vulnerable mice. They hypothesize that faulty iron regulation in the brains of susceptible animals (and humans) could cause an influx of free iron into the midbrain producing oxidative damage to dopaminergic neurons, leading to PD. Further damage may occur due to dysfunction of mitochondria, a notable happening in susceptible mice. These fundamental, energy-generating parts of the cell have been associated with pathophysiological dysfunction of Parkinson's disease for years.

While there is still a lot to be discovered, Dr. Jones' lab aims to show that genetics could play a key role in determining one's susceptibility to Parkinson's disease and discover the potential mechanisms linking paraquat to brain damage. Discoveries made by Dr. Jones could eventually help determine genetic vulnerability in workers exposed to agricultural toxins.



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UTHSC LEADS Recap: Dr. Todd Giorgio



The intersection of two fields tend to generate a wellspring of production and growth that extends to not only the conjoining fields but also beyond. This is certainly the case for biomedical engineering and its practitioners. One such practitioner is Vanderbilt University's Todd Giorgio, PhD, (pictured left) whom we were lucky to have as a lecturer for UTHSC's LEADS seminar series in early 2018.

Having received his degrees in Chemical Engineering, Dr. Giorgio became increasingly interested in biology as a graduate school mentor of his was exploring blood platelets. Dr. Giorgio, who'd never had a single college biology course, dove into the subject as a response and began building an instrument that pushed him into the then burgeoning world of biomedical engineering.

He was a hire into the Chemical Engineering department at Vanderbilt, though his work mainly focused on biomedical engineering. As biomedical engineering became a full-fledged department rather than a specialized program at Vanderbilt, Dr. Giorgio switched his primary appointment to the department.

"The way we tend to operate is that we tend to have a group of core competencies and enabling technologies, and we look for interesting problems that we think our tools can have some impact on." Dr. Giorgio said. "Because we do so many things, our lab does not have a single focus, but rather we're a 'curiosity-driven lab.' We look for things that we are curious about and that we can have an impact on and then we start doing that."

His first companies, BioNanovations and PathEx, were focused on sepsis, a bacterial infection of the blood that is the consequence of an infection somewhere else in the body. "The thing that really inspired us to work on this is that in the young and elderly, sepsis is roughly 40% fatal," Dr. Giorgio said. "One of the reasons for the outcomes being so poor is that it is really hard to do early detection clinically." The

standard test to identify sepsis bacteria takes two days, in which time as the bacteria grows in blood test cultures, it also grows in the infected individual. BioNanovations was all about the early detection of sepsis using a nanoscale amplification technique to identify there was bacteria and the specific strain so an effective antibiotic therapy can begin more rapidly.

PathEx took a device-based strategy in its approach to sepsis, using a physics-like approach to separate the bacteria from the blood. Thinking of it as simply kidney dialysis for bacterial infections, Dr. Giorgio is enthusiastic about PathEx because "the device just works every time, and it's one reason that PathEx has made tremendous progress. The company has really advanced because the design of the device is so robust."

What's distinct about Dr. Giorgio's companies is that the CEOs for both BioNanovations and PathEx are his former students. He attributes the successes of these students to their propensity to carry themselves in a way not every student does.

"They are really good scientists. They have a solid fundamental understanding of the biology and the technology, but what is equally important is that they have the right personality," Dr. Giorgio said. "They will stick their hand out and introduce themselves, which is so important when you're forming a company and looking to develop connections and do networking."

Dr. Giorgio encourages the nurturing of graduate students who exhibit fundamental, intrinsic capabilities to become entrepreneurs and to keep a dialogue alive in the lab that encourages younger researchers to consider what else they could do with what they're doing. He also encourages students to attend seminars totally disconnected to what they're doing. "Be curious, and that's where you can find connections."

Part of an active, growing research program within a university that lends itself to the potential of commercializing products by talented graduate students, Dr. Giorgio's entrepreneurial stories demonstrate that there is opportunity to leverage research into profitable and important ventures.

"We're at a moment where we are building more entrepreneurs rather than just having it be serendipity."

The UTHSC LEADS program will resume in Fall 2018.

Have a story we should include?

Submissions and ideas can be sent to

Sarah Bloch, sabloch@uthsc.edu or Connor Bran, cbran@uthsc.edu

Save the Dates: Upcoming Office of Research Events Fall 2018

The VCR Distinguished Lecture Series

All lectures take place from Noon – 1 PM in the Freeman Auditorium (930 Madison Ave., 3rd Floor)



Sept. 6, 2018

Richard A. Gibbs, PhD

Director, Baylor Human Genome Sequencing Center; Wofford Cain Professor of Molecular and Human Genetics; Professor, Department of Molecular and Human Genetics; Baylor College of Medicine

“Genomics in the Adult Clinic: Landing on Mars”



Oct. 18, 2018

C. Robert Cloninger, MD, PhD

Wallace Renard Professor of Psychiatry; Professor of Genetics and Psychology; Director, Sansone Family Center for Well-Being; Washington University School of Medicine

“The Psychobiology and Genetics of Human Personality”



Nov. 15, 2018

Emily Y. Chew, MD

Deputy Clinical Director; Chief, Clinical Trials Branch, The National Eye Institute; Director, Division of Epidemiology and Clinical Applications; Medical Officer, Division of Biometry and Epidemiology, NEI/NIH

“Age-related Macular Degeneration, Environment, Nutrition and Genetics”



Dec. 6, 2018

Frederick G. Hayden, MD, FACP

Consultant, World Health Organization; Professor Emeritus of Medicine; Stuart S. Richardson Professor Emeritus of Clinical Virology, University of Virginia School of Medicine

“Advances in Influenza Therapeutics”

Hot Topics in Research

All presentations take place from Noon - 1pm in the General Education Building (GEB), A104.

Lunch for the first 50 attendees and HR-128 credit will be provided for those who register. Be on the lookout for further registration details!

August 28, 2018

Dr. Colleen Jonsson
“Leveraging RBL Resources for HTS and DD”

September 25, 2018

Drs. Steve Youngentob and David Hamilton
“Vivarium Services/IACUC”

October 23, 2018

Dr. Richard Redfearn
“Working with Office of Scientific Writing to Create the Most Successful Proposals and Manuscripts”

November 27, 2018

Dr. Gabor Tigyi
“Business Relationships and Global Partnerships”

December 18, 2018

Dr. Tiffany Seagroves
“Institutional Research Cores 2018”

PAN: E070116(011-190129)

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Dog Days and Summer Rain: A Message from the Vice Chancellor for Research

Did you know that the phrase “Dog Days of Summer” has nothing to do with Dogs? The phrase actually comes from the Ancient Greeks and Romans who were making reference to the Dog Star, Sirius, that rose just prior to the Sun in July. This was thought to be the hottest days of summer and a time of lethargy. According to the Old Farmer’s Almanac, “the Dog Days of summer are traditionally the 40 days beginning July 3 and ending August 11.” We are in the Dog Days now, but worry not.

As we all know, the summer rain gives some immediate relief to these Dog Days. Also, as long as it is in the right amount, helps provide a good harvest for farmers in the Autumn. As the young man in the picture above, I have always found the Dog Days of Summer, tempered by Summer Rain, a time of great energy. This summer 2018, we are negotiating the completion and execution of dozens of CTN2 related agreements that will by Autumn lead to us engaging our first Clinical Trials. Drs. Karen Johnson and Michelle Martin are working hard, with the help of the Office of Research, to complete our Delta CTSA application which will be submitted in early September. We have the Memphis Institute of Regenerative Medicine, led by Dr. James Kang and currently with over 50 members, initiating four collaborative Working Groups that will lead to an MRC proposal to the State of TN in the Fall. We welcome Dr. Kenneth Ataga who is initiating the Memphis Consortium for Sickle Cell Disease and Classical Hematology Research, a landmark event in this city’s research impacting the Memphis community, the State of Tennessee and patients worldwide. All of these programs as well as many more that you will read about in the pages of *The Rainmaker* are going to lead to a wonderful Autumn Harvest.



photosource: Playing in the Rain. Digital Image. 25 July 2018
<<https://www.pinterest.co.uk/pin/508906826625723141/>>

We are definitely in the Dog Days of summer in Tennessee. Rather than a time of lethargy, I find the Dog Days a time of great inspiration and visionary thinking, or a period of Summer Rain. I enjoy coming to work and working long hours, even during the Dog Days, because of the great people that I get to interact with each day and the intrinsic feeling of creating something of value for the UTHSC Community. I believe that this defines me as an engaged worker (Nancy Rothbard, Harvard Business Review IdeaCast, April 11, 2018); as my long hours at work are not based on an addiction or compulsion to work long hours. Instead, as Milton Hershey said, “The Man Who Plays the Game for the Love of It, and Plays Fair, Usually Enjoys It and Wins.”

-Steven R. Goodman, PhD
Vice Chancellor for Research



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