The Department of Nutrition & Food Science
February 2017

NFSC Calls Cater-Mattil Home
Research Spotlight
Food Diversity Program
Our annual newsletter is published by the Department of Nutrition and Food Science within the College of Agriculture and Life Sciences at Texas A&M University.

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Please contact us with any suggestions on topics or if you have any important news to share with the NFSC family.

Recent Graduates: We want to hear from you! Let us do a story on where you are now. Contact Nadia at nadiap@tamu.edu

Giving

Interested in giving to the Department of Nutrition and Food Science please visit http://nfs.tamu.edu/giving.

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A Word From the Department Head

It will be a gross understatement to say that it has been such a privilege for me to serve as the Head of the Department Nutrition and Food Science at Texas A&M University. Since arriving here July 1, 2014, I have had the true honor to work alongside an exceptional team of students, staff and faculty, dedicated to making this department the best she can be; their dedication and love for the department is second to none. Together as a team, our department has crafted a strategic plan to address key foods and health issues important to Texas and the world. This will be accomplished through the integration of research, education, and outreach. Our department has continued to grow in all areas. Undergraduate and graduate student enrollment has increased to 645 and 78, respectively. More importantly, many of our students are of high academic standing. Graduates in Food Science continue to readily find employment, and Nutrition graduates accepted into many medical fields. We continue to expand our high impact learning opportunities for our students and increase on-line course offerings; in addition, we have launched a novel webinar series targeting physicians and medical students. Through a generous gift, we are launching a new unique program in Food Diversity. Under this program, we will integrate existing course offerings centered on food diversity, and strategically position the department and Texas A&M University to provide expertise and training in an expanding global market in ethnic-based foods. As a department, we continue to integrate our food science and nutrition disciplines, and to integrate extension, community nutrition, basic research and teaching programs. Research faculty continue to excel in novel research related to cancer prevention. In addition, through the hiring for four outstanding faculty, we are now able to effectively address obesity/diabetes and related diseases. Our move to Cater-Mattil has served to further knit us together; we now look forward to the possibility of expanding our present facility to allow us to grow our department, and to facilitate the integration of researchers, across Texas A&M University who share a common interest. The future of the Department of Nutrition and Food Science is very bright. I am thankful that I can be a part of this group of exceptional students, staff and faculty, and a supportive college and university. Gig’Em NFSC.

Jenna Anding

A registered and licensed dietitian, Jenna provides administrative leadership for the Extension Foods and Nutrition unit. She has developed more than 30 educational programs on topics such as nutrition, food resource management, food safety, and food preservation. She has also secured more than $36 million dollars in contracts, and grants which support AgriLife Extension programming efforts which include the Better Living for Texans (BLT) and Growing and Nourishing Healthy Communities programs.

Stephen Talcott

Dr. Stephen Talcott is the Associate Head for Academic Programs in the NFSC department. The academic undergraduate programs include nationally accredited programs in Dietetics and Food Science and two program tracts in Nutrition. At the graduate level, the department offers both Master of Science and Doctoral degrees in Nutrition and Food Science. Dr. Talcott is a food science professor who teaches a graduate and undergraduate course in food chemistry. His research focus is natural products chemistry working primarily with fruits, vegetables, and botanicals for chemical composition, changes during food processing, and metabolic fate after consumption.
Undergraduate Program

Study Abroad Texas 2016

Caravans of nutrition faculty and upper-level nutrition students departed from College Station in May of 2016 to embark on the first Study Abroad Texas trip to Austin and San Antonio. Students were provided an experience to observe potential career avenues as a community nutrition professional in unique demographics and regional settings of Texas.

Meals on Wheels was the first site visited, along with the Austin Meals on Wheel and More Congregate Meal Site that served elderly individuals hot and nutritious meals at lunchtime. The meal programs provided by Meals on Wheels are desperately needed and appreciated by the Central Texas region serving a wide variety of population groups including children, veterans, seniors, and adults with disabilities. Soon after, we made our way to the Sustainable Food Center, also located in Austin, to learn about providing healthy and accessible food options through utilizing local food systems. The Sustainable Food Center largely works to connect individuals of all backgrounds to food sources that support local economic growth and empowerment. Students were fortunate enough to take a tour of facility’s community garden and 4-star rated green energy office and community center, along with participation in a cooking class utilizing all locally grown produce.

The following day students visited the San Antonio Food Bank (SAFB), which serves as a national model for addressing hunger relief. Study abroad students had the unique opportunity to volunteer packing lunches for local backpack school lunch programs. Additionally, the Good Samaritan Congregate Feeding Center, a community center that aimed to work mostly with children in low-income areas by providing them meals through the food bank, was visited to see how the SAFB distributes its resources. To end the day, Anna Macnab, RDN, LD, CDE from the San Antonio Metropolitan Health District joined the group for dinner and delivered an excellent presentation regarding the ¡Por Vida! Programs. ¡Por Vida! aims to work with restaurants to provide healthy menu options to make dining out more nutritious and transparent to consumers.

The last day of the Study Abroad Texas trip was devoted to touring HEB’s headquarters site located on a historical downtown San Antonio Arsenal site. Students learned the career opportunities of being a retail dietitian in the grocery store setting who must possess skills of public speaking, culinary creativity, business savviness, and clinical expertise to aide in corporate wellness initiatives such as Slimdown Showdown weight loss programs and consults. Surprisingly, HEB dietitian, Stacey Bates MS, RDN, LD, CDE, challenged students to compete in an impromptu 3-minute cooking demo using only select ingredients. Each team, consisting of two students, had to deliver a captivating presentation that was geared towards a different population. Unforgettable, the generous HEB retail dietitian staff gave a tour of two local grocery stores in the area with different layouts, allowed us to speak with store managers, and sent us on a scavenger hunt to find ingredients for a nutritious recipe that we could make at home!

The experiences provided over these three days provided immense insight into the cultural dynamics and nutritional needs faced by community nutrition professionals. Upper-level nutritional science students on the DPD track were given a fabulous opportunity to network, ask questions, and contemplate a future in similar career paths. Moreover, students and faculty were able to have fun exploring the cities of Austin and San Antonio. Students were able to experience fine Texan cuisine and pay visits to the iconic River Walk, Alamo, and Market Square. Lastly, students were able to see the true interdisciplinary relationships between registered dietitians and other professionals in the workplace in every distinct setting.

--- Jacquelyn Parker, Nutritional Sciences ’17
Graduate Program

In September 2012, the Texas Higher Education Coordinating Board approved the integration of the Interdisciplinary Faculties of Nutrition and Food Science into the Department. This now gives us a full complement of undergraduate (Baccalaureate) and graduate degrees (Master of Science [MS] and Doctor of Philosophy [PhD]) making the Department on par with other leading Nutrition and Food Science departments across the US. More importantly, the faculty that constituted the Interdisciplinary Faculties have been incorporated into the Department as Graduate Faculty Members. This is significant because it provides even more opportunity for the Department to become a leader in Nutrition and Food Science graduate education.

Awards

During the Spring and Summer $500 Travel Awards were given to 20 students. Travel awards were used to attend the Institute of Food Technologists, American Association of Cereal Chemists International, and Experimental Biology conferences.

Shima Agah
Audrey Girard
Derrick Amoako
Maria Shreckinger
Zubaida Gamar
Mariana Villanreal Silva
Elba Veronica Arias Rios
Adam Kieffer
Keila Perez
Tara Price
Songsirin Ruenvisesh
Shima Shayanfar
Gyhye Yoo
Ayoola Onafowokan
Yagmur Yegin
Kristen Hicks
Jiyang Fang
Paula Cipriano
Rachel Batchlett
Ryan Barnes

Food Science Graduate Student Association Mentorship Program

The Food Science Graduate Student Association (FSGSA) completed its second semester of mentoring undergraduate students. The program paired seven undergrads who wanted to learn more about graduate school with seven graduate students who shared their experience. This fall’s program built on the success of the inaugural semester (Spring 2016). Thirteen meetings were held throughout the semester and included a speed mentoring session, an overview of grad school and how to apply, two meetings with industry professionals, a presentation on reading scientifically, and several opportunities for mentorship pairstomeetup. Outcomes of the program included helping students apply to grad school, find a job in lab on campus, approach professors to discuss research, and find areas of food science that really do (or do not!) interest them. Mentors were able to share their diverse backgrounds and unique routes to grad school with the undergraduates while working on their mentoring skills. FSGSA will focus on mentorship for graduate students during Spring 2017, with the undergraduate program returning Fall 2017. However, any student interested in gaining a mentor can contact Audrey Girard: agirard@tamu.edu.
New Faculty & Staff

KOURTNEY BROOKS, joined our department in November 2016 as our Business Associate I.

EVELYN QUINONES, joined our staff in June, 2016. She received a Master’s Degree in Special Education from San GermanInteramericana University from Puerto Rico. She is part of the Undergraduate Advising office where she helps advise our Nutrition and Food Science students.

SELMA DAWELBEIT, joined the department in December 2014, from Birmingham, Alabama, as our Facilities Coordinator and IT support. His primary responsibility is solving issues that are electronic, technical, or mechanical, that interfere with faculty and staff from getting their job done.

DR. LINGLIN XIE, research has been focused on understanding the molecular basis of obesity and insulin resistance. Her recent study focus is to find out if and how different maternal diet intervention before pregnancy would prevent the downstream offspring. She is also interested in understanding how maternal obesity or diabetes increase the risk of

Retirees

Dr. Joann Lupton is a Distinguished Professor, Regents Professor, University Faculty Fellow and William W Allen EndowedChairinNutrition. Dr. Lupton’s research is focused on the effect of diet on colon physiology and colon cancer, particularly on dietary fiber and n-3 fatty acids.

Stella Toddeo began working in June of 1975 as a tech in MeatChemistry, then for Animal Science. She started working for Dr. Lupton in 1990 as a Research Assistant and helped train the lab students. Stella retired in May of 2015.

Connie Beaty joined our department in March of 2007. She was the Lead Office Assistant for our faculty members. Connie retired at the end of December of 2015.
Kallie Fuchs Wins Brown Rudder Award

Texas A&M University has presented one of its top student awards — recognizing outstanding accomplishments in academics, leadership and service by Kallie Fuchs of Burton, a Nutrition Science Major who graduated on Friday, May 13th. Kallie received the prestigious Brown-Rudder Award presented annually to two candidates recognized for their exemplification of the leadership and dedication to academics and Texas A&M University.

The award was approved by President Michael K. Young and presented at the Learning communities, Academic excellence, Undergraduate research opportunities, National fellowships, Capstones and Honors programs (LAUNCH) recognition ceremony that serves as a climax for the regular school year this past Thursday, May 12.

Brown Foundation-Earl Rudder Memorial Outstanding Student Award includes a cash gift of $5,000. The award honors top students who exemplify the leadership and related traits of the late Gen. Earl Rudder, a World War II hero who served as president of Texas A&M from 1959 until his death in 1970.

Fuchs graduated with a Bachelor of Science degree in nutritional sciences and a minor in applied learning in science, technology, engineer and mathematics. She is described as an “academic powerhouse” and a dedicated leader. One of her nomination letter writers describes her as fitting John Quincy Adams’ description of a leader as one who inspires “others to dream more, learn more, do more and become more.” Another letter states that she “represents leadership, embodies integrity, walks the walk of respect and is loyal.”

It was noted that Fuchs demonstrated her fortitude, courage and integrity as the election commissioner for Student Government, her dedication to Aggie values as the founder of Farmers Fight, the Agricultural Advocacy organization, and her commitment to selfless service through her work with the American Legion Auxiliary Girls State program.

Her embodiment of involvement and impact throughout the Aggie community resulted in her being honored by a Buck Weirus Spirit award in 2015. Her academic record reveals remarkable accomplishments in challenging coursework and undergraduate research which led to her earning the 2014 Texas A&M Gatright Scholar award and 2014 Class of 2016 Class Star Award for Academics.

Kallie finished her degree with a perfect 4.000 grade point ratio, scored in the 87% on the MCAT, and begins Baylor Medical School in Fall 2016.

Awards and Recognitions

Dr. Robert Chapkin
- 2015 Vice Chancellor’s Award in Excellence-Research
- University Distinguished Professor

Dr. Shaodong Guo
- 2015 American Diabetes Association Research Excellent Thomas R. Lee Award
- 2015 American Diabetes Association Career Development Award

Karen Beathard
- 2015 Dean’s Outstanding Achievement Award in Excellence

Dr. Chaodong Wu
- Texas A&M AgriLife Research 2015 Faculty Fellow

Rachel Botchlett
- 2015 Vice Chancellor’s Award in Excellence-Graduate Student Teaching

2015 Vice Chancellor’s Award in Excellence recipients. Left to Right: Dr. Chaodong Wu, Ms. Rachel M. Botchlett, Dr. Robert Chapkin.

Dr. Clinton Allred
- 2015 AgriLife Honor Scholar Award
- The Association of Former Students Distinguished Achievement Award for College-Level Teaching

Peter Murano
- 2015 AgriLife Marion Teaching Award
Kristen Hicks is a third year doctoral student in the Department of Nutrition and Food Science at Texas A&M University. Throughout her brief time at Texas A&M, she has shown herself to be innovative in her research and has represented herself as a leader for graduate students.

Kristen earned the Bachelor of Science degree in Nutrition and Microbiology from the University of Arizona in Tucson, AZ in 2012. Kristen then went on to complete a combined Master’s degree and dietetic internship at Texas A&M University-Kingsville. She became a Registered Dietitian in 2013 and continues to practice as a corporate dietitian. Her personal and professional goals are to improve the health and overall quality of life of Americans.

The research Kristen has completed with Dr. Peter Murano provides physicians with opportunities to learn and integrate nutrition into practice to better the health of their patients. Preliminary research demonstrated that although physicians in Texas rarely incorporate nutrition counseling into their practices, they were interested in education opportunities on nutrition topics in order to be able to do so. Her vehicle for providing this education is unique - webinars accredited as Continuing Medical Education (CME) credits. The webinars are hosted on Texas Medical Association’s CME library. “Webinars dealing with nutrition topics were essentially unavailable,” according to Dr. Murano, who went on to assert, “Kristen’s work represents a significant contribution to the continuing education of physicians. She is a model graduate student-demonstrating a top-level commitment to personal learning, to research and to professionalism.”

Throughout her graduate career, Kristen has been highly recognized for her efforts in her research, in the classroom and beyond. Kristen was awarded the Pathways to Doctorate Fellowship under Dr. Nancy Turner in 2013 welcoming her to Texas A&M. Her early research led her to present a poster presentation at Experimental Biology. Since then, some of the many awards she has received include Distinguished Poster Presentation at the Pathways Symposium, Nutrition and Food Science Outstanding Graduate Teaching Award and Jane Elizabeth Watkins Cohen Nutrition Education Scholarship. Kristen has worked as a research assistant and teaching assistant in addition to vigorous completing the coursework in her own graduate program. Kristen also founded and is president of the “Aggie Graduate and Professional Community Club”, an organization exceeding 1,300 graduate students. Kristen describes herself as hard working, passionate and driven for success.

Upon graduation, Ms. Hicks hopes to continue to work with Dr. Murano to develop nutrition education webinars that will serve medical students and medical professionals nationwide. Nutrition has changed her life, and she would like nothing more than to continue to engage her talents and abilities in the field to transform the lives of others.
High Impact Learning Through Study Abroad

The Nutrition and Food Science Department has been offering Study Abroad Courses since 2012 with a focus on international nutrition, Mediterranean nutrition and food processing. Courses take place for 5 weeks during the first Summer session.

The trip to Brazil focuses on sustainable nutrition and the processing of traditional and innovative foods where students study side by side with Brazilian students at Brazilian Universities. Several hands-on modules work with children and the elderly or take place in food manufacturing plants where students get to develop and process foods. In 2015, twenty TAMU students participated. In addition, students experienced traditional nutrition in the Amazon region where they spent a week on an Amazon River tour and learned to prepare foods with the native Indian tribes living along the river, exploring possible nutrient deficiencies. In contrast, urban nutrition was explored in Rio De Janeiro, where it is much more difficult to gain access to balanced nutrition for the impoverished.

Study Abroad Italy focuses on Mediterranean Nutrition and traditional Italian food processing where students work in hands-on modules in vineyards, olive groves and in traditional food processing. Several modules center on the scientific background of Mediterranean nutrition. This course has its headquarters in the heart of the Cinque Terre, a United Nations Educational, Scientific and Cultural Organization Heritage site characterized by its traditional terraced agriculture. From there students and faculty travel to major food producing regions including Parma-Moena, Florence-Siena, and Rome-Perugia, where students meet with Food and Agriculture Organization officials and discuss international food policy.

“Study Abroad really changed my life” said Morgan Sinclair, who participated in study abroad trips to Italy and Brazil, “I did not only learn about food processing specific to another country, but also learned to work with local students and communicate in another language”.

While students have some free time for sight-seeing and relaxation, study abroad trips are no vacation. In addition to lectures and laboratory sessions with faculty from TAMU and international Universities, students complete exams and graded assignments and are involved in daily language classes, guided cultural explorations and field trips. Currently, the NFSC department offers study abroad to Italy in even years and to Brazil in odd years.

Dietetic Internship Preparation Workshop

The Texas A&M Dietetic Internship Preparation Workshop (DIPW), sponsored by the Department of Nutrition and Food Science (NFSC), held its 8th annual workshop this past October. The DIPW serves to help students in the Didactic Program in Dietetics (DPD) learn about the dietetic internship (DI) process, explore various fields in dietetics, and network with dietetic professionals and students from across Texas. This year, we welcomed over 230 dietetic students to Texas A&M! As part of the advancement of the workshop, this year’s committee organized a brand new aspect to the DIPW, the DI Fair, allowing students the opportunity to mix and mingle with more than 10 DI programs and Directors. In the past year alone, the DIPW event has almost doubled in size. Participation this year included students from over 12 universities in Texas, as well as students from Indiana, Kansas, and New Jersey. In addition, the DIPW continued our partnership with the Texas Student Dietetic Association, with their meeting following the workshop to encourage student involvement across the state of Texas.

The DIPW is also an opportunity for nutrition dietetic students to enhance their leadership, interpersonal communication, teamwork, time management and professional skills. The DIPW was co-chaired by Carley Carpenter and Tori Parsons, two senior dietetic students, and coordinated with the hard work and assistance of 12 DPD students. The event was supervised by Texas A&M DPD Director, Karen Beathard. The hard work and dedication of these students ensured the success of this year’s event.

Many thanks are due to the NFSC Department Head, Dr. Boon Chew, the DIPW co-chairs and committee members for their work in the success of the workshop this year.
IFANCA and Dr. Riaz

Understanding faith-centered and ethnic diets is not only a critical component of many international industries, but it is also an imperative aspect of navigating a multicultural, interdependent world. The course in religious and ethnic foods at Texas A&M University is the only program in the country that offers an exploration of the many dietary needs that span our globe. Our program is unique in its comprehensive look at diets from an array of faiths (Islam, Judaism, Buddhism, Sikhism, Mormonism, etc.) and ethnicities. Additionally, we will also have the ability to incorporate an assessment of other markets such as vegetarians, vegans and those with other allergies.

Having this course available to our students would give them the opportunity to explore product development, production and nutritional practices with an emphasis on learning the needs and priorities of different cultural groups around the world.

This program has been made possible with a contribution of $5,000,000 from the Islamic Food and Nutrition Council of America (IFANCA). Distributions from this endowment will be used to provide faculty support in nutrition and food diversity, a lecture series, graduate research, undergraduate and high-impact learning opportunities, and facilities in the Department of Nutrition and Food Science, the program will be under the guidance of Dr. Mian Riaz, a Graduate Faculty in the department.

Cutthroat-Chopped

The joint meeting of the Institute of Food Technologists’ Alamo and Longhorn Sections “Aggie Day” was held on Friday Oct. 21st, 2016 at Cater-Mattil Hall. Attendees were informed of accomplishments and highlights of the year with a new B.S. degree program under development for 2018 called Food Systems Industry Management and the development of a new research and outreach initiative called Food Diversity Innovation Program that will have an academic certificate in Food Diversity. This year created our own version of the Food Network’s “Chopped” competition, but with an added twist from “Cutthroat Kitchen”. Student and IFT members teamed up in two rounds of fierce product competition on who could make the best topping for a hotdog. Teams fought over ingredients, the use of a grill, and even for a bun; and one team was forced to use their bare hands! If you have never had a Nutella, Poprock, mustard powder hotdog served on a tortilla then you certainly missed out. The final round was a face-off between the mandatory uses of canned squid (in its own ink) versus spicy wasabi peas. The winning team was celebrated and the brave judges pitted by all. The event featured a hotdog cookout and volleyball, and lots of interaction with our Texas food industry representatives. Thank you to the companies that provided financial support and ingredients for the event and competition.
Nutrition Education through YouTube

The Texas A&M AgriLife Extension Service Food and Nutrition Unit is reaching out to a new audience, YouTube viewers. Over the last year, nutrition specialists, students, and student volunteers have written, produced, and edited nutrition education videos.

The goal is to provide quality, short, and entertaining videos, which promote research and evidence based practices viewers can use in their daily lives. Videos focus on various trending nutrition topics, food comparisons, and commonly asked questions under three minutes and have an accompanying infographic!

Videos such as Food Face-Off: Honey versus Sugar, How to Freeze Blueberries for the Berry Best Quality, and Safely Thawing a Turkey have reached viewers from Texas to Europe. In fact the grilling safety video, Light It Up! Grilling Safety was shared and retweeted by the Texas A&M University.

If you are interested in learning more about nutrition topics, check out our YouTube channel TAMU Food and Nutrition Extension at http://bit.ly/TAMUFOOD. Be sure to click subscribe for newly released videos.

Extension is Helping Families Grow Fresh Produce for Healthier Diets

In Cameron, Hidalgo and Starr counties, an estimated 34% of the population lives in poverty. More than one out of four residents resides in a food desert, which is defined as a community where healthy foods are high in cost and limited in availability. The Growing and Nourishing Healthy Communities program aims to increase the availability of healthy foods, specifically fresh produce, through the use of community gardens. Since the program began in 2014, more than 475 families have enrolled in the program, built 25 community gardens and harvested more than 7,000 pounds of vegetables with support from Extension educators and Master Gardeners. Incorporating nutrition education into the program has helped participants learn how to prepare the vegetables in traditional recipes.

Follow our program success on Facebook: www.facebook.com/GrowingandNourishingHealthyCommunities

Teaching Food Service Employees to Prepare and Serve Safe Food

More than half of all food borne illnesses have been attributed to the improper handling of food prepared away from home. Because a large percentage our food dollars is spent on food prepared outside the home, food safety is a top concern among consumers.

To meet the need for quality food safety education in Texas retail food establishments, the Food Protection Management (FPM) program, which consists of several components, was developed.
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To meet the need for quality food safety education in Texas retail food establishments, the Food Protection Management (FPM) program, which consists of several components, was developed.
One of the components of the FPM program is the accredited food handler course, Food Safety: It's in Your Hands. This course is targeted towards front-line food service workers and focuses on reducing cross contamination and time/temperature abuse, as well as personal hygiene. The course is available in more than 90 counties across the state and online at http://foodsafetyonline.tamu.edu. In 2015, more than 3900 individuals completed this course and significantly improved their knowledge of food safety.
Dr. Murano's current research emphasis is in three areas: (1) determining the nutritional and cost consequences of plate waste by schoolchildren participating in USDA’s NSLP; (2) assessing and addressing the lack of nutrition education for medical students and for physicians; and (3) examining dietary consumption and feeding behaviors of WIC participants in the National Food and Nutrition Study (NATFAN) before and after implementation of the revised WIC food packages:

1) The revised, healthier USDA standards for school meals have been criticized for contributing to increased plate waste – a legitimate concern. Our research provides measures of plate waste for main entrées, fruits and vegetables from elementary school lunches before and after implementation of new school meal standards, examining factors affecting waste, and assessed associated costs. In addition to fruit plate waste, the main entrée and vegetable pairings associated with the least and most plate waste are being identified along with the associated intake of calories and nutrients. Strategies to minimize waste and increase consumption of healthier food choices are being developed. Funding has been provided by the Alliance for Potato Research and Education, and the California Table Grape Commission.

2) Following completion of a study of Texas A&M medical students, the Physician Nutrition Education Program (PNEP) is being developed as a two phase initiative to address the current lack of nutrition education opportunities for physicians. Phase 1 examines nutrition use in practice and obtains physician feedback from an online survey, while in phase 2 we focus on nutrition webinar development, based in part on Phase 1 information collected. Each webinar will feature research-based nutrition topics of importance, available to physicians for continuing medical education (CME) credits through the Texas Medical Association “On-Demand” library. First, a “Physician Opinion Survey” was developed and validated to determine current nutrition knowledge and practices of Texas physicians. Using this information, the webinars are being constructed to increase specific knowledge areas, and to provide resources to incorporate nutrition discussions with patients. Webinars also will highlight the importance of collaborating with a Registered Dietitian (RD).

Dr. Nancy Turner

The option for us all to go into space will be possible in the future. For some, this sounds thrilling but for others the fear of weightlessness or being on a rocket prevents them from considering the idea.

However, most people never think about the other risks astronauts face on a long duration mission. Those risks include an adequate and healthy food supply (let’s face it there are no HEB there), and the radiation in space. On Earth, we are protected by our atmosphere and gravity fields that divert most of the high-energy ionizing radiation away from Earth. However, in space we are exposed to this radiation and it may cause a variety of health outcomes.

One tissue that is sensitive to radiation-induced tumor development is the colon. Radiation is capable of damaging DNA, or causing mutations that transform a normal cell into one capable of becoming a tumor. This transformation is especially important if it occurs in the adult stem cell population. Because those cells produce all other cells lining the colon, if they are converted into cancerous cells, then all of their offspring will also be cancerous. Considering that the second-leading cause of death from cancer here on Earth is colon cancer, it is obvious that we need to develop effective countermeasures capable of preventing any enhancement of colon cancer risk caused by radiation exposure.

We recently received a NASA grant that is designed to understand the relative sensitivity of colon adult stem cells to radiation, and to determine if it is possible to mitigate some of those changes through
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