

THE PATHWAY

2019-2020

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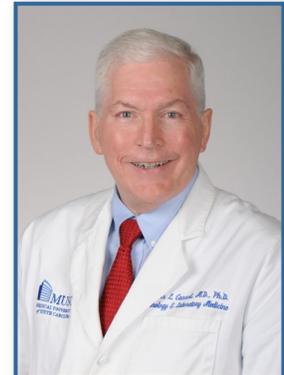
The Launch of MUSC Pathology Outreach Services, Four Years in the Making

The Background

When Dr. Dirk Elston came to MUSC July 1st 2015 as Chair of the Department of Dermatology and Dermatologic Surgery, with a dual appointment in the Department of Pathology and Laboratory Medicine, he brought with him a vision for a joint Dermatology/Pathology Outreach program at MUSC. Dr. Steven Carroll, Chair of the Department of Pathology and Laboratory Medicine, shared in this vision and, 6 months before Dr. Elston's arrival, he tasked MUSC's Office of Strategic Planning with the development of a Market Analysis and Outreach Discussion Document to get the ball rolling. This Market Analysis document culminated from a detailed study of market opportunities and competition in surrounding counties and the state, Q&A interviews with other existing successful outreach programs and well as interviews with internal departmental leaders, and a Market Overview provided by ARUP Laboratories. In short, it showed there is a vast un-tapped market in South Carolina for pathology services. Armed with this data, Dr. Carroll and Dr. Elston paved the way with MUSC leadership, convincing them of this area of opportunity, and getting their blessing to move forward with making this vision a reality. But as they say, the devil is in the details.

As the Pathology Department's Vice-Chair for Finance and Administration, Beth Hansell took the reins of this project from the very beginning and she soon found out this was going to be no easy task. With the department's Fiscal Manager, Lisa Coulter, by her side, Beth and her team were charting new territory at MUSC. There were many major hurdles to cross from legal structure to compliance issues to billing structure. Each time they would go down one path and start to make headway, they would hit a roadblock and the project would stall out for a period of time until it was kick-started again - usually by Dr. Elston – and off they would go again down another path only to hit another road block. This scenario continued over the next couple of years.

Around mid-2017 with a turn-over in MUHA and MUSCP Leadership the Derspath Outreach project garnered new attention and began to pick up some steam. Beth and Dr. Carroll reached out to Karyn Rae, Director of Managed Care, to help with determining a path forward and how to most efficiently get there, and her help was instrumental. Beginning the following January, Ms. Rae hired a new analyst in her department – Rex Conner – who had extensive experience in the medical billing arena, and she allowed Pathology to “borrow” his expertise and his time to help get the project moving forward. And that, he did.



**Steven L. Carroll, M.D.,
Ph.D., FASCP, FCAP**

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Decisions

One of the keys to making Outreach a success is to be competitive in the market place, and the only way to do this was to be able to bill under a pricing structure that is more affordable to the patient population. MUSC Pathology has the highly skilled expertise that outside physicians want to access for their patients, but the cost structure is prohibitive to most patients making MUSC Pathology's services inaccessible. The answer was global billing (instead of the patient see two separate charges for technical and professional fees, there is one "global" charge per service) and drastically cutting fees to gain a competitive edge in the market place. This would mean Pathology Outreach would need their own fee schedule, separate from MUSCP. For this and other reasons, it was decided by MUSCP Leadership that the group would be allowed to outsource the billing. Rex immediately got to work making contacts and getting quotes from outside billing services. Eventually the Pathology group settled on APS Medical Billing out of Ohio because of their reasonable fee structure and comprehensive services.

While Rex was working his magic -along with Sonya Floyd and Karyn Rae - on the billing, banking and payor contracting side, the Pathology team was working on contracting technical services. Beth had approached MUHA's Laboratory Services on several occasions between 2015 and 2017 and they unfortunately were not able to bring the technical price down to a profitable level, forcing the outreach group to turn to an outside lab. After discussions with several outside laboratories, they decided to contract with AP Laboratories, a local lab, who offered an affordable rate on technical services which included specimen supplies, and courier service.

The Pathology IT group, under the leadership of Dr. Jim Madory, has been – and continues to be - heavily involved on both the billing (Epic) and the reporting (CoPath) fronts, as it is critical to have data flow seamlessly between MUSC Pathology and APS Medical Billing as well as between MUSC Pathology and AP Laboratories. Dr. Madory's time and efforts have been invaluable and a critical piece in the push to get the operation off and running.

Another decision that had to be made was who is going to do the patient registrations and accessioning/logistics of specimens and slides? It was decided that this could be handled for the time being by Margaret Romano and Jess Welter in the department's Histocore Laboratory. This just made the most sense being that the lab is University space and that Margaret and Jess are already experienced with handling clinical trials and research specimens, so the team leaders knew that this would be an easy transition for them. This did require them to go through Epic and CoPath training as well as being set up with IT equipment, but they have taken this disruption in routine in stride and been real team players throughout the process. After Margaret's retirement in May 2019, Jess took the lead and Shelby Carter was hired on to fill the vacancy, and each stepped into her new role seamlessly. We are hoping to soon fill a Practice Manager position to help with day-to-day management tasks as we begin to grow our client base.

Launch Day

Beginning in January of 2019, everything seemed to be in place with a few minor exceptions and we were closing in on a launch date. The group decided that instead of diving in head-first, they would dip their toe in the water to make sure all systems and processes would flow properly before opening the flood gates. As such, Dr. Elston contacted a couple of contributors in early January that he knew would be ready to send specimens immediately and that would be understanding of any glitches in the new operation. The group decided to just start with just one of those contributors to test the waters and on March 14, 2019 the first specimens were received and processed. (Queue the Hallelujah Choir.) There have been a few "bugs" to work out, as expected, along the way but all-in-all it is going well thus far. The Outreach group is not quite to the point of being ready to open the flood gates, but it won't be much longer.

The Future

This pilot venture is phase one of a three phase plan. The plan for phase one (Dermatopathology Pilot) is to receive skin biopsy specimens from non-MUSC physicians, gradually scaling up volumes over the next five years and at some point bring the technical in-house, once it is determined that it is cost-effective to do so. Phase two (Surgical Pathology) will be to expand to receiving all tissue specimens from non-MUSC physicians. This would initially be targeted to subspecialty areas that are not cost effective for private practice pathology groups such as neuropathology, renal pathology, and nerve/muscle biopsies. In phase two, the group would also seek to partner with regional hospitals that want us to provide surgical pathology support – digital pathology likely being the most effective method. Phase three would encompass the expansion into Clinical Pathology. The long-term plan is to open a separate off-campus Outreach Laboratory either in late phase two or phase three.

The MUSC Pathology Outreach Services "vision" has at long last become a reality. While it is in its very early stages and will no doubt have some growing pains, all who were involved – and there were many - in getting this program launched can look back and be proud of what has been accomplished. Much thanks to all!

CONGRATULATIONS!!

FLEX 22 (Year 1) Nominations:

Sally Self

COM Year 2 Nominations:

Jerry Squires

Steven Carroll

Nick Batalis

WINNER of the 2019 Faculty Excellence Award for COM Year 2: Nick Batalis

ASCP Annual Meeting Phoenix, AZ - September 2019

Award Presentations

Dr. Lewin and current
ASCP President, Melissa Upton



Dr. Lewin and two past present award
winners: Dr. Wes Schreiber and Dr. Mark
Stoler



CONGRATULATIONS!!



Beth Hansell Receives Award (recognized in Dean's Newsletter)

Congratulations to Beth Hansell, Vice Chair of Finance and Administration for the Department of Pathology and Laboratory Medicine. She received the 2020 Pathology Department Administrators (PDAS) Distinguished Service Award from the Association of Pathology Chairs in recognition of her “extraordinary contributions in the field of academic pathology administration.” In addition to her work at MUSC, she has been a long-term leader in the PDAS section and council, mentoring many future leaders in the field. The award was presented at the 2020 Virtual Association of Pathology Chairs annual meeting.



CONGRATULATIONS!

To: Dr. Chelsea Wright-Void and Family

Calliope Ann Void

July 4, 2020

7 lbs., 7 oz.



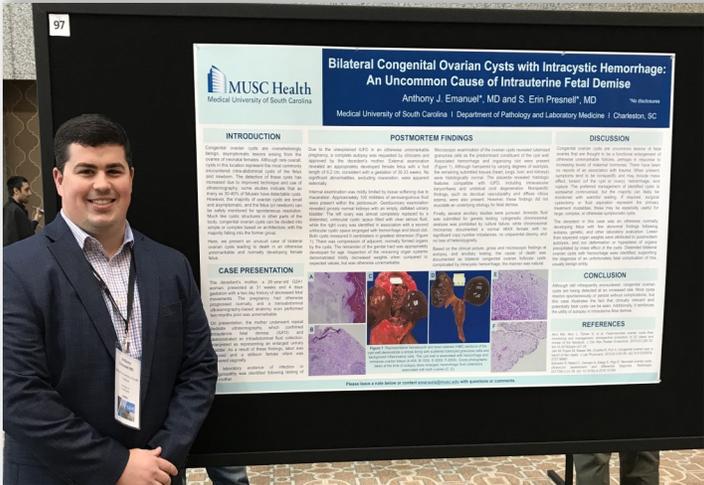
IT'S A GIRL!

PRESENTATIONS

National Association of Medical Examiners (NAME)
2019 Annual Meeting
October 18—22, 2019
Kansas City, Missouri



Dr. Chad Butler



Dr. Jake Emanuel

RESIDENCY MATCH DAY - 2019

The 2019 residency match was held in March and our department was fortunate to fill our open positions with five outstanding incoming residents. Overall, 32 of 601 first year pathology positions across the country, spread across 17 residency programs, went unfilled, including 14 positions in our Southern region that extends roughly from Texas to West Virginia and downward. The total number of matched applicants across the country has not changed much over the past few years, though there has been a fairly dramatic drop in medical students from U.S. allopathic medical schools (like MUSC) applying and matching into pathology programs from ~280 five years ago, to ~220 the previous two years, to just 201 this year. This environment has raised competition between programs to match those medical students, but has also led to an uptick in the numbers of applicants from U.S. osteopathic medical schools. This has filtered down to our program as we have matched at least one osteopathic graduate each of the last three years, including two individuals this year. This class's diversity is also exemplified by the geographic spread and the backgrounds of the individuals. Please join me in welcoming the 2023 class of MUSC Pathology Residents:



Alexandria Avery- Lake Erie College of Osteopathic Medicine, Erie, PA: Alex is a native of New York who was born and raised in the Buffalo area before attending SUNY-Buffalo for her undergraduate education. Alex was introduced to pathology the following year when working as a medical assistant in a Dermatology office and her interest in the field was confirmed during her clinical rotations in medical school. While still wanting to explore more of the field, Alex's work in Dermatology has led to an interest in Dermatopathology.



Lauren Crowson – Campbell University College of Osteopathic Medicine, Buies Creek, NC: Lauren grew up in North Carolina and attended East Carolina University for her undergraduate studies. Lauren's interest in pathology began in high school when she had an opportunity to complete an internship working with forensic pathologist; this interest was further cultivated in college when she had an opportunity to work as an autopsy assistant in a busy academic medical center. Upon graduation, Lauren pursued graduate training in forensic sciences and worked in the North Carolina Office of the Chief Medical Examiner for several years before attending medical school, during which she continued to work with the medical examiner when time allowed.



Matthew Kilpatrick- LSU-Shreveport, Shreveport, LA: Matthew was born in Baton Rouge, LA and went to college in his hometown. Upon graduation, Matthew stayed within the LSU system but went to Shreveport for his medical school training. Matthew came from a family of physicians, but it was not until medical school that his interest in pathology flourished. In particular, he became interested in the research side of things, having worked on two pathology oriented projects including one that was more of a chart review and another involving basic science research. Matthew is also a certified pilot and participated in the couple's match, with his better half matching into the family medicine program.



Vishwajeeth Pasham- Medical College of Georgia at Augusta University, Augusta, GA: Vishu was born in India and moved to the United States at an early age. He attended college at the University of South Florida before moving onto MCG for medical school. Vishu was initially interested in gastroenterology, but exposure to pathology during his 2nd year of medical school helped change his mind and clinical rotations in pathology confirmed his career choice. Like Matthew, he is interested in research and completed a couple projects during college and medical school; while none of these projects were pathology focused per se, these prior experiences helped develop skills that will certainly aid him with projects in the future.



Christopher Sullivan – Geisinger Commonwealth School of Medicine, Scranton, PA: Chris was born in Philadelphia and has spent the vast majority of his life in Pennsylvania, having obtained two degrees from Temple University before moving onto medical school. Chris pursued a career in graphic design after graduating college before returning to school to complete prerequisite classes required for medical school. Though two entirely different career paths, Chris sees his creativity and problem solving skills as a link between his passions. Chris has been heavily involved with various leadership initiatives in medical school, including using his design skills from his prior career. We were fortunate to host Chris for a rotation last year as a visiting medical student and are greatly looking forward to working with him again.

RESIDENCY MATCH DAY - 2020



Corynne Caballero
B.S. Louisiana State University
M.D. Louisiana Health Sciences Center Shreveport



Elicia Goodale
B.A. Wheaton College
A.A.S. Defense Language Institute Foreign Language Center
M.D. Florida Atlantic University



Ivana Hernandez
B.S. University of Florida
M.S. University of South Florida
D.O. Alabama College of Osteopathic Medicine



Chelsea Kramish
B.S. Florida State University
D.O. Nova Southeastern University College of Osteopathic Medicine



Chelsea Wright-Void
B.S. University of South Carolina
M.D. Medical University of South Carolina

Match results for 2020

- ◆ 587/603 total spots filled last year
- ◆ 204/229 US MD[®] Seniors matched
 - ◆ 67/77 DO Seniors
- ◆ 30 US-DO Non-Seniors
 - ◆ 54 US IMG
 - ◆ 232 Non-US IMG

Resident Accomplishments

- ◆ Again scored exceedingly well on the recent in-service exam
- ◆ 65th percentile nationally as a program
- ◆ Above national average in all subject areas
- ◆ Last 6 classes have all passed ABP board exams on 1st attempt
- ◆ 26 publications from July 19- June 20
- ◆ Included 13 with PubMed ID's
- ◆ 15 presentations at local, regional, and national meetings



Department of Pathology and Laboratory Medicine 2019-2020 Residents & Fellows

	Residents					Fellows		
						Surgical Pathology	Surgical Pathology/GI	
PGY-1								
PGY-2								
PGY-3								
PGY-4								
						Clinical Chemistry	Forensic Pathology	
							Dermatopathology	
							Cytopathology	



Department of Pathology and Laboratory Medicine 2020-2021 Residents & Fellows

	Residents					Fellows		
						Surgical Pathology	Surgical Pathology/GI	
PGY-1								
PGY-2								
PGY-3								
PGY-4								
						Clinical Chemistry	Neuropathology	
								Dermatopathology
								Cytopathology

END OF YEAR PARTY

May 5, 2019

Founders Hall, James Island County Park



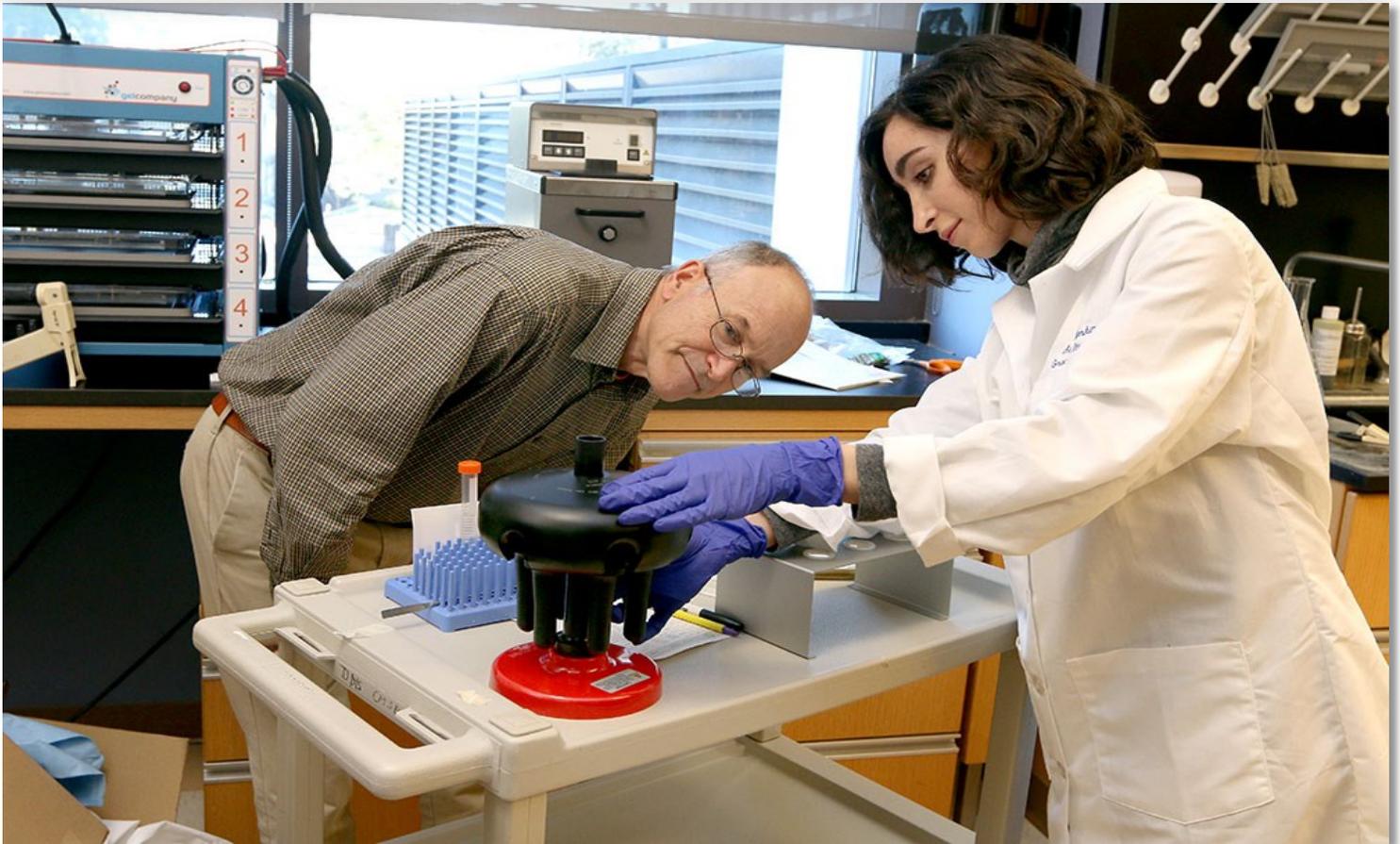
Graduating Class of 2020



Personality Awards



MUSC-led study links chemical in laxatives, drinks and more to possible metabolic and weight-related



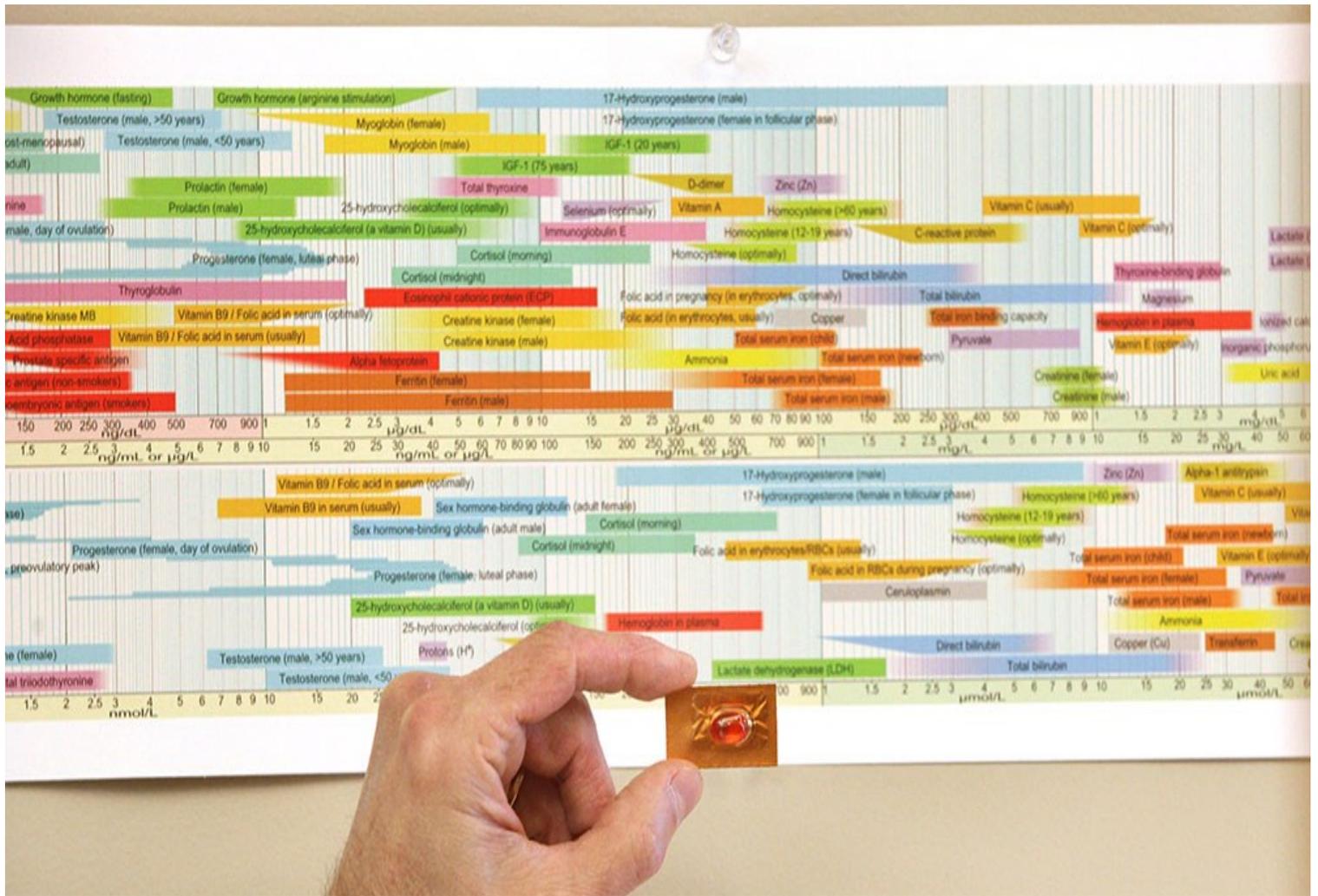
Researcher Demetri Spyropoulos works with student Hannah Neimy.

A report published online today in the journal [Scientific Reports](#) suggests a chemical used in everything from cocoa to laxatives might be linked to metabolic and weight-related problems.

Diocetyl sodium sulfosuccinate, or DOSS, is classified as “generally recognized as safe” by the Food and Drug Administration. That means it doesn’t have to be listed in the ingredients as a food additive. But that hasn’t kept it from coming under scrutiny from some researchers as a possible “obesogen,” something that might promote obesity.

The study, led by scientists at the Medical University of South Carolina, is part of an effort to pinpoint which factors in our everyday lives may be causing us to eat more, move less and pack on the fat. The research was pre-clinical, meaning it was done in a lab and didn’t involve any testing on people. But the researchers say the animal model results are compelling and the next step will be clinical diagnostic and intervention trials.

MUSC College of Medicine professor [Demetri Spyropoulos, Ph.D.](#), was senior investigator on the study. It looked at the possible effects of DOSS on one group likely to be exposed to it: women taking laxatives that contain DOSS, such as Colace, while pregnant and breastfeeding. It found the women might gain extra pounds and their children might have multiple weight-related effects in the long term.



Spyropoulos holds a capsule of the type of laxative used in his team's study study.

"We're not arguing against the simple math," Spyropoulos said. "You have a certain number of calories you take in and a certain number of calories that you burn. And if you take in more calories than you burn, you're going to gain weight."

What he is arguing is that DOSS might affect the body's sense of hunger and what it does with the calories it takes in. "Obese people appear to be resistant to the appetite-suppressing effects of leptin. Our study shows that DOSS might be having the same effect. It might also change how the food coming into the body is handled. It will tell the body to put it into fat storage instead of making it available for energy use. So you're hungrier sooner and you have less energy."

According to the study, possible effects of DOSS exposure might include:

- Increased body mass, fat mass, fat percentage and reduced bone area.
- Altered circulating adipokine levels, meaning the body shows some of the hallmarks of obesity and metabolic syndrome.
- Chronic Inflammation. Obesity and type 2 diabetes are chronic inflammatory diseases.
- Changes in gene expression.
- Higher risk of glucose intolerance.
- Elevated circulating phospholipid patterns, meaning they showed changes similar to what you'd see in an obese person with diabetes caused by a long-term, high-fat diet.

This isn't Spyropoulos' first study to focus on DOSS. After the Deepwater Horizon oil spill in 2010, his team studied the environmental impact of the accident. The team was looking for any signs that that the spill and its cleanup might



An explosion on an oil rig caused an estimated 4 million barrels of oil to leak into the Gulf of Mexico in 2010. The cleanup effort involved almost 2 million gallons of dispersants. National Oceanic and Atmospheric Administration photo

They took samples of the oil and dispersed oil from the spill site to their labs and zeroed in on DOSS, an ingredient in used to clean up the oil. Based on the way it acted when they added the chemical to cells grown in the lab, they flagged it as a possible obesogen. They published a report on their work in 2015 in the journal [Environmental Health Perspectives](#).

The stool softener study published today was the next step, bringing it from cell culture to animal models. Alexis Temkin, Ph.D., the study's first author, said understanding how exposure to chemicals during critical windows of development can impact chronic diseases is an important way to improve public health. "Our studies on DOSS are a piece of that larger body of work." Temkin is now a toxicologist with the nonprofit [Environmental Working Group](#).

In addition to some laxatives, products that may contain DOSS include:

- Air fresheners
- Cleaning supplies
- Cocoa
- Cosmetics
- Deodorants
- Ear drops
- Fruit juice drinks
- Milk
- Sodas

Spyropoulos said it's important to keep pushing to find ways to keep our country's weight problems from getting worse. "Right now, nearly 40 percent of Americans are obese or heavier, and in ten years it's projected to be over 50 percent. Half of all Americans right now are either borderline diabetic or diabetic. It's been called by many an epidemic."

He said the risk for some people may be higher than others. "Our current work is on finding out which populations might be especially susceptible. We're following a genetic argument, but there could be socioeconomic factors in that as well. That's the nature of our studies."

The DOSS study out today was funded by the [Gulf of Mexico Research Initiative](#) and the [South Carolina Clinical and Translational Research Institute](#) at MUSC. His team is currently funded by a Foundation for Research Development Award.

Spyropoulos said there's a lot more work to be done. The new study is not definitive. "One thing was the dosage we used. We used on the high end of what women would have taken purely through Colace/docusate. Our argument is that this isn't the only source of DOSS. There are dietary sources. If someone drinks a lot of soda, drinks a lot of milk, for example, they may be exposed to more DOSS."

This article was given to us by The Catalyst



RESEARCH DIVISION UPDATE

Submitted

Statistics for the Division of Research **January-December, 2019.**
71 proposals were submitted requesting **\$13,647,368.78** in total first year costs.
 Also, during this period **26 grants** were awarded totaling **\$3,396,776.40.**
Congratulations and many thanks to everyone involved in obtaining these awards!

Amanda C. LaRue, Ph.D., Vice Chair of Research

Principal Investigator	Proposed Start Date	Title	Total 1 st Yr Submitted
Abdul, Yasir	12/01/19	Vasotrophic Uncoupling in Cognitive Impairment: Inflammation, Sex and Diabetes	\$99,980.00
Black, Laurel	04/01/20	Novel ErbB3 Regulated Calcium Signaling Pathways and the Control of Cancer Migration and Pinocytosis.	\$61,005.00
Carroll, Steven	04/01/19	Biospecimen procurement and tissue microarray manuf for the CHTN	\$130,812.00
Chandran, Raghavendar	01/01/20	Vascular cognitive impairment in diabetes: mechanisms and intervention	\$64,226.00
Ergul, Adviyee	12/01/19	PSA: Yasir Abdul BX000347-09 - Cerebral arteriole structure/function in diabetic ischemic brain injury	\$40,339.00
Ergul, Adviyee	12/01/19	Progressive post stroke cognitive impairment: Mechanisms & Intervention	\$476,236.00
Ergul, Adviyee	12/01/19	PSA: Lianying He; BX000347-09 - Cerebral arteriole structure/function in diabetic ischemic brain injury	\$30,447.00
Ergul, Adviyee	12/01/19	PSA: Weiguo Li; BX000347-09 - Cerebral arteriole structure/function in diabetic ischemic brain injury	\$44,000.00
Ergul, Adviyee	01/01/20	Vascular Injury and Recovery in Diabetic Ischemic Stroke	\$455,812.00
Ergul, Adviyee	10/01/20	Endoflammation: Mechanistic links to BBB dysfunction and cognitive impairment	\$379,368.00
Ergul, Adviyee	12/01/19	Cerebral arteriole structure/function in diabetic ischemic brain injury	\$26,563.00
Ergul, Adviyee	04/01/20	Vascular Injury and Recovery in Diabetic Ischemic Stroke	\$458,981.00
Fan, Hongkuan	09/01/19	The Role of Pericytes in the Vascular Dysfunction of Sepsis	\$194,350.00
Fan, Hongkuan	04/01/20	The Beneficial effects of Endothelial Progenitor Cells in the Vascular Dysfunction	\$534,663.00
Fan, Hongkuan	02/01/19	SCRA Academic Programs Maturation Fund Matching Grant	\$13,500.00
Fan, Hongkuan	07/01/20	The Beneficial effects of Endothelial Progenitor Cells in the Vascular Dysfunction	\$373,750.00
Fan, Hongkuan	09/21/19	The Role of Pericytes in the Vascular Dysfunction of Sepsis	\$69,440.00
Feng, Gong	07/01/19	Liver Cell-Targeting Drug Delivery System for Decitabine and Tetrahydrouridine in the Treatment of Hepatocellular Carcinoma	\$177,455.78
Findlay, Victoria	10/01/19	Chronic consumption of AGEs represent an early lifestyle factor leading to increased breast cancer risk	\$468,498.00
Findlay, Victoria	07/01/20	Lifestyle associated reactive metabolites and their negative impact on breast cancer risk	\$546,845.00
Hill, William	04/01/19	Age Induced Impairment of Nutrient Signaling Results in Bone Loss - 2P01AG036675	\$79,169.00
Hill, William	04/01/20	Age-Related Kynurenine Accumulation Impairs miRNA and Hdac Epigenetic Regulation of the SDF-1 Axis Resulting in Bone Loss	\$569,478.00
Hill, William	04/01/19	Age Induced Impairment of Nutrient Signaling Results in Bone Loss	\$79,169.00
Kang, Inhong	12/01/19	Augmenting HSC transplantation in Osteogenesis Imperfecta Osteogenesis imperfecta foundation	\$50,000.00
Krisanits, Bradley	07/01/20	The Impact of Physical Activity on the Oncogenic Effects of Advanced Glycation End-Products	\$31,409.00
Lang, Hainan	09/13/19	Experimental and Clinical Studies of Presbycusis - Project 3	\$294,138.00
Lang, Hainan	04/01/20	"Peripheral auditory system defects and autism-like behavior"	\$193,926.00
Li, Weiguo	07/01/20	Cognitive Decline in PTSD: Vascular Mechanisms	\$63,000.00
Li, Weiguo	01/01/19	Cognitive impairment in diabetes: Endothelial mechanisms & intervention	\$100,000.00

RESEARCH DIVISION UPDATE—Cont'd

Mehrotra, Meenal	01/01/18	Regulation of HSCs and HSC-derived Osteoblasts in Osteogenesis Imperfecta	\$32,890.00
Mehrotra, Meenal	09/01/19	Treg Transplantation as a Therapy in Osteogenesis Imperfecta	\$224,250.00
Mehrotra, Meenal	09/01/19	Novel Role of hematopoietic-derived cells from PDL in periodontal regeneration	\$369,155.00
Mehrotra, Meenal	09/01/19	Regulation of Osteosarcoma Progression by Osteoblasts via Sphingolipid Pathway	\$373,748.00
Mehrotra, Meenal	10/01/19	CD36-Sphingosine 1-Phosphate Axis in Osteosarcoma Progression	\$124,999.00
Mehrotra, Meenal	04/01/20	Role of Periodontal Ligament Cells in Alzheimer's Disease	\$224,250.00
Mehrotra, Meenal	10/01/19	CD36=Sphingosine 1-Phosphate Axis in Osteosarcoma Progression	\$125,000.00
Mehrotra, Meenal	07/01/20	Role of Sphingolipid Signaling in Osteosarcoma Microenvironment	\$224,250.00
Mehrotra, Meenal	12/01/19	Role of Periodontal Pathogen, Porphyromonas gingivalis, in Onset and Progression of Alzheimer's Disease	\$100,000.00
Metts, Christopher	06/01/19	VA Headache Center of Excellence	\$150,000.00
Noble, Kenyaria	01/01/20	Alterations of Sphingolipid Signaling and Macrophage Function in Age-Related Hearing Loss	\$42,975.00
Noble, Kenyaria	07/01/19	Contributions of Immune Cell Dysfunction to Age-Related Hearing Loss	\$5,000.00
Olar, Adriana	07/01/19	Proteomics Characterization of Meningioma Cell Lines	\$10,000.00
Sha, Suhua	01/01/20	Molecular mechanisms in noise-induced hearing loss	\$285,919.00
Sha, Suhua	01/01/20	Molecular mechanisms in noise-induced hearing loss	\$31,769.00
Sha, Suhua	04/19/19	Shaping Next Generation Aminoglycoside Antibiotics for Treatment of Multidrug-Resistant Diseases	\$117,524.00
Sha, Suhua	09/01/19	Attenuating age-related hearing impairment and AD in a plaque and tangle-bearing mouse model by Rapamycin, a lysosomal activator	\$739,873.00
Sha, Suhua	04/01/20	Molecular mechanisms in cyclodextrin-induced hearing loss	\$224,250.00
Sha, Suhua	08/01/19	Shaping Next Generation Aminoglycoside Antibiotics for Treatment of Multidrug-Resistant Diseases	\$78,350.00
Sha, Suhua	04/01/20	Shaping Next Generation Aminoglycoside Antibiotics for Treatment of Multidrug-Resistant Diseases	\$162,265.00
Singh, Avtar	01/01/20	VA PSA Research Specialist III: Mechanisms of Neuroprotective Therapy in TBI	\$18,740.00
Singh, Avtar	01/01/20	PSA: Mushfiquddin Khan; BX003401; Mechanisms of Neuroprotective Therapy in TBI	\$20,598.00
Singh, Avtar	04/01/20	PSA: Mushfiquddin Khan; BX003401; Mechanisms of Neuroprotective Therapy in TBI	\$62,978.00
Spyropoulos, Demetri	01/01/20	Preservation of vasculature for later reconstructive surgeries	\$224,250.00
Spyropoulos, Demetri	10/01/20	Preservation of debrided or excised traumatic limb injury tissues for later reconstructive surgeries	\$250,000.00
Sun, Shaoli	07/01/20	SUN - OSU Subcontract	\$13,538.00
Turner, David	01/01/20	The Role of Advanced Glycation End-Products in Breast Cancer Prognosis	\$16,174.00
Turner, David	06/01/20	AGE metabolites as a unifying biological mechanism linking lifestyle, metabolism and cancer disparity	\$367,957.00
Wang, Yong (Gavin)	10/01/19	Mechanisms of Alcohol-Induced Metastatic Progression of Breast Cancer	\$371,231.00
Wang, Yong (Gavin)	10/01/19	Role of Cancer Stem Cells in Breast Cancer Metastasis and Recurrence	\$448,500.00
Wang, Yong (Gavin)	06/01/19	HCC IDEA AWARD GRANT APPLICATION	\$50,000.00
Wang, Yong (Gavin)	07/01/19	Proteomic Analysis of Redox Signaling in Cancer Stem Cells	\$10,000.00
Wang, Yong (Gavin)	04/01/20	Mechanisms of c-Myc Inhibition-Induced Suppression of Cancer Stem Cells	\$373,750.00
Wang, Yong (Gavin)	10/01/20	Elimination of Metastasis by Targeting the Altered Lipid Metabolism in Breast Cancer	\$448,500.00
Wang, Yong (Gavin)	07/01/20	Senescence-Induced Progression of Alzheimer's Disease	\$373,750.00
Weber, Shannon	09/01/19	The Role of HER3 and IGF1R, through Non-Classical Ras Signaling, on Malignant Peripheral Nerve Sheath Tumor Progression	\$64,284.00
Won, Je-Seong	09/01/19	Nitric Oxide Metabolome In Acute Traumatic Brain Injury	\$205,561.00
Won, Je-Seong	12/01/19	Asymmetric dimethylarginine (ADMA) as a risk factor and biomarker for late-onset Alzheimer's disease - Resubmission	\$224,250.00
Total Proposals	71		\$13,647,368.78

RESEARCH DIVISION UPDATE—Awarded

Principal Investigator	Proposed Start Date	Title	Total 1st yr awarded
Carroll, Steven	04/01/19	Biospecimen procurement and tissue microarray manufacture for the CHTN	\$130,812.00
Carroll, Steven	09/01/19	South Carolina Cancer Disparities Research Center (SC CADRE) - Biorepository	\$20,239.00
Ergul, Adviyee	12/01/19	Progressive post stroke cognitive impairment: Mechanisms & Intervention	\$476,236.00
Ergul, Adviyee	12/01/19	PSA: Sarah Jamil BX000347-09	\$26,562.76
Fan, Hongkuan	04/01/19	The Beneficial Effects of Endothelial Progenitor Cells in the Vascular Dysfunction of Sepsis	\$364,124.00
Fan, Hongkuan	09/01/19	The Role of Pericytes in the Vascular Dysfunction of Sepsis	\$194,350.00
Fan, Hongkuan	09/21/19	The Role of Pericytes in the Vascular Dysfunction of Sepsis	\$69,440.00
Findlay, Victoria	09/01/19	U54 SC CADRE; Research Education Core	\$244,587.00
Findlay, Victoria	09/01/19	South Carolina Cancer Disparities Research Center (SC CaDRc)	\$74,444.00
Hill, William	07/01/18	Age Induced Impairment of Nutrient Signaling Results in Bone Loss - 2P01AG036675	\$133,997.00
Hill, William	02/04/19	PSA: Research Specialist I; 1I01CX000930-01; Bad to the Bone: Age-related Rise in Serum SDF-1 Leads to Bone Loss with Age	\$54,261.00
Hill, William	01/01/19	PSA: Staff Scientist I: Bad to the Bone: Age-related Rise in Serum SDF-1 Leads to Bone Loss with Age	\$42,766.00
Lang, Hainan	09/13/19	Experimental and Clinical Studies of Presbycusis - Project 3	\$294,138.00
Li, Weiguo	10/01/18	Increased small vessel disease in the brain and cognitive impairment in diabetes	\$5,143.48
Li, Weiguo	01/01/19	Cognitive impairment in diabetes: Endothelial mechanisms & intervention	\$100,000.00
Mehrotra, Meenal	01/01/19	Regulation of HSCs and HSC-derived Osteoblasts in Osteogenesis Imperfecta	\$328,900.00
Noble, Kenyaria	07/01/19	Contributions of Immune Cell Dysfunction to Age-Related Hearing Loss	\$5,000.00
Noble, Kenyaria	01/01/20	Alterations of Sphingolipid Signaling and Macrophage Function in Age-Related Hearing Loss	\$42,975.00
Schulte, Bradley	01/01/19	Experimental and Clinical Studies of Presbycusis	\$280,858.00
Sha, Suhua	08/01/19	Shaping Next Generation Aminoglycoside Antibiotics for Treatment of Multidrug-Resistant Diseases	\$78,351.00
Singh, Avtar	01/13/19	PSA: Mushifiquddin Khan; BX003401; Mechanisms of Neuroprotective Therapy in TBI	\$80,986.00
Singh, Avtar	01/01/19	VA PSA Research Specialist III: Mechanisms of Neuroprotective Therapy in TBI	\$73,684.16
Turner, David	01/01/19	The Role of Advanced Glycation End-Products in Breast Cancer Prognosis	\$10,667.00
Turner, David	09/01/19	South Carolina Cancer Disparities Research Center (SC CADRE) - AGE Analysis Shared Resource CORE Program	\$105,397.00
Turner, David	09/01/19	South Carolina Cancer Disparities Research Center (SC CADRE) - project 001	\$158,858.00
Total Awarded	26		\$3,396,776.40

THE RESEARCH PROCESS

