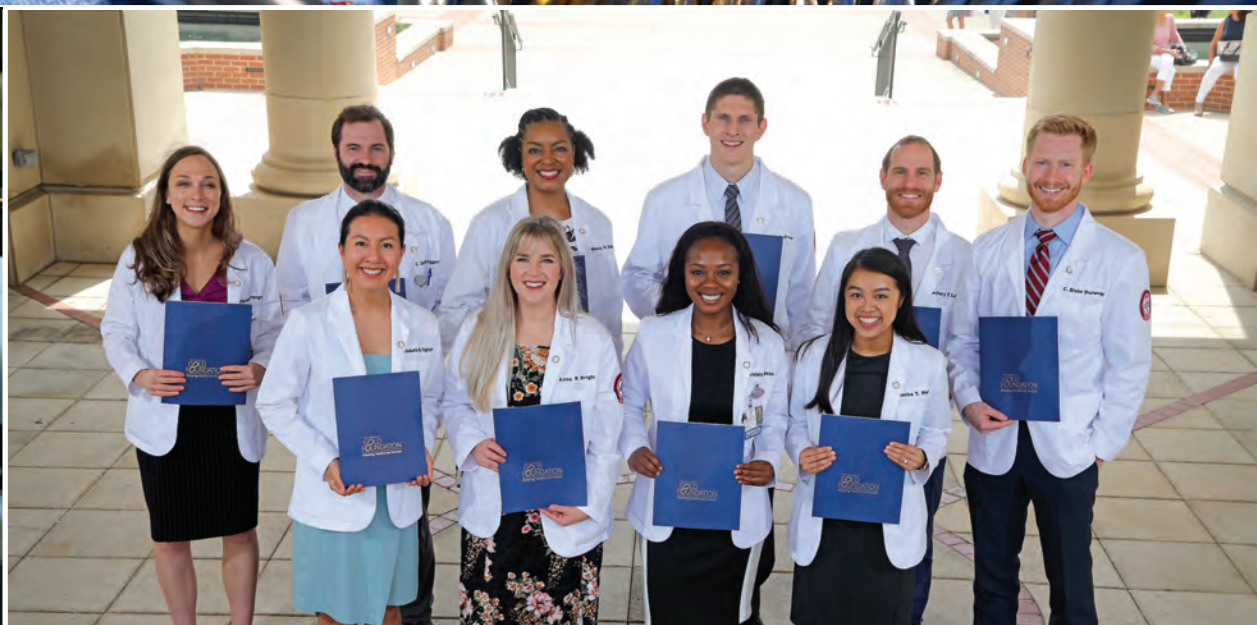


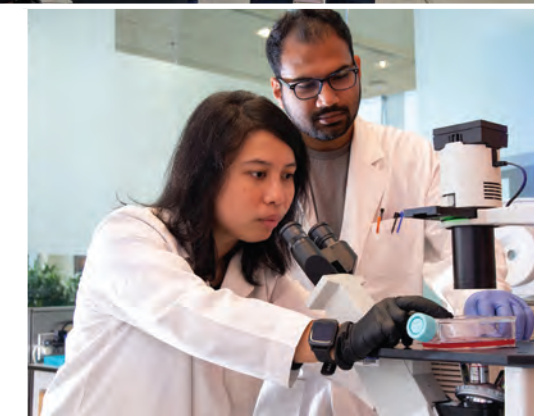
**USA** UNIVERSITY OF SOUTH ALABAMA  
COLLEGE OF MEDICINE

# ANNUAL REPORT

*October 1, 2020 - September 30, 2021*



**We educate.  
We discover.  
We serve.**



## FOREWORD

The 2020-21 annual report for the University of South Alabama College of Medicine catalogues the accomplishments of our faculty, staff and students relating to teaching, research, other scholarship and community service. Despite the COVID-19 pandemic continuing its prevalence, the accomplishments are significant.

Demonstrating their resilience, our medical students adapted to new learning environments and continued achieving superior academic performance. Once again, they scored above the national averages on standardized testing. Additionally, our graduating class adapted to a completely virtual residency interview process and matched at some of the most sought-after residency programs in the nation, all while reporting an overall satisfaction level of their medical education that exceeds the national average. Our graduate students continued their progress toward becoming the next generation of researchers, who will find new cures, treatments and preventions for the world's diseases and conditions.

As the College's research portfolio grows, creating and maintaining the infrastructure for its support is critical. The College created the position of Associate Dean for Research, and Christopher Davies, Ph.D., was chosen to fill it. Davies had been the associate provost for research infrastructure at the Medical University of South Carolina.

New, dynamic leaders for other key areas within the College expanded our ranks. Joining the faculty during this period were: Martin Heslin, M.D., director of the Mitchell Cancer Institute, formerly from the University of Alabama at Birmingham, and James Slauterbeck, M.D., chair of orthopaedic surgery and formerly from the University of Vermont. Sandra Parker, M.D., was elevated from associate chair to chair of psychiatry following the retirement of Ronald Franks, M.D.

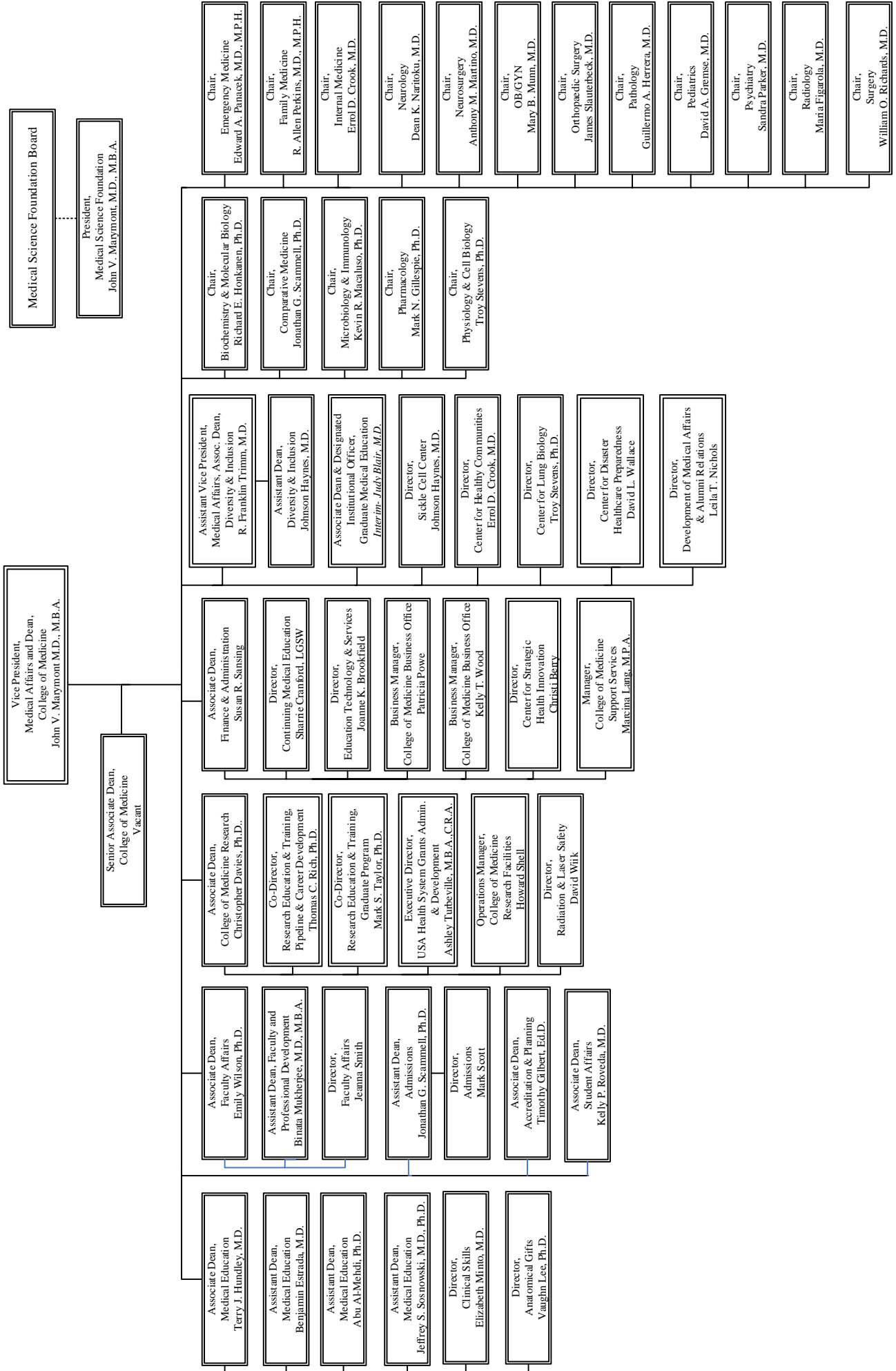
The individual and collective accomplishments detailed in this report are the result of the focused and continual effort of our excellent faculty, students and staff. I thank each of you for this successful year.

John V. Marymont, M.D., MBA  
Vice President for Medical Affairs  
Dean, University of South Alabama College of Medicine

**ANNUAL REPORT**  
**UNIVERSITY OF SOUTH ALABAMA**  
**COLLEGE OF MEDICINE**

**October 1, 2020 through September 30, 2021**

# USA College of Medicine Organizational Chart December 1, 2021



# TABLE OF CONTENTS

	Page
<b>I. Reports from Departments and Centers</b>	
Biochemistry and Molecular Biology .....	1
Comparative Medicine .....	6
Emergency Medicine .....	8
Family Medicine.....	19
Internal Medicine.....	22
Microbiology and Immunology .....	28
Neurology .....	32
Neurosurgery.....	35
Obstetrics and Gynecology.....	40
Orthopaedic Surgery .....	42
Pathology .....	45
Pediatrics .....	51
Pharmacology .....	64
Physiology and Cell Biology .....	71
Psychiatry .....	77
Radiology .....	81
Surgery.....	89
Center for Lung Biology.....	101
Center for Healthy Communities .....	104
Center for Strategic Health Innovation .....	108
Center for Disaster Healthcare Preparedness.....	110
Comprehensive Sickle Cell Center .....	114
<b>II. Report from Office of Development and Alumni Relations.....</b>	<b>116</b>
<b>III. Report from Division of Medical Education and Student Affairs.....</b>	<b>118</b>
<b>IV. Report from Admissions.....</b>	<b>141</b>
<b>V. Report from Continuing Medical Education .....</b>	<b>143</b>
<b>VI. Report from Graduate Medical Education .....</b>	<b>144</b>
<b>VII. Report from Medical Student Summer Research Program .....</b>	<b>150</b>
<b>VIII. Report from the Graduate Program in Basic Medical Sciences.....</b>	<b>155</b>
<b>IX. Summary of Extramural Support .....</b>	<b>157</b>

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Biochemistry**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Aragon IV, Boyd A, Abou Saleh L, Rich J, McDonough W, Koloteva A, Richter W. Inhibition of cAMP-phosphodiesterase 4 (PDE4) potentiates the anesthetic effects of Isoflurane in mice. *Biochem Pharmacol*. 2021 Apr;186:114477.

Balczon R, Morrow KA, Leavesley S, Francis CM, Stevens TC, Agwarambgo E, Williams C, Stevens RP, Langham G, Voth S, Cioffi EA, Weintraub SE, Stevens T. Cystatin C regulates the cytotoxicity of infection-induced  $\beta$  amyloid. *FEBS Open Bio*. 2020 Nov;10(11):2464-2477.

Boyd A, Aragon IV, Abou Saleh L, Southers D, Richter W. The cAMP-phosphodiesterase 4 (PDE4) controls  $\beta$ -adrenoceptor- and CFTR-dependent saliva secretion in mice. *Biochem J*. 2021 May 28;478(10):1891-1906.

Murphy JM, Jeong K, Cioffi DL, Campbell PM, Jo H, Ahn EE, Lim SS. Focal adhesion kinase activity and localization is critical for TNF- $\alpha$ -induced nuclear factor- $\kappa$ B activation. *Inflammation*. 2021 Jun;44(3):1130-1144.

Papke CM, Smolen KA, Swingle MR, Cressey L, Heng RA, Toporsian M, Deng L, Hagen J, Shen Y, Chung WK, Kettenbach AN, Honkanen RE. A disorder-related variant (E420K) of a PP2A-regulatory subunit (PPP2R5D) causes constitutively active AKT-mTOR signaling and uncoordinated cell growth. *J Biol Chem*. 2021 Jan-Jun;296:100313.

Singh A, Izac JR, Schuler EJA, Patel DT, Davies C & Marconi RT. High-resolution crystal structure of the *Borrelia burgdorferi* PlzA protein in complex with c-di-GMP: new insights into the interaction of c-di-GMP with the novel xPilZ domain. *Pathog Dis*. 2021 Jun 29;79(5). ftab030.

Shuhaibar LC, Kaci N, Egbert JR, Horville T, Loisy L, Vigone G, Uliasz TF, Dambroise E, Swingle MR, Honkanen RE, Biosse Duplan M, Jaffe LA, Legeai-Mallet L. Phosphatase inhibition by LB-100 enhances BMN-111 stimulation of bone growth. *JCI Insight*. 2021 May 10;6(9):e141426.

Thompson MK, Sobol RW, Prakash A. Exploiting DNA endonucleases to advance mechanisms of DNA repair. *Biology (Basel)*. 2021 Jun 14;10(6):530.

Turner JM, Connolly KL, Aberman K, Fonseca J, Singh A, Jerse AE, Nicholas RA and Davies C. (2021). Molecular features of cephalosporins important for activity against antimicrobial-resistant *Neisseria gonorrhoeae*. *ACS Infect. Dis*. 2021 7, 293-308.

Vukadin L, Kim JH, Park EY, Stone JK, Ungerleider N, Baddoo MC, Kong HK, Richard A, Tran J, Giannini H, Flemington EK, Lim SS, Ahn EE. SON inhibits megakaryocytic differentiation via repressing RUNX1 and the megakaryocytic gene expression program in acute megakaryocytic leukemia. *Cancer Gene Ther.* 2021 Sep;28(9):1000-1015.

## II. PUBLISHED ABSTRACTS

Abou Saleh L, Boyd A, Aragon I, Souterhs D, Le T, McDonough W, Koloteva A, Spadafora D, Mneimneh W, Barrington RA, Richter W. In the eye of the cytotorm: phosphodiesterase 4B (PDE4B) ablation alleviates inflammation and hypothermia in *P. Aeruginosa* lung infection. *Am J Respir Crit Care Med.* 2021;203:A1299. Available from: [https://www.atsjournals.org/doi/pdf/10.1164/ajrccmconference.2021.203.1\\_MeetingAbstracts.A1299](https://www.atsjournals.org/doi/pdf/10.1164/ajrccmconference.2021.203.1_MeetingAbstracts.A1299)

Aragon I, Boyd A, Abou Saleh L, Rich J, McDonough W, Koloteva A, Richter W. Inhibition of PDE4 potentiates the anesthetic effects of isoflurane in mice. *FASEB J.* 2021 May 14;35(S1):00153. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096/fasebj.2021.35.S1.00153>

Boyd A, Aragon I, Abou Saleh L, Richter W. Inhibition of cAMP-phosphodiesterase 4 (PDE4) induces salivation in mice. *FASEB J.* 2021 May 14;35(S1):00154. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096/fasebj.2021.35.S1.00154>

Deweever A, Subedi Paudel, Leavesley S, Balczon R, Stevens T. Iron irreversibly alters the autofluorescence of pulmonary amyloids: implications on amyloid detection in clinical samples. *Am J Respir Crit Care Med.* 2021;203:A2890. Available from: [https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1\\_MeetingAbstracts.A2890](https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1_MeetingAbstracts.A2890)

Deweever A, Subedi Paudel, Balczon R, Stevens T. Untangling the fluorescence behavior of pulmonary amyloids and *Pseudomonas aeruginosa*'s siderophore pyoverdine. *Am J Respir Crit Care Med.* 2021;203:A2894. Available from: [https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1\\_MeetingAbstracts.A2894](https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1_MeetingAbstracts.A2894)

Deweever A, Subedi Paudel SS, Balczon R, Stevens T. Copper but not zinc ions modify the autofluorescence of pathogenic and antimicrobial pulmonary amyloids. *Am J Respir Crit Care Med.* 2021;203:A2895. Available from: [https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1\\_MeetingAbstracts.A2895](https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1_MeetingAbstracts.A2895)

deWeever A, Gwin M, Voth S, Subedi Paudel S, Leavesley S, Balczon R, Stevens T. Development of a novel point of care test for toxic amyloids in patients recovering from hospital acquired pneumonia. *FASEB J.* 2021 May 14;35(S1):02108. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096/fasebj.2021.35.S1.02108>

Rodriguez Y, Murphy J, Jeong K, Ahn EE, Lim S. FAK inhibition induced FAK nuclear localization targets both tumor growth and angiogenesis. Cancer Res. 2021 Jul;81(13 Suppl):1997. Abstract no. 1997.

### **III. PUBLISHED BOOKS**

### **IV. INVITED PRESENTATIONS**

Honkanen R. Invited speaker. Characterization of PPP2R5D variant cell lines [virtual presentation]. Jordan's Guardian Angels Workshop; 2020 Dec 18; Sacramento, CA.

Honkanen R. Invited speaker. PPP2R5D-variants provide insight into Jordan's syndrome [virtual presentation]. Jordan's Guardian Angels Workshop; 2021 Feb 18; Sacramento, CA.

Honkanen R. Invited speaker. Phosphoproteomics of PPP2R5D E198K variant cell lines [virtual presentation]. Jordan's Guardian Angels Workshop; 2021 Mar 25; Sacramento, CA.

Honkanen R. Invited speaker. Phosphoproteomics of PPP2R5D E198K variant cell lines [virtual presentation]. Jordan's Guardian Angels Workshop; 2021 Mar 26; Sacramento, CA.

Honkanen R. Invited speaker. Phosphoproteomics of PPP2R5D E198K variant cell lines [virtual presentation]. Jordan's Guardian Angels Workshop; 2021 Apr 17; Sacramento, CA.

Prakash A. Invited speaker. The academic dream: one scientist's perspective [virtual presentation]. Funding 101: Multiple Perspectives on the NIH Grant Process, Society for Toxicology; 2021 May 13; Reston, VA.

### **V. NATIONAL PROFESSIONAL RECOGNITION**

Ronald Balczon: Journal Peer Review: Scientific Reports.

Christopher Davies: NIH (NIAID) Panel Member Drug Discovery and Mechanisms of Antimicrobial Resistance study section

Richard Honkanen: NIH (NIDDK) ZDK1 GRB-7 R13 Review Committee panel member; Special Emphasis Panel/Scientific Review Research grant reviewer; BSF. United States-Israel National Science Foundation

Steve Lim: NIH, Ad hoc grant reviewer, Fellowships: Physiology and Pathobiology of the Vascular and Hematological Systems ZRG1 F10C-N (20) L AHA Grant Reviewer -Basic Vascular Wall Biology 2 Study Section, Member British Medical Research Council (MRC)



Grant Reviewer, British Lung Foundation Grant Reviewer, Associate reviewer, World research Journal of Cell Biology, Journal of Cytology and Molecular Biology, Journal of Biochemistry and Physiology, Journal of Clinical Trials in Oncology, Circulation Research, Cell Research, FASEB Journal, Scientific Reports, Journal of Cell Science, Journal of Histochemistry & Cytology, International Journal of Cancer, International Journal of Molecular Sciences, Journal of Cellular Biochemistry, PLoS One, Oncotarget, Omics Journals, Molecules and Cells, Frontiers in Biology, Cellular Signaling, Oncology letters, Molecular and Clinical Oncology, Journal of Biochemistry and Physiology.

Aishwarya Prakash: NIH/NIEHS ViCTER Award R01 Study Section ZES1 ARL-D (RO)2, NIH/NCI PO1 Grant Applications Study Section ZCA1 SRB-K (M1)P, NSF Faculty Early Career Development (CAREER) Program Review, NIH Study Section ZRG1 MDCN-B (03).

Wito Richter: Cystic Fibrosis Research Inc. NSF-GRFP, NIH-ZRG1 CVRS-J (11)- Small Business: Respiratory Sciences, Editorial Board (Biochemistry and Molecular Biology), Ad hoc reviewer: Cells, AJP Lung, Endocrine, Biochemical Pharmacology.

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The department of Biochemistry and Molecular Biology contributes to the College of Medicine's mission of teaching, research and service. Although faculty recruitment was severely hampered by COVID-19, this year we continued efforts to revitalize the department. Dr. Simon Grelet joined the department as an Assistant Professor in December, and in January, Dr. Christopher Davies joined the College of Medicine as Associate Dean for Research and the department as a Professor. In addition, Dr. Balczon was promoted to Professor, and Dr. Richter was promoted to Associate Professor, with tenure. A national search for additional faculty is ongoing.

The department is a research-intensive academic unit that contributes primarily to undergraduate medical education, basic medical sciences graduate education and the service mission of the College of Medicine. In education, the faculty contribute significant effort to the systems-based medical curriculum, including the basic science (Foundation of Human Health), endocrine, cardiovascular, gastrointestinal, and musculoskeletal modules. In addition, our faculty have a major commitment to multiple graduate science courses in the various tracks. Dr. Balczon served as the director of the endocrine module. Dr. Lim is the director of a new graduate course that he developed (IDL 590 Genome engineering). Dr. Swingle served as the course director for IDL 576. Dr. Honkanen served as the course director for IDL 577. With the SARS-CoV-2 outbreak and the ensuing challenges associated with COVID-19, the departments effort devoted to education and research met substantial unforeseen challenges this year. All rapidly adapted from in-class teaching to online instruction and then to a hybrid in which some students attended class in-person and some were online. Productivity in research was also maintained by implementing social distancing, the wearing of masks, and by adopting a work schedule in which people worked in shifts. All faculty and staff devoted substantial extra effort to ensure that the quality of education and scholarly activity of the department did not suffer during the pandemic.

This year, one graduate student, Lina-Abou-Saleh, earned her Ph.D. in Basic Medical Sciences. Currently seven students enrolled in the Ph. D. Basic Medical Science graduate program are continuing their extensive small group training with faculty in the department. In addition, six postdoctoral fellows in the department received intensive advanced training in the laboratories of Dr. Davies, Dr. Lim, Dr. Prakash, and Dr. Honkanen. Members of the faculty also contribute to undergraduate and summer medical research training, acting as mentors for students enrolled in the BMD honors research programs and medical students.

The faculty continues to demonstrate excellence in scholarly activity and research, as is evident by their publications and presentations at national and international scientific meetings. Most of the latter were conducted as virtual meetings. The department's intensive research effort has been made possible by extramural grant support from AHA, NIH, and a sub-award from the UC-Davis/ Jordan's Guardian Angels (JGA) Foundation, as well as internal funds from the College of Medicine and USA.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Comparative Medicine**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Cawthon CV, Cooper K, Huett C, Lloret A, Villar-Matamoros E, Stokes L, Christians U, Schuler M, Yazdani SK. Pre-clinical investigation of liquid paclitaxel for local drug delivery: a pilot study. *Pharmaceuticals (Basel)*. 2020 Nov 28;13(12):434.

Lee KJ, Wright G, Bryant H, Wiggins LA, Dal Zotto VL, Schuler M, Malozzi C, Cohen MV, Gassman NR. Cytoprotective effect of vitamin D on doxorubicin-induced cardiac toxicity in triple negative breast cancer. *Int J Mol Sci*. 2021 Jul 12;22(14):7439.

Lee KJ, Wright G, Bryant H, Wiggins LA, Schuler M, Gassman NR. EGFR signaling promotes resistance to CHK1 inhibitor prexasertib in triple negative breast cancer. *Cancer Drug Resist*. 2020;3(4):980-991.

**II. PUBLISHED ABSTRACTS**

**III. PUBLISHED BOOKS**

**IV. INVITED PRESENTATIONS**

**V. NATIONAL PROFESSIONAL RECOGNITION**

Jonathan G. Scammell: Journal Reviewer, *American Journal Physiology Endocrinology and Metabolism*. Board Member, Alabama Board of Medical Scholarships.

A. Michele Schuler: Secondary veterinarian for the Alabama Marine Mammal Stranding Network.

**VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The faculty and staff of the Department of Comparative Medicine participate in service, education, and research in the university's animal care and use program. A major accomplishment this year was the program review by AAALAC International and the receipt of full accreditation with exemplary status. Exemplary status is reserved for only a small percentage of animal care and use programs worldwide. The AAALAC Council were particularly complementary of the condition of the facilities, the environmental enrichment program for all species, and the highly qualified and loyal vivarium staff. It was also noted that during a year when the pandemic and hurricanes continued to impact operations elsewhere on campus, the faculty and staff provided essential and uninterrupted support of the animal care and use program.

The team:

Director of University Biological Resources: Dr. A. Michele Schuler

Animal Health Care Technologist: Leigh Ann Wiggins

Laboratory Animal Tech Supervisors: Benjamin Gumbs, Craig Youngman

Laboratory Animal Assistant: Hannah Bryant; Research Technician: Kitty Leaird

Laboratory Animal Technicians: Francelina Nores, Carmen Thomas, Melanie Wiggins

Vivarium Maintenance Coordinator: Gavin Guy

Financial Operations Specialist: Kenyetta Grissom; Secretarial Support: Sheila Pierce

In addition, the department continues to upgrade equipment and maximize the use of facilities with the goal of enhancing research and teaching capabilities for the benefit of investigators throughout the university. The department supports the VEVO high resolution ultrasound imaging system from VisualSonics, the hypoxia core for the development of pulmonary hypertensive rodents, the *Pseudomonas* delivery core, the behavior core, the Kimtron, Inc. IC-320 irradiator, IVIS Spectrum Imaging System, the OEC-Diasonics C-Arm Fluoroscopic Imaging System, clinical chemistry and histology services and activities in the ABSL-3 facility of the Laboratory of Infectious Disease.

The faculty continue formal and informal educational commitments within the department to technical staff, supervisors, and colleagues and outside the department to graduate students, postdoctoral fellows, and faculty. Dr. Schuler's commitment to collaboration and education reaches broadly within the university with formal participation with research groups in the Dauphin Island Sea Lab, the College of Arts and Sciences, and every department within the College of Medicine. She holds a joint appointment in the Department of Microbiology and Immunology and works extensively with investigators in the Laboratory of Infectious Disease. Outside of the university, Dr. Schuler works with the Alabama Marine Stranding Network collaborating with the NOAA's National Marine Fisheries Service to provide veterinary care to stranded cetacean species.

Members of the department play significant roles in other aspects of college and university life. Dr. Scammell serves as Assistant Dean for Admissions, member of the Endocrinology and Reproduction Module and Clinical Pharmacology teaching staff, and chairs the MD with Research Honors Committee. Outside of the college, Dr. Scammell serves on the University's Committee on Standards in the Conduct of Research, the Scholarship and Financial Aid Committee, the University Committee on Diversity and Inclusion, and the USA Health Branding Advisory Team. Dr. Schuler serves as a standing member of Institutional Animal Care and Use and Biosafety Committees and is a member of the Safety and Environmental Compliance Committee. She continues her role as director of the introductory graduate level course on Fundamentals of Basic Medical Sciences (IDL 580). Dr. Schuler was promoted to Professor in Comparative Medicine, as well as her joint department Microbiology and Immunology.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Emergency Medicine**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Briggs BC. Doing our jobs: COVID-19 from an emergency medicine resident perspective. J Sci Med. 2021;6(COVID-19 Special Issue 1):4-5.

Briggs BC, Wosiski-Kuhn M. Subarachnoid hemorrhage: can't-miss diagnosis and management. EM Resident. 2020-2021 Dec-Jan;47(6):26-27.

Herefore AC, Sternberg ML. Society for Academic Emergency Medicine Clinical Image Series: a recurring neck mass [internet]. Mobile, AL: Academic Life in Emergency Medicine, 2021 Aug 23. Available from: <https://www.aliem.com/saem-clinical-image-series-recurring-neck-mass/>

Kalra S, Amin A, Albert N, Cadwell C, Edmonson C, Gaynes R, Hand M, Marinella M, Morely C, Sieck S, Vasudevan RS. Stethoscope hygiene: a call to action. Recommendations to update to CDC guidelines. Infect Control Hosp Epidemiol. 2021 Jun; 42(6):740-742.

Kalra S, Garri RF, Shewale JB. Aseptic disposable stethoscope barrier: acoustically invisible and superior to disposable stethoscopes. Mayo Clin Proc. 2021 Jan;96(1):263-264.

Lagasse G, Barengo E. Society of Academic Emergency Medicine Clinical Image Series: finger pain [internet]. Mobile, AL: Academic Life in Emergency Medicine; 2021 Feb 15. Available from: <https://www.aliem.com/saem-clinical-image-series-finger-pain/>

Mellick L. A tour of the USA Fanny Meisler Trauma Center [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Oct 6. Available from: <https://www.youtube.com/watch?v=Bea5EEohp2k>

Mellick L. The Eidolon Photo Bluminator II and some fur babies [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Oct 25. Available from: <https://www.youtube.com/watch?v=oBnvEs9Wq-E>

Mellick L. The Photo-Bluminator II for pediatric corneal abrasions [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Oct 26. Available from: <https://www.youtube.com/watch?v=qyIB9q2N5dQ>

Mellick L. Nursing skills for doctors: setting up an IV pump [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Oct 26. Available from: [https://www.youtube.com/watch?v=gSDVdB0K\\_V4](https://www.youtube.com/watch?v=gSDVdB0K_V4)

Mellick L. Nursing skills for doctors: hooking up the monitor [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Oct 26. Available from: [https://www.youtube.com/watch?v=AFy\\_9PPOLto](https://www.youtube.com/watch?v=AFy_9PPOLto)

Mellick L. Nursing skills for doctors: how to burp an IV bag [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Oct 20. Available from: <https://www.youtube.com/watch?v=nJTfq9VzALA>

Mellick L. Nursing skills for doctors: setting up the end tidal CO<sub>2</sub> monitor [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Oct 26. Available from: <https://www.youtube.com/watch?v=6TN9SH2UmEA>

Mellick L. A conceptual tour of new Children's & Women's ED [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Oct 31. Available from: <https://www.youtube.com/watch?v=JmIYI9A1S-k>

Mellick L. Comparing two rapid fluid volume infusers [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Nov 7. Available from: [https://www.youtube.com/watch?v=eA\\_BhgQKMcs](https://www.youtube.com/watch?v=eA_BhgQKMcs)

Mellick L. Physostigmine for severe doxylamine overdose [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Nov 16. Available from: <https://www.youtube.com/watch?v=6aj-Z8giv1o>

Mellick L. Life threatening inflammatory syndrome in children MIS C emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Nov 16. Available from: <https://www.youtube.com/watch?v=CkTfHUNhYLA>

Mellick L. The Mar-Med Balloon Extractor for nasal foreign bodies [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Nov 16 Available from: <https://www.youtube.com/watch?v=sAnHueNk-rg>

Mellick L. An implanted port access training video [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Nov 20. Available from: [https://www.youtube.com/watch?v=tVuZXq\\_oAds](https://www.youtube.com/watch?v=tVuZXq_oAds)

Mellick L. A glass splinter under the thumbnail emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Nov 20. Available from: <https://www.youtube.com/watch?v=6zaV1cmxkfk>

Mellick L. Cockroach in the ear emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Jan 6. Available from: [https://www.youtube.com/watch?v=nK\\_\\_zjF4kcE](https://www.youtube.com/watch?v=nK__zjF4kcE)

Mellick L. Airway emergency: a rapid closing tracheostomy site [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Jan 10. Available from: <https://www.youtube.com/watch?v=TuTwMxHITnQ>

Mellick L. The new USA Emergency Department & Fanny Meisler Trauma Center [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Jan 16. Available from: <https://www.youtube.com/watch?v=YxntAidszXw>

Mellick L. The Fares Method for anterior shoulder dislocation reduction [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Feb 1. Available from: <https://www.youtube.com/watch?v=bXitctnGio4>

Mellick L. Buried earring emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Feb 8. Available from: [https://www.youtube.com/watch?v=YHcGatJp0\\_0](https://www.youtube.com/watch?v=YHcGatJp0_0)

Mellick L. Subungual hematoma emergency and trephination procedure [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Feb 10. Available from: <https://www.youtube.com/watch?v=eRBILyxM4aY>

Mellick L. Pediatric ED mini-lab rapid viral testing [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Feb 17. Available from: <https://www.youtube.com/watch?v=SM0Xr9TxCWM>

Mellick L. A stuck Valentines ring emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical

Education Videos; 2021 Feb 19. Available from:  
<https://www.youtube.com/watch?v=sdj2oQAfOSO>

Mellick L. Pseudoallergic angioedema emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Feb 23. Available from:  
<https://www.youtube.com/watch?v=dWOTLwlaSr8>

Mellick L. Cadaver demonstration of rapid central circulation flow with the LifeFlow device [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Feb 25. Available from: <https://www.youtube.com/watch?v=-3WGFpKTwkQ>

Mellick L. A stuck belly button ring emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Mar 2. Available from: <https://www.youtube.com/watch?v=r5cIpmTpMw>

Mellick L. Turf toe emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Mar 2. Available from: <https://www.youtube.com/watch?v=rFuYiv4q--s>

Mellick L. Tapping a VP shunt for hydrocephalus emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Mar 4. Available from:  
<https://www.youtube.com/watch?v=tR55vKKrj-o>

Mellick L. Chest retractions in a severe asthma attack [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Mar 9. Available from:  
[https://www.youtube.com/watch?v=yBVk\\_Bnyadc](https://www.youtube.com/watch?v=yBVk_Bnyadc)

Mellick L. Pediatric eye emergencies [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Mar 15. Available from:  
[https://www.youtube.com/watch?v=cNuCTEDM\\_ew](https://www.youtube.com/watch?v=cNuCTEDM_ew)

Mellick L. BB gunshot injury and rare earth magnets [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Apr 12. Available from:  
[https://www.youtube.com/watch?v=oc7jIwF\\_tzs](https://www.youtube.com/watch?v=oc7jIwF_tzs)

Mellick L. Finger fishhook emergency and needle barb release technique [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Apr 13. Available from:  
<https://www.youtube.com/watch?v=NmKhQ3BK7LQ>



Mellick L. A pediatric unguided sacroiliac joint injection [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Apr 21. Available from:  
<https://www.youtube.com/watch?v=DNVntt4-vxA>

Mellick L. Large wart cutaneous horn removal procedure [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 May 10. Available from:  
<https://www.youtube.com/watch?v=C3T8RqycSZ8>

Mellick L. Peritonsillar abscess emergency and needle aspiration [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 May 24. Available from:  
<https://www.youtube.com/watch?v=1CJgLTd35wo>

Mellick L. Three dramatic traumatic emergencies [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 May 24. Available from:  
<https://www.youtube.com/watch?v=nqtYmY9utvs>

Mellick L. Three pediatric traumatic impalement injuries [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Jun 5. Available from:  
[https://www.youtube.com/watch?v=bnXXrbC\\_QKQ](https://www.youtube.com/watch?v=bnXXrbC_QKQ)

Mellick L. Pediatric tongue laceration emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Jun 8. Available from:  
<https://www.youtube.com/watch?v=wulKsaCmW4w>

Mellick L. An elbow dislocation reduction model [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Jun 14. Available from:  
<https://www.youtube.com/watch?v=whnzYDPgu0c>

Mellick L. Periodontal abscess incision [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Jun 23. Available from:  
<https://www.youtube.com/watch?v=CxMnH1GrFUI>

Mellick L. Huge splinter stuck in 7<sup>th</sup> grader's foot [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Jun 28. Available from:  
<https://www.youtube.com/watch?v=Hscy5495Jnw>

Mellick L. Hypocalcemia emergency and Chvostek's sign [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Aug 20. Available from: <https://www.youtube.com/watch?v=QCbFyPgrFXc>

Mellick L. Scalpel-finger-bougie cricothyrotomy technique [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Aug 20. Available from: <https://www.youtube.com/watch?v=ezxwuCaf7J0>

Mellick L. Treating and preventing hypothermia in children [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Aug 23. Available from: <https://www.youtube.com/watch?v=WhftvVrEoOc>

Mellick L. Slit lamp training USA Department of Emergency Medicine [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Aug 28. Available from: [https://www.youtube.com/watch?v=tmw\\_d7iDiwk](https://www.youtube.com/watch?v=tmw_d7iDiwk)

Mellick L. iON imaging system camera orientation [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Aug 28. Available from: [https://www.youtube.com/watch?v=ohleD3X2b\\_4](https://www.youtube.com/watch?v=ohleD3X2b_4)

Mellick L. Scaphoid bone fracture emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Jun 6. Available from: <https://www.youtube.com/watch?v=f-Md9InMHzi>

Mellick L. A phone disaster emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2020 Jun 6. Available from: <https://www.youtube.com/watch?v=nReaBC2JhvM>

Mellick L. Osteogenesis imperfecta emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Aug 29. Available from: [https://www.youtube.com/watch?v=kP\\_kBtiaahY](https://www.youtube.com/watch?v=kP_kBtiaahY)

Mellick L. Finger stuck in kaleidoscope toy emergency [video]. University of South Alabama College of Medicine, producer. Mobile, AL: University of South Alabama Medical Education Videos; 2021 Aug 29. Available from: <https://www.youtube.com/watch?v=CAYn8U2pEgw>

Mellick LB, Gonzalez JC. Childhood accidental spiral tibial fractures and toddler's fractures: where are we 30 years later? *Pediatr Emerg Care.* 2021 Aug 1;37(8):e496-e498.

Mitta M, Sternberg ML. Anterior cord syndrome in a 30-year-old male with congenital cervical stenosis. *Vis J Emerg Med*. 2021 Jan;22:100988.

Peacock WF, Kalra S, Vasudevan RS, Torriani F. Aseptic stethoscope barriers prevent *C difficile* transmission in vitro. *Mayo Clin Proc Innov Qual Outcomes*. 2021 Jan 13;5(1):103-108.

Phillips D, Sternberg ML. Traumatic asphyxia. Alabama Chapter of the American College of Emergency Physicians Newsletter. 2020;2020(Fall). Available from: [https://www.alacep.org/traumatic-asphyxia/?\\_cldee=bWxzdGVybmJlcmdAY29tY2FzdC5uZXQ%3d&recipientid=contact-e26ee0a3c4f5de118fbe005056ae278f-ef10723e753a454a89a307a60ce93439&esid=70428064-2025-eb11-a9be-c60513b43833](https://www.alacep.org/traumatic-asphyxia/?_cldee=bWxzdGVybmJlcmdAY29tY2FzdC5uZXQ%3d&recipientid=contact-e26ee0a3c4f5de118fbe005056ae278f-ef10723e753a454a89a307a60ce93439&esid=70428064-2025-eb11-a9be-c60513b43833)

Rich J, Musslewhite C, Kalra S. Imperforate hymen with urinary retention. *Vis J Emerg Med*. 2020 Dec 15;22:100937.

Rich J, Sternberg ML. Society for Academic Emergency Medicine Clinical Image Series: sun-burnt hands and lips [internet]. Mobile, AL: Academic Life in Emergency Medicine; 2021 Feb 1. Available from: <https://www.aliem.com/saem-clinical-image-series-sun-burnt-hands-lips/>

Sternberg ML. Abdominal pain with pelvic calcification. *Vis J Emerg Med*. 2021 Apr;23:100951.

Sternberg ML, Evers CA. Society for Academic Emergency Medicine Clinical Image Series: facial edema [internet]. Mobile, AL: Academic Life in Emergency Medicine; 2021 Aug 2. Available from <https://www.aliem.com/saem-clinical-image-series-facial-edema/>

## II. PUBLISHED ABSTRACTS

Briggs BC. Impact of a focused teaching module on airway intervention. EMerald Coast Conference; 2021 Jun 7-10; Destin, FL.

Briggs B, Kalra S. Impact of focused teaching module on airway intervention. *Acad Emerg Med*. 2021 May 4;28(Suppl 1):S372. Abstract no.790.

Henning P. Massive hemoptysis in a 44-year old. EMerald Coast Conference 2021; 2021 Jun 7-10; Destin, FL.

Kalra S. Stethoscope cleaning practices and knowledge amongst health care providers. *Ann Emerg Med*. 2020 Oct;76(4S):S98. Abstract no. 255.

Kalra S. Are stethoscopes and infection control enemies? *Ann Emerg Med*. 2020 Oct;76(4S):S99. Abstract no. 257.

Murray C, Mellick L, Kalra S. A retrospective chart review and systematic review of “parenteral” diarrhea associated with pediatric urinary tract infections. EMerald Coast Conference 2021; 2021 Jun 7-10; Destin, FL.

Singhapakdi K, Mellick L. The prevalence of pathologic Q waves in pediatric patients with confirmed hypertrophic cardiomyopathy: a systemic review of the literature. EMerald Coast Conference 2021; 2021 Jun 7-10; Destin, FL.

Sternberg ML, Aggen CZ. Orbital Compartment Syndrome. Society for Academic Emergency Medicine Virtual Education Conference. 2021 May 11-14; Des Plaines, IL

Sternberg ML, Aggen CZ, Phillips DM. An elephant sitting on my chest - case of saddle pulmonary thromboembolism. EMerald Coast Conference 2021; 2021 June 7-10; Destin, FL.

Sternberg ML, Brooks LM, Evers CA. My neck hurts - case of clothesline neck injury. Emerald Coast Conference 2021; 2021 Jun 7-10; Destin, FL.

Sternberg ML, Hereford AC, Wright AR. Pneumonia Churg-Strauss syndrome. EMerald Coast Conference 2021; 2021 Jun 7-10; Destin, FL.

Sternberg ML, Nadarajan AJ. My leg hurts-case of burning escharotomy. Society for Academic Emergency Medicine Virtual Conference. 2021 May 11-14; Des Plaines, IL.

Sternberg ML, Omar YH. Phlegmasia cerulea dolens. Society for Academic Emergency Medicine Virtual Education Conference. 2021 May 11-14; Des Plaines, IL.

Sternberg ML, Overbeek GJ. My butt burned - case of Samsung cell phone spontaneous combustion. EMerald Coast Conference 2021; 2021 Jun 7-10; Destin, FL.

Sternberg ML, Phillips DM. Diffuse idiopathic skeletal hyperostosis. Society for Academic Emergency Medicine Virtual Education Conference; 2021 May 11-14; Des Plaines, IL.

Vasudevan RS, Kalra S, Torriani FJ, Peacock WF. Effectiveness of aseptic stethoscope barriers in allowing clean contact for *Clostridioides difficile*-contaminated stethoscope. Open Forum Infect Dis. 2020 Oct;7(Suppl 1):S450. Abstract no. 816.

### **III. PUBLISHED BOOKS**

### **IV. INVITED PRESENTATIONS**

Panacek EA. Invited speaker. Pretest/introduction to workshop [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 27; Irving, TX.

Panacek EA. Invited speaker. Process of research [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 27; Irving, TX.

Panacek EA. Invited speaker. Research questions [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 27; Irving, TX.

Panacek EA. Invited speaker. Research hypotheses, objectives [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 27; Irving, TX.

Panacek EA. Invited speaker. Research terminology [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 27; Irving, TX.

Panacek EA. Invited speaker. Introduction to study design [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 27; Irving, TX.

Panacek EA. Invited speaker. Practicum: your study design [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 27; Irving, TX.

Panacek EA. Invited speaker. Discuss your questions [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 27; Irving, TX.

Panacek EA. Invited speaker. True experimental design [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 27; Irving, TX.

Panacek EA. Invited speaker. Quasi-experimental designs [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 28; Irving, TX.

Panacek EA. Invited speaker. Case control and other designs [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 28; Irving, TX.

Panacek EA. Invited speaker. Recognizing design [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 2; Irving, TX.

Panacek EA. Invited speaker. Research design practice [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 2; Irving, TX.

Panacek EA. Invited speaker. Survey research [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 28; Irving, TX.

Panacek EA. Invited speaker. Qualitative studies [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 28; Irving, TX.

Panacek EA. Invited speaker. Practicum: selecting your study design [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 28; Irving, TX.

Panacek EA. Invited speaker. Elements of a study protocol [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 29; Irving, TX.

Panacek EA. Invited speaker. Sample size calculations [virtual presentation]. American College of Emergency Physicians Emergency Medicine Basic Research Skills Workshop; 2020 Oct 29; Irving, TX.

Panacek EA. Invited speaker. Tricks of the trade. American College of Emergency Physicians EMerald Coast Conference 2021; 2021 Jun 9; Destin, FL.

## **V. NATIONAL PROFESSIONAL RECOGNITION**

Panacek EA. Director Emeritus; EMF Emergency Medicine Basic Research Skills Course (EMBRs); Moderator, Research Forum Research Abstract (ACEP); Moderator, Research Forum Research Abstract (SAEM); Senior Oral Examiner, American Board of Emergency Medicine; Editorial Board member, Western Journal of Emergency Medicine; Editorial Board member, International Journal of Emergency Medicine; Peer Reviewer for 6 different journals. Editorial panel member “StatPearls”.

Sternberg ML. Red Sash Award, COM, University of South Alabama; Board of Directors Mobile Medical Museum; Board of Directors Alabama ACEP; Delegate to Medical Association State of Alabama; Volunteer Animal Rescue Foundation

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

- Achieved ongoing growth in the new Emergency Medicine Residency Program approved by ACGME.
- Implemented new EM Residency offices and coordinator function.

- Improved several quality assurance performance metrics in the emergency department (until affected by COVID).
- Served administrative and structural changes to the PEDS ED at Children's and Women's Hospital.
- Further refined the role of APP's in the USA-UH Emergency Department.
- Expanded faculty involvement in scholarship. Implemented a resident research requirement.
- Made several major adjustments for COVID in each ED.
- Successful faculty recruitment to improve quantity and quality of faculty for the residency program and UH ED (4), filling important niche roles.
- Recruited additional pediatric emergency medicine faculty for the pediatric emergency department (2)
- Collaborated with leadership to open a new emergency department at USA-UH.
- Collaborated with leadership at CWH on development and plans for a new pediatric emergency department. Project now being implemented.
- Collaborated with leadership to develop new FED.
- Implemented first funded clinical trial in the ED.
- Implemented formal EM faculty evaluation process for the residency, and have focused on quantity and quality of teaching.

Departmental goals for the next academic year:

- Continue faculty recruitment at both hospitals (USAUH & C&WH) for the emergency departments, with focus on specific academic needs. Recruit for the new FED.
- Achieve successful maturation of the emergency medicine residency program with the third full class of residents.
- Prepare for 2021 ACGME site visit obtain full accreditation.
- Further improve and refine educational processes for EM residency
- Initiate a clinical research program in emergency medicine (have not had an EM-specific research program in the history of the department). Increase faculty participation in scholarship.
- Improved work flow in the new emergency department at USA-UH in 2021.
- Expansion into a new FED in West Mobile for 2021/2022.
- Increase EM faculty involvement in service and administration within the USA/USAHS.
- Explore national certification for the Pediatric Emergency Department at CWH.
- Prepare/plan for the new PED at CWH for 2023.
- Break ground on a new pediatric emergency department.
- Draft out proposal for a robust "Center for Pediatric Emergency Care".

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Family Medicine**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Aly S, Daniel CL, Bae S, Scarinci IC, Hardy CM, Fouad MN, Baskin ML, Hoenemeyer T, Acemgil A, Demark-Wahnefried W. Cancer-related beliefs and preventive health practices among residents of rural versus urban counties in Alabama. *Cancer Prev Res (Phila)*. 2021 May;14(5):593-602.

Brooks HE, McLendon LA, Daniel CL. The impact of COVID-19 on pediatric vaccination rates in Alabama. *Prev Med Rep*. 2021 Jun;22:101320.

Daniel CL, Aly S, Bae S, Scarninci I, Hardy C, Fouad M, Demark-Wahnefried W. Differences related to cancer screening by minority and rural/urban status in the Deep South: population-based survey results. *J Cancer*. 2021 Jan 1;12(2):474-481.

Daniel CL, Lawson F, Vickers M, Green C, Wright A, Coyne-Beasley T, Lee HY, Turberville S. Enrolling a rural community pharmacy as a Vaccines for Children provider to increase HPV vaccination: a feasibility study. *BMC Public Health*. 2021 Jun 29;21(1):1266.

Daniel CL, McLendon L, Green CL, Anderson KJ, Pierce JY, Perkins A, Beasley M. HPV and HPV vaccination knowledge and attitudes among medical students in Alabama. *J Cancer Educ*. 2021 Feb;36(1):168-177.

Lee HY, Luo Y, Neese J, Daniel C, Hahm HC. The role of English proficiency in HPV and HPV vaccine awareness: a cross-sectional study across race/ethnicity. *Asian Pac J Cancer Prev*. 2021 Feb 1;22(2):349-357.

Lee HY, Luo Y, Neese J, Lee D, Daniel CL. Targeted intervention strategies to promote HPV-associated cancer equity. *Health Behav Policy Rev*. 2021 Mar;8(2):100-109.

McLendon L, Puckett J, Green C, James J, Head KJ, Yun Lee H, Young Pierce J, Beasley M, Daniel CL. Factors associated with HPV vaccination initiation among United States college students. *Hum Vaccin Immunother*. 2021 Apr 3;17(4):1033-1043.

Slater NA, Todd AM, Trimmier MC, Campbell KC. Morphine use in renal failure: a case report of single-dose morphine toxicity in a patient requiring peritoneal dialysis. *J Pharm Pract*. 2020 Dec;33(6):903-906.

Toldi J, Escobar J, Brown A. Cerebral palsy: sport and exercise considerations. *Curr Sports Med Rep*. 2021 Jan 1;20(1):19-25.



Toldi J, Jones J. A case of acute stuttering resulting after a sports-related concussion. *Curr Sports Med Rep*. 2021 Jan 1;20(1):10-12.

Williams CP, Gallagher KD, Deehr K, Aswani MS, Azuero A, Daniel CL, Ford EW, Ingram SA, Balch AJ, Rocque GB. Quantifying treatment preferences and their association with financial toxicity in women with breast cancer. *Cancer*. 2021 Feb 1;127(3):449-457.

## **II. PUBLISHED ABSTRACTS**

Daniel C, Green C, James J, Lockwood S, Johnson T. HPV vaccination promotion for oropharyngeal cancer prevention: an Alabama initiative. *American Public Health Association 2020 Annual Meeting & Expo*; 2020 Oct 24-28; Washington, DC. Abstract no. 4362.0. Available from: <https://apha.confex.com/apha/2020/meetingapp.cgi/Paper/465309>

Daniel C, McLendon L, Green C, James J, Puckett J, Pierce J, Head K. HPV vaccination promotion on campus: formative focus group interviews to inform campaign development. *American Public Health Association 2020 Annual Meeting & Expo*; 2020 Oct 24-28; Washington, DC. Abstract no. 4051.0 Available from: <https://apha.confex.com/apha/2020/meetingapp.cgi/Paper/469058>

Gibson L, Green C, James J, Stutzman J, Daniel C. Characteristics of COVID-19 positive patients with and without diabetes mellitus. *American Medical Association Research Symposium*; 2020 Dec 3-6; Chicago, IL. p 2.

Luo Y, Lee HY, Daniel C, Won CR. HPV awareness across age groups: different roles of technology and social media. *Council of Social Work Education 66<sup>th</sup> Annual Program Meeting*; 2020 Nov 16-20; Alexandria, VA. p. 134. Abstract no. 519.

## **III. PUBLISHED BOOKS**

## **IV. INVITED PRESENTATIONS**

Daniel CL. Invited speaker. “Watch your mouth”: HPV and oral cancer [virtual presentation]. *University of Alabama at Birmingham School of Dentistry Alumni Weekend*; 2021 Feb 5; Birmingham, AL.

Daniel CL. Invited speaker. COVID-19 in Mobile, Alabama: nine months into the pandemic [virtual presentation]. *United Way of Southwest Alabama Community Resource Network*; 2020 Dec 2; Mobile, AL.

Daniel CL. Invited speaker. HPV vaccination promotion for oropharyngeal cancer prevention: an Alabama initiative [virtual presentation]. *American Public Health Association 2020 Annual Meeting & Expo*; 2020 Oct 27; Washington, DC.

Daniel CL. Invited speaker. HPV vaccination promotion on campus: formative focus group interviews to inform campaign development [virtual presentation]. American Public Health Association 2020 Annual Meeting & Expo; 2020 Oct 27; Washington, DC.

Perkins RA. Invited speaker. President's Address [virtual presentation]. Association of Departments of Family Medicine; 2021 Feb 18; Mobile, AL.

Perkins RA. Invited speaker. #thisisourshot— the family medicine response to COVID: a panel of discussion [virtual presentation]. Society for Teachers of Family Medicine; 2021 May 5; Mobile, AL.

## V. NATIONAL PROFESSIONAL RECOGNITION

**Allen Perkins** was named Board Chair of the Association of Departments of Family Medicine. He has continued to serve as a member of the Family Medicine Leadership Council and the Academic Family Medicine Advocacy Council. He also served as an invited participant in the National Summit on Family Medicine Residency Education. **Ehab Molokhia** serves on the Board of Directors for the Family Physicians Inquires Network and serves as a member of the National Board of Medical Examiners Behavioral Health Test Material Development Committee. He was named to the Step 3 CS IRC Committee. In addition, he is part of the Association of Departments of Family Medicine Leadership Education for Academic Development and Success Fellowship Program. **Maureen Padden** serves on the American Academy of Family Physicians (AAFP) Rules Committee, as well as being a delegate for AAFP Congress.

## VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS

The department has hired 3 faculty (Dr Peter Rippey, Primary Care Sports Medicine, and Drs Maureen Padden and Anne Payne-Johnson who also have additional expertise in obesity management). The Department continued to provide support for the Covid response activities of the health system. We continued to provide support for testing and provided support for vaccination when they became available. As of this writing, we have administered over 90,000 vaccinations. We continue to lead the way in telehealth and virtual visits for the organization, delivering 30% of our care in a virtual manner. We continue to build on the Primary Care Pathway and were awarded an additional \$4,000,000 which will be used to create a simulation and standardized patient environment on campus. We have provided faculty development to 5 faculty members in 3 different departments and to 10 community faculty who serve in 5 separate communities. We have recruited another 8 students into the Pathway to begin in October 2021. We were awarded a HRSA Title VII Residency training Grant to enhance out resident's obstetrical skills and prepare them for rural practice. This project will take place in Monroe and Conecuh Counties as well and will enhance the care delivery to patients in those areas. We have become the initial clinical department to transition to Athena as our electronic health record for ambulatory care delivery.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Internal Medicine**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Amritphale A, Chatterjee R, Chatterjee S, Amritphale N, Rahnavard A, Awan GM, Omar B, Fonarow GC. Predictors of 30-day unplanned readmission after carotid artery stenting using artificial intelligence. *Adv Ther*. 2021 Jun;38(6):2954-2972.

Andrews A, Malone K, Omar B. McConnell's sign. RV strain in acute pulmonary embolism! *Cardiofellows Newsletter*. 2021 Jan;4(1):1-3. Available from: <https://cardiofellows.com/newsletter-january-2021.html>

Bardia N, Chiranjeevi S, Chowdhuri N, Rafique M, Sarwar U, Patel M, Amritphale A, Awan GM, Malozzi C, Rahimi F, Omar B, Shofu A. Mitral prosthesis balloon valvuloplasty..3-D style! *Cardiofellows Newsletter*. 2020 Dec;3(12):56-58. Available from: <https://cardiofellows.com/newsletter-december-2020.html>

Chen YX, Shi C, Deng J, Diao C, Maarouf N, Rosin M, Shrivastava V, Hu AA, Bharadwa S, Adijiang A, Ulke-Lemee A, Gwilym B, Hellmich A, Malozzi C, Batulan Z, Dean JLE, Ramirez FD, Liu J, Gerthoffer WT, O'Brien ER. HSP25 vaccination attenuates atherogenesis via upregulation of LDLR expression, lowering of PCSK9 levels and curbing of inflammation. *Arterioscler Thromb Vasc Biol*. 2021 Jun;41(6):e338-e353.

Chowdhuri N, Buono L, Murfee J, Rahimi F, Maltese C, Omar B. Tricuspid valvectomy.. radical cure for recurrent endocarditis! *Cardiofellows Newsletter*. 2021 Apr; 4(4):10-12. Available from: <https://cardiofellows.com/newsletter-april-2021.html>

Dabbas S, Chiranjeevi S, Malozzi C, Omar B. Peripartum cardiomyopathy..a mysterious misfortune of pregnancy! *Cardiofellows Newsletter*. 2021 June;4(6):16-18. Available from: <https://cardiofellows.com/newsletter-june-2021.html>

Dahiya A, Chao C, Younger J, Kar J, Baldwin BM, Cohen MV, Joseph S, Chowdhry A, Figarola MS, Malozzi C, Nasser MF, Nabeel Y, Shah R, Kennen JM, Aneja A, Khalil S, Ragab S, Mohammed O, Moustafa T, Hamdy A, Ahmed S, Heny A, Taher M, Ganigara M, Dhar A, Misra N, Alzubi J, Pannikottu K, Jabri A, Hedge V, Kanaa'n A, Lahorra J, de Waard D, Horne D, Dhillon S, Sweeney A, Hamilton-Craig C, Katikireddi VS, Wesley AJ, Hammet C, Johnson JN, Chen SSM. Society for Cardiovascular Magnetic Resonance 2019 Case of the Week series. *J Cardiovasc Magn Reson*. 2021 Apr 1;23(1):44.

El-Sharkh H, Omar B. Infiltrative cardiomyopathy..ECG/Echo hypertrophy paradox! *Cardiofellows Newsletter*. 2021 Feb;4(2):4-6. Available from: <https://cardiofellows.com/newsletter-february-2021>

Kar BJ, Cohen MV, McQuiston SP, Malozzi CM. A deep-learning semantic segmentation

approach to fully automated MRI-based left-ventricular deformation analysis in cardiotoxicity. *Magn Reson Imaging*. 2021 May;78:127-139.

Kar J, Cohen MV, McQuiston SA, Malozzi CM. Comprehensive enhanced methodology of an MRI-based automated left-ventricular chamber quantification algorithm and validation in chemotherapy-related cardiotoxicity. *J Med Imaging (Bellingham)*. 2020 Nov;7(6):064002.

Karr J, Cohen M, McQuiston SA, Poorsala T, Malozzi C. Validation of a deep-learning semantic segmentation approach to fully automate MRI-based left-ventricular deformation analysis in cardiotoxicity. *Br J Radiol*. 2021 Apr 1;94(1120):20201101.

Malik H, Patel M, Bardia N, Omar B. Cardiac carcinoid..a tricuspid valvulopathy! *Cardiofellows Newsletter*. 2021 March;4(3):7-9. Available from: <https://cardiofellows.com/newsletter-march-2021.html>

Nguyen L, Rafique M, Chowdhuri N, Chiranjeevi S, Malozzi C, Amritphale A, Awan GM, Omar B. Agonal rhythm..pre-asystole erratic idioventricular rhythm! *Cardiofellows Newsletter*. 2020 Nov;3(11):53-55. Available from: <https://cardiofellows.com/newsletter-nov-2020.html>

Padarti A, Chiranjeevi S, Malozzi C, Omar B. Yamaguchi cardiomyopathy.. the ace-of-spades! *Cardiofellows Newsletter*. 2021 May;4(5):13-15. Available from: <https://cardiofellows.com/newsletter-may-2021.html>

Rahman MU, Bardia N, Rafique M, Awan GM, Nguyen L, Omar B. Ebstein's anomaly...associated LV noncompaction! *Cardiofellows Newsletter*. 2020 Oct;3(10):49-52. Available from: <https://cardiofellows.com/newsletter-oct-2020.html>

Rayner JO, Kim JH, Roberts RW, Wood RR, Fouty B, Solodushko V. Evaluation of DNA-launched virus-like particle vaccines in an immune competent mouse model of chikungunya virus infection. *Vaccines (Basel)*. 2021 Apr 2;9(4):345.

Sockrider M, Roessel L, Fagan KA, Gillespie M. Diagnosis and treatment of pulmonary hypertension. *Am J Respir Crit Care Med*. 2021 Mar 15;203(6):P14-P15.

## II. PUBLISHED ABSTRACTS

Arrieta MI, Parker LL, Carter MD, Hanks RS, Crook ED. Racial injustice perceptions reawakened by the COVID-19 pandemic. *J Investig Med*. 2021 Feb;69(2):536. Abstract no. 294.

Di Palma JA, Bhandari R, Cleveland M, Tesoriero J, Walker ML, Hall S, McGowan J. Comparison of safety and efficacy of a novel oral sulfate tablet bowel preparation compared to split dose PEG-EA. *Am J Gastroenterol*. 2020;115(Suppl 1):S259. Abstract no. S0519.

Lee KJ, Wright G, Bryant H, Wiggins LA, Dal Zotto VL, Schuler M, Malozzi C, Cohen MV, Gassman NR. Cytoprotective effect of vitamin D on doxorubicin-induced cardiac toxicity in triple negative breast cancer. *Int J Mol Sci*. 2021 Jul 12;22(14):7439.

Malik HZ, Amritphale M, Sonnier WP. Clinical predictors affecting readmission rates in patients hospitalized for management of acute liver failure. *Gastroenterology*. 2021 May 1;160(6 Suppl):S820-S821. Abstract no. Sa310.

Rayburn T, Ahmed N, Surtie F, Fagan KA. It's not always pneumonia: bleomycin-induced lung injury in a patient with HIV. *Am J Respir Crit Care Med*. 2021;203:A2159. Available from: [https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1\\_MeetingAbstracts.A2159](https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1_MeetingAbstracts.A2159)

### **III. PUBLISHED BOOKS**

### **IV. INVITED PRESENTATIONS**

Fouty B. Invited speaker. Nucleic acid vaccines. Mobile Infirmary Grand Rounds; 2021 Mar 15; Mobile, AL.

Crook ED. Invited speaker. From bench to community: understanding health disparities before, during, and after COVID-19. Alabama Academy of Science; 2021 Mar 18; Birmingham, AL.

Crook ED. Invited speaker. Health equity and the social determinants of health. Gulf Coast Organization of Nursing Leaders; 22 Jul 2021; Mobile, AL.

Crook ED. Invited speaker. Renal manifestations of diabetes and obesity disparities and how to resolve them. Mississippi Health Disparities Conference 2021; 2021 Aug 4; Biloxi, MS.

Crook ED. Invited speaker. The march towards health equity: understanding and addressing health disparities. Baylor Scott and White Department of Emergency Medicine Departmental Conference; 2021 Aug 19; Temple, TX.

Crook ED. Invited speaker. The latest on COVID-19 and vaccine education [virtual presentation]. The University of South Alabama Summer Zoom Webinar Series "Talk Thursday"; 2021 Aug 19; Mobile, AL.

### **V. NATIONAL PROFESSIONAL RECOGNITION**

Crook ED. Invited speaker and awardee: Alabama Academy of Science: Wright Gardner Award Lecture. "From Bench To Community: Understanding Health Disparities Before, During and After COVID-19." 2021 Mar 18.

Crook ED. NCI Special Emphasis Panel, L60 Loan Repayment Program (ZCA/PCRB-W (A2)), Health Disparity Research

Crook ED. NIH ZRG1 F18-G(20), Epidemiology and Population Science Fellowships, November 2020

Crook ED. NIMHD Special Emphasis Panel: Centers for Multiple Chronic Diseases Associated with Health Disparities: Prevention, Treatment, Management (P50 Clinical Trial Required) (ZMD1 MLS (A1)) (July 2021)

Crook ED. Invited speaker and organizer of webinar session for Harvard Medical School's series on Addressing Health Disparities: Clinical Insights on Race and Social Justice. Topic: "The Dual Impact of Race and Rural Status on Healthcare Disparities." September 29, 2021.

DiPalma J. Secretary, American College of Gastroenterology, 2017-Present.

Fagan K. 50th Annual Tri-State Thoracic Conference, Co-Moderator – USA case presentations, 2021.

Fagan K. American Thoracic Society, Association of Pulmonary, Critical Care and Sleep Division Directors, President-elect 2021-

Fagan K. Pulmonary Circulation Assembly, Nominating Committee Chair, 2000-2021.

Fagan K. Pulmonary Hypertension Association, CEO Search Committee 2020-2021.

Fagan K. Pulmonary Hypertension Association, COVID Task Force, Chair, 2020-

Fagan K. Chair, NIH/NHLBI – REHAB-PH-H2 Blockade in Pulmonary Arterial Hypertension. 2018 – Present

Fagan K. Chair, NIH/NHLBI COVID-19 Protocol Review Committee  
Institute-wide rapid assessment of Covid 19 related clinical trials. 2020-

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The activities for this academic year continued to be impacted by the COVID-19 Pandemic. The department responded collectively to develop and maintain safe clinical practices in all patient care arenas, to develop new methods to deliver educational content to all of our learners, and to adjust research protocols. We also developed new research projects that help us to better understand all aspects of the COVID-19 Pandemic. These projects range from elucidating the basic genetics and biology of the virus, evaluating treatment options, and understanding the sociocultural impacts of the pandemic on the health and health care of our community. Drs. T. J. Hundley, now Associate Dean for Education for the COM,

John Vandewaa, Division Chief of Infectious Disease, Karen Fagan, Division Chief of Pulmonary – Critical Care, Judy Blair, Residency Program Director and Assistant DIO, and Rachel Seaman, hospitalist and Associate Program Director, deserve special mention for their leadership and contributions to USA Health, the University, and the state of Alabama during the COVID-19 pandemic.

## **Education**

The department has continued to receive excellent evaluations from medical students and residents for its educational activities. Several of the department's faculty were recognized with the red sash award for their educational efforts. Department members continue to contribute significantly to the medical school curriculum over all four years. Several departmental members serve as co-directors for the modules for the first and second year COM classes. The module voted as best in the first 2 years by the Class of 2021 was the Respiratory Disease module co-lead by Dr. Brian Fouty, a Professor in the Department. Our courses for COM 4th year students remain popular with the Acting Internship in inpatient medicine and the MICU rotation receiving high praise. Dr. Errol D. Crook was selected to address the COM Class of 2021 at their graduation exercises.

Our faculty also make important contributions to the education of students in Allied Health and Nursing. For example, Dr. Shannon Tyler serves as the Medical Director for the Department of Physician Assistant Studies in the College of Allied Health Professions where she plays a large role in the education of the PA students. Several of the PA students take clinical rotations in general internal medicine and all of our subspecialty areas. Students pursuing the Nurse Practitioner degree often spend time with members of the department on their clinical rotations.

## **Scholarly Efforts**

The department has continued to be productive in scholarly achievements. The Divisions of Gastroenterology, Pulmonary and Critical Care, and Cardiology continue to have robust clinical studies portfolios. The Division of Cardiology had an excellent year, as can be seen in the list of publications from the department. These publications are the efforts of several years of work with multidisciplinary collaborators. GI continues to involve its fellows, internal medicine residents and medical students in its research efforts with several of these trainees presenting their work at regional and national meetings.

The Division of Pulmonary – Critical Care has continued its partnership with the Center for Lung Biology and has continued clinical, basic and translational studies in pulmonary hypertension. Infectious disease continues its efforts in care of the HIV patient through a grant funded by the Health Resources and Services Administration. Members of the Division of General Internal Medicine led patient safety and quality projects. Dr. Johnson Haynes has continued his efforts in leadership of the Comprehensive Sickle Cell Center. The Center is collaborator on a PCORI grant focused on advancing care of patients with sickle cell disease through the transition period of adolescence to adulthood.

With the Pandemic, there were pauses, re-evaluations, and restructuring of many research protocols. Department members took advantage of new opportunities for participation in COVID-19 related trials. Dr. Brian Fouty, Professor in Pulmonary Critical Care, continues to be particularly active in this arena.

## **Service**

The Department continues to deliver excellent clinical service. The Department has grown along with the growth in USA Health. This academic year resulted in the highest levels of clinical billing in the Department's history. The department has met considerable increases in clinical services at the USA Health University Hospital and in our ambulatory practices. The Department of Medicine's inpatient teams and MICU teams handled almost all of the care of patients with COVID-19 in USA Health University Hospital. The residents and fellows in our department were the front line for this response.

Departmental faculty continue to serve on editorial boards, as journal reviewers, on advisory boards, and on grant review panels. Several faculty play key roles in their subspecialty societies. Dr. Karen Fagan, Professor in the Division of Pulmonary and Critical Care, has notable leadership roles with the American Thoracic Society and the Pulmonary Hypertension Association (see National Professional Recognition above).

Several Department of Medicine faculty are on key committees within USA Health. In addition, our faculty has contributed significantly to the University as a whole and the Greater Mobile Community. Our faculty serve on several school related, community based, philanthropic, and service organizations in the region. In these roles they proudly represent The University of South Alabama and USA Health.



**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Microbiology and Immunology**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Abou Saleh L, Boyd A, Aragon IV, Koloteva A, Spadafora D, Mneimneh W, Barrington RA, Richter W. Ablation of PDE4B protects from *Pseudomonas aeruginosa*-induced acute lung injury in mice by ameliorating the cytostorm and associated hypothermia. FASEB J. 2021 Sep;35(9):e21797

Danchenko M, Laukaitis HJ, Macaluso KR. Dynamic gene expression in salivary glands of the cat flea during *Rickettsia felis* infection. Pathog Dis. 2021 Apr 22;79(5):ftab020.

Driscoll TP, Verhoeve VI, Brockway C, Shrewsberry DL, Plumer M, Sevdalis SE, Beckmann JF, Krueger LM, Macaluso KR, Azad AF, Gillespie JJ. Evolution of *Wolbachia* mutualism and reproductive parasitism: insight from two novel strains that co-infect cat fleas. PeerJ. 2020 Dec 17;8:e10646.

Laukaitis HJ, Macaluso KR. Unpacking the intricacies of *Rickettsia*-vector interactions. Trends Parasitol. 2021 Aug;37(8):734-746.

Okaro U, George S, Valdes S, Macaluso K, Anderson B. A non-coding RNA controls transcription of a gene encoding a DNA binding protein that modulates biofilm development in *Bartonella henselae*. Microb Pathog. 2020 Oct;147:104272.

Rayner JO, Kim JH, Roberts RW, Wood RR, Fouty B, Solodushko V. Evaluation of DNA-launched virus-like particle vaccines in an immune competent mouse model of Chikungunya virus infection. Vaccines (Basel). 2021 Apr 2;9(4):345.

Rayner JO, Roberts RA, Kim J, Poklepovic A, Roberts JL, Booth L, Dent P. AR12 (OSU-03012) suppresses GRP78 expression and inhibits SARS-CoV-2 replication. Biochem Pharmacol. 2020 Dec;182:114227.

Smith DR, Schmaljohn CS, Badger C, Ostrowski K, Zeng X, Grimes SD, Rayner JO. Comparative pathology study of Venezuelan, eastern, and western equine encephalitis viruses in non-human primates. Antiviral Res. 2020 Oct;182:104875.

Verhoeve VI, Plumer ML, Driscoll TP, Macaluso KR, Azad AF, Gillespie JJ. The complete mitochondrial genome of the cat flea, *Ctenocephalides felis*. Mitochondrial DNA B Resour. 2020 Oct 5;5(3):3422-3424.

**II. PUBLISHED ABSTRACTS**

Kim JH, Wood RR, Roberts RA, Li J, Sobol R, Rayner JO. Growth property of SARS-CoV-2 in various cell lines [virtual presentation]. Proceedings of the 33<sup>rd</sup> US-Korea

Conference on Science, Technology and Entrepreneurship; 2020 Dec 14-17; Vienna, VA. p. 85.

Saleh L, Boyd A, Aragon IV, Souterhs D, Le T, McDonalld W, Koloteva A. Spadafora D, Mneimneh W, Barrington RA, Richter W. In the eye of the cytostorm: phosphodiesterase 4B (PDE4B) ablation alleviates inflammation and hypothermia in *P. aeruginosa* lung infection. *Am J Respir Crit Care Med*. 2021;203:A1299. Available from: [https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.03.1\\_MeetingAbstracts.A1299](https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.03.1_MeetingAbstracts.A1299).

### III. PUBLISHED BOOKS

### IV. INVITED PRESENTATIONS

Kim J. Invited speaker. Growth property of SARS-CoV-2 in various cell lines [virtual presentation]. 33<sup>rd</sup> US-Korea Conference on Science, Technology and Entrepreneurship; 2020 Dec 16; Vienna, VA.

Macaluso K. Invited speaker. Vector response to *Rickettsia* and the variables driving pathogen transmission [virtual presentation]. 2020 Entomology Annual Meeting; 2020 Nov 11; Annapolis, MD.

Macaluso K. Invited speaker. Transmission biology of Rickettsial agents. Department of Microbiology & Immunology at the Tulane University School of Medicine; 2021 Mar 31; New Orleans, LA.

Macaluso K. Invited speaker. Role of arthropods in transmission of leprosy [virtual presentation]. Leprosy Research Initiative Spring Meeting; 2021 Apr 9; Amsterdam, Netherlands. Available from: <https://www.youtube.com/watch?v=IHY55tLdP8c>

### V. NATIONAL PROFESSIONAL RECOGNITION

Audia JP: Grant Reviewer, National Institutes of Health -IDIA-B (80) Topics in Bacterial Pathogenesis study session, National Institutes of Health ZA11 MFH-D-M2 NIH support for conferences and scientific meetings study section, U.S. Army Medical Research and Development Command, Congressionally directed medical research programs, Peer Reviewed Medical Research Program (PRMRP). Journal Editor, Board Member, *Frontiers in Cellular Infection Microbiology*. Journal Peer Review, *Clinica Chimica Acta*, *Advances in Clin Chem*, *PLOS Pathogens* (guest editor), *Scientific Reports*, *FASEB Journal*, *mBio*.

Barrington RA: Grant Reviewer, Immunology BSc study section for AHA. Journal Editor, Associate Editor, *The Journal of Immunology*. Review Editor, *Frontiers in B Cell Biology*. Peer Reviewer, *Journal of Experimental Medicine*, *European Journal of Immunology*, *American Journal of Physiology-Lung Cellular and Molecular Physiology*, *Cytometry*, *PLoS One*, *The Ochsner Journal*, *Journal of DNA and Cell Biology*. Member, American Association of Immunologists, Association for Research in Vision and Ophthalmology.

Hermance ME: Journal Reviewer, *Vector-borne and Zoonotic Diseases*, *Parasites & Vectors*, *Frontiers: American Journal of Tropical Medicine and Hygiene*. Professional Society Committees, Member of American Society of Tropical Medicine & Hygiene Committees, American Committee on Arthropod-Borne and Zoonotic Viruses (ACAV), American Committee of Medical Entomology (ACME).

Macaluso KR: Grant Reviewer, NIH/OD ZRG1 MOSS-R (70) R – RFA-RM 19006: NIH Director's New Innovator Award (DP2), DoD – Tick-borne Disease Research Program, USA-COM Internal Research Program. Journal Editor, Subject Editor, *Journal of Medical Entomology*. Peer Reviewer, *PLoS Pathogens*, *PLoS Neglected Tropical Diseases*, *PLoS ONE*, *Journal of Medical Entomology*, *ASM-Infection and Immunity*, *American Journal of Tropical Medicine and Hygiene*, *Cellular Microbiology*, *Tick & Tick-borne Diseases*, *Pathogens*, *Frontiers Microbiology*, *Scientific Reports*, *Emerging Infectious Diseases (CDC)*, *Nature Communications*, *mBio*, *Cell*. Professional Society Leadership Roles, President, American Society for Rickettsiology. Member, Association of Medical School Microbiology and Immunology Chairs, Tick-borne Disease Working Group, Federal Advisory Committee, Department of Health and Human Services. External Tenure Reviewer, Texas A&M, University of Indiana, Bloomington, Baylor College of Medicine, Colorado State University, University of Missouri.

Rayner JO: Journal Editor, Board Member *Vaccines*. Journal Peer Reviewer, *The FASEB Journal*, *Viruses*; *PLOS – Pathogens*, *PLOS – Neglected Pathogens*, *Nature Communications*, *Science Translational Medicine*, *Science Translational Medicine*, *Emerging Infectious Diseases*, *The American Journal of Tropical Medicine and Hygiene*, *Antiviral Research*. Professional Society Committees, American Committee on Arthropod-borne Viruses.

Rayner JO: Journal Editor, Board Member *Vaccines*. Journal Peer Reviewer, *The FASEB Journal*, *Viruses*; *PLOS – Pathogens*, *PLOS – Neglected Pathogens*, *Nature Communications*, *Science Translational Medicine*, *Science Translational Medicine*, *Emerging Infectious Diseases*, *The American Journal of Tropical Medicine and Hygiene*, *Antiviral Research*. Professional society committees, American Committee on Arthropod-borne Viruses.

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The 2020-2021 academic year for the Department was vibrant. The Department remains highly active in the education mission of the College. Dr. Audia continued to oversee the graduate student teaching by coordinating the Infectious Diseases and Host Defense Track (IDHD). The Department now has nine graduate students in the IDHD track, and the faculty mentor graduate students across all tracks in the College of Medicine. Dr. Audia graduated one PhD student, Kierra Hardy, who went on to a postdoctoral fellowship at Harvard. Dr. Audia also continues to serve as the Module Director for the Infectious Disease and Immunology (IDI) course, and he received the Scarlet Sash in recognition of his efforts to the medical education experience. The faculty were active in research and

scholarship with eight peer-reviewed papers published and four invited presentations. Additionally, faculty were invited to review grants and papers in their fields, signifying recognition of their expertise in research. Faculty in the Department also received awards for twenty percent of the applications submitted for extramural research support from state/federal agencies and industry. Dr. Hermance was awarded her first NIH application—a little more than one year after joining our faculty. It was also a busy year associated with faculty interviews. We hosted six candidates by Zoom seminar and had five candidates visit the campus. While we unfortunately were not able to secure our top recruit, we had the opportunity to showcase our Department and University. The faculty remain active in service at the University, College, and community levels. Dr. Barrington continues to oversee the flow cytometry core facility, with laboratories located in MSB and at the MCI. The faculty regularly lead and serve on committees (*e.g.*, IACUC and IBC) and organizations (Faculty Senate) throughout the year. The faculty continued with community outreach by mentoring senior students from St. Paul's Episcopal School in the laboratory. Dr. Barrington remains actively involved with the Lions Club, which supports components of his research program. These activities are considered essential to our service mission.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Neurology**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Beydoun SR, Sharma KR, Bassam BA, Pulley MT, Shije JZ, Kafal A. Individualizing therapy in CIDP: a mini-review comparing the pharmacokinetics of Ig with SCIG and IVIg. *Front Neurol*. 2021 Mar 8;12:638816.

Jobst BC, Conner KR, Coulter D, Fried I, Guilfoyle S, Hirsch LJ, Hogan RE, Hopp JL, Naritoku D, Plueger M, Schevon C, Smith G, Valencia I, Gaillard WD. Highlights from AES2020, a virtual American Epilepsy Society experience. *Epilepsy Curr*. 2021 Jul-Aug;21(4):303-310.

Meuleman A, Matthys C, Vangoitsenhoven R, Sabino J, Van Der Schueren P, Maertens P, Pans C, Stijnen P, Bruyneel L. A multicenter propensity score matched analysis in 73,843 patients of an association of nutritional risk with mortality, length of stay and readmission rates. *Am J Clin Nutr*. 2021 Sep;114(3):1123-1130.

Romano JG, Gardener H, Campo-Bustillo I, Khan Y, Tai S, Riley N, Smith EE, Sacco RL, Khatri P, Alger HM, Mac Grory B, Gulati D, Sangha NS, Craig JM, Olds KE, Benesch CG, Kelly AG, Brehaut SS, Kansara AC, Schwamm LH; MaRISS Investigators (Sugg R, collaborator). Predictors of outcomes in patients with mild ischemic stroke symptoms: MaRISS. *Stroke*. 2021 Jun;52(6):1995-2004.

Sharma K, Cummock J, Maertens P. Acute arterial ischemic stroke in a treated child with Hunter's syndrome: a case report and review of the literature. *J Pediatr Neurol*. 2021 Apr;19(2):69-75.

Singhapakdi K, Maertens P. Gratification disorder as an early marker of Rett syndrome: two pediatric case reports. *J Pediatr Neurol*. 2021 Aug;19(4):264-269.

Singhapakdi K, Maertens P, Gonzalez J, Soh P, Bhat R, Jha OP. A rare association of right hemispheric dysgenesis with congenital anophthalmia in a neonate. *Childs Nerv Syst*. 2021 Jan;37(1):329-334.

Vossler DG, Bainbridge JL, Boggs JG, Novotny EJ, Loddenkemper T, Faught E, Amengual-Gual M, Fischer SN, Gloss DS, Olson DM, Towne AR, Naritoku D, Welty TE. Treatment of refractory convulsive status epilepticus: a comprehensive review by the American Epilepsy Society Treatments Committee. *Epilepsy Curr*. 2020 Sep-Oct;20(5):245-264.

Yuliati A, Federman M, Rao LM, Chen L, Sim MS, Matsumoto JH. Prevalence of seizures and risk factors for mortality in a continuous cohort of pediatric extracorporeal membrane oxygenation patients. *Pediatr Crit Care Med*. 2020 Nov;21(11):949-958.

## II. PUBLISHED ABSTRACTS

Jafar B, Sharma KB, Maertens P. A new family of x-linked alpha thalassemia mental retardation syndrome has features mimicking Smith-Lemli-Opitz syndrome. J Investig Med. 2021 Feb;69(2):607. Abstract no. 478.

Jafar B, Sheikh A, Sharma KP, Maertens P. The novel use of a synthetic amino acid analog in management of Menkes disease. J Investig Med. 2021 Feb;69(2):453-454. Abstract no. 91.

Lavu R, Maertens P, Zayek M, Bhat R. Transcranial Doppler flow assessment for early prediction of brain injury in asphyxiated neonates receiving therapeutic hypothermia. J Investig Med. 2021 Feb;69(2):452. Abstract no. 87.

Chinchilla Putzeys CI, Batra M, Maertens P, Sharma KP. Progressive respiratory failure due to anterior spinal cord infarction in an adolescent boy. J Investig Med. 2021 Feb;69(2):606-607. Abstract no. 476.

Singhapakdi K, Gonzalez J, Bhat R, Maertens P. Twins with congenital lymphocytic choriomeningitis virus induced neuroteratogenic encephalopathy. J Investig Med. 2021 Feb;69(2):610-611. Abstract no. 486.

Maertens P, Soh P. Paroxysmal kinesigenic dyskinesia and early infantile epileptic encephalopathy in a boy heterozygous for the de novo R853Q mutation (c.2558 G>A) in the SCN2A gene. American Epilepsy Society; 2020 Dec 4-8; Chicago, IL.

## III. PUBLISHED BOOKS

## IV. INVITED PRESENTATIONS

Bassam BA. Invited speaker. Nerve conduction pitfalls [virtual presentation]. American Association of Neuromuscular & Electrodiagnostic Medicine; 2020 Oct 7; Rochester MN.

Bassam BA. Invited speaker. CIPD and its variants: diagnosis challenge and management update [virtual presentation]. Southern Clinical Neurological Society; 2021 Jan 19; Tallahassee, FL.

Bassam BA. Invited speaker. Diabetic neuropathy classification and management update. Eisenhower Medical Center Grand Rounds; 2021 May 20; Rancho Mirage, CA.

## V. NATIONAL PROFESSIONAL RECOGNITION

Bassam BA, Director Nerve Conduction Study and EMG Lab.

Bassam BA, Contribute to AAN neuromuscular session guidelines for residents training in electromyography.

Bassam BA, Question writer and reviewer for ABEM and AANEM Self-Assessment Program committee.

Bassam, BA, Chair for the NMD session and SCNS virtual format 2021 Jan 19.

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The loss of one neuro interventionalist has limited our comprehensive stroke center services but we are recruiting two new neuro interventionalists to join our team and this will lead to growth and stability. For FY22, we anticipate further growth and development of programs providing services unique to the Gulf region.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Neurosurgery**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Agarwal N, Casillo SM, Simonds G, Wakefield A, Phelps J, Linskey ME, Bell R, Zalatimo O, Akbari SH, Decker M, Benko MJ, Harraher C, Wang V, Guthikonda B, Kimmell KT, Menger R, Rosenow JM, Cozzens J, Schirmer C; Council of State Neurosurgical Societies. Socioeconomic implications of professional relationships within modern care delivery systems. *World Neurosurg.* 2021 Jul;151:353-363.

Agarwal N, Youngerman B, Kaakaji W, Smith G, McGregor JM, Powers CJ, Guthikonda B, Menger R, Schirmer CM, Rosenow JM, Cozzens J, Kimmell KT; Council of State Neurosurgical Societies (CSNS). Optimizing medical care via practice guidelines and quality improvement initiatives. *World Neurosurg.* 2021 Jul;151:375-379.

Baum GR, Ha AS, Cerpa M, Zuckerman SL, Lin JD, Menger RP, Osorio JA, Morr S, Leung E, Lehman RA, Sardar Z, Lenke LG. Does the global alignment and proportion score overestimate mechanical complications after adult spinal deformity correction? *J Neurosurg Spine.* 2021 Jan;3-4(1):96-102.

Bixby EC, Skaggs K, Marciano GF, Simhon ME, Menger RP, Anderson RCE, Vitale MG. Resection of congenital hemivertebra in pediatric scoliosis: the experience of a two-specialty surgical team. *J Neurosurg Pediatr.* 2021 Sep;28(3):250-259.

DiGiorgio AM, Menger RP. Commentary: an analysis of medicare reimbursement for neurosurgeon office visits: 2010 compared to 2018. *Neurosurgery.* 2021 Jul 15;89(2):E128-E129.

Kandregula S, Lefever D, Trosclair K, Savardekar A, Menger R, Agarwal N, Kimmell K, Mazzola C, Cozzens J, Rosenow J, Schirmer C, Guthikonda B; Council of State Neurosurgical Societies. "There's got to be a better way": global perspectives of medicolegal environment and neurosurgical socioeconomics. *World Neurosurg.* 2021 Jul;151:341-347.

Kim DC, Boyd EJ, Boyd TA, Granger HE, Menger RP. Severe hypotension with loss of motor evoked potentials during cervical surgery prompting immediate cardiovascular resuscitation. *Surg Neurol Int.* 2021 Jun 14;12:281.

Lai CS, Cerpa M, Zuckerman SL, Menger R, Lenke LG. L5 vertebral column resection for correction of severe lumbar hyperlordosis and pelvic anteversion in an adolescent with prior myelomeningocele repair and lumbar fusion: case report. *Oper Neurosurg (Hagerstown).* 2021 Jul 15;21(2):E129-E135.



Lazzari ZT, Aria KM, Menger R. Neurosurgery and spinal adaptations in spaceflight: a literature review. *Clin Neurol Neurosurg*. 2021 Aug;207:106755.

Lefever D, Esfahani DR, Kandregula S, Trosclair K, Demand A, Vega A, Stacy J, Hussein N, Dossani R, Pendharkar A, Menger R, Kosty J, Mazzola C, Agarwal N, Kimmell K, Rosenow J, Cozzens J, Schirmer C, Guthikonda B; Council of State Neurosurgical Societies (CSNS). The medical legal environment in neurosurgery: an informative overview of the stages of litigation and distinct challenges. *World Neurosurg*. 2021 Jul;151:370-374.

Lefever D, Kelly PD, Zuckerman SL, Agarwal N, Guthikonda B, Kimmell KT, Schirmer C, Rosenow JM, Cozzens J, Orrico KO, Menger R. Advocacy to government and stakeholders. *World Neurosurg*. 2021 Jul;151:380-385.

Mallari RJ, Thakur JD, Griffiths C, Krauss H, Eisenberg A, Barkhoudarian G, Kelly DF. Tuberculum sellae meningiomas in pregnancy: 3 cases treated in the second trimester and literature review. *World Neurosurg*. 2020 Nov;143:268-275.

Mallari RJ, Thakur JD, Rhee JH, Eisenberg A, Krauss H, Griffiths C, Sivakumar W, Barkhoudarian G, Kelly DF. Endoscopic endonasal and supraorbital removal of tuberculum sellae meningiomas: anatomic guides and operative nuances for keyhole approach selection. *Oper Neurosurg (Hagerstown)*. 2021 Jul 15;21(2):E71-E81.

Menger R, Kim HK, Vitale MG. Spine safety: optimum integration of technology. In: Sethi RK, Wright AK, Vitale MG, editors. *Value based approaches to spine care: sustainable practices in an era of over-utilization*. Cham, Switzerland: Springer; 2020. Chapter 9, p. 171-190.

Menger R, Lin J, Cerpa M, Lenke LG. Epidural hematoma due to Gardner-Wells Tongs placement during pediatric spinal deformity surgery. *Spine Deform*. 2020 Oct;8(5):1139-1142.

Menger R, Park P, Marciano G, Bixby E, Cerpa M, Roye D, Roye B, Vitale M, Lenke L. Ambulatory capacity following fusion to the sacrum with pelvic fixations pediatric spinal deformity patients. *Spine Deform*. 2021 Mar;9(2):491-499.

Menger R, Park PJ, Bixby EC, Marciano G, Cerpa M, Roye D, Roye BD, Vitale M, Lenke L. Complications in ambulatory pediatric patients with nonidiopathic spinal deformity undergoing fusion to the pelvis using the sacral-alar-iliac technique within 2 years of surgery. *J Neurosurg Pediatr*. 2021 Jul;(1):13-20.

Menger R, Shaw T, Bunch J, Barry J, Marciano G, Menger A, Martino A, Lenke L, Vitale MG. Health care lobbying, political action committees, and spine surgery. *Spine (Phila Pa 1976)*. 2020 Dec 15;45(24):1736-1742.

Menger R, Youngerman B, Dossani RH, Godzik J, Tenny S, Cozzens J, Agarwal N, Guthikonda B, Kimmell KT, Schirmer C, Rosenow JM, Tumialán LM; Council of State Neurological Societies. Neurosurgery billing and reimbursement in 2021. *World Neurosurg.* 2021 Jul;151:348-352.

Menger RP, Valerio IL. Neurological manifestations of COVID-19 within the intensive care unit during a military deployment for the early pandemic surge in New York City. *Cureus.* 2021 Mar 12;13(3):e13858.

Pieters TA, Susa S, Agarwal N, Guthikonda B, Menger R, Schirmer C, Cozzens J, Steinmetz M, Rosenow J, Kimmell KT; Council of State Neurosurgical Societies. Credentialing, certification, and peer review essentials for the neurosurgeon. *World Neurosurg.* 2021 Jul;151:364-369.

Ravindra VM, Dunn GP, Belverud S, Carroll CP, Zuckerman SL, Menger R, Malone D, Cooke J, Porenksy P, Klugh Iii A, Gilhooly J, Tomlin J, Bell R, Ikeda DS. U.S. neurosurgical response to COVID-19: forging a path toward disaster preparedness. *Mil Med.* 2021 May 3;186(5-6):549-555.

Thakur JD, Corbin A, Barkhoudarian G, Kelly DF. Risks of transsphenoidal surgery. In: Honegger J, Reincke M, Petersenn S, editors. *Pituitary tumors: a comprehensive and interdisciplinary approach.* Cambridge, MA: Academic Press; 2021. Chapter 20, p. 293-306.

Thakur JD, Corlin A, Mallari RJ, Huang W, Eisenberg A, Sivakumar W, Krauss H, Griffiths C, Rettinger S, Cohan P, Barkhoudarian G, Araque KA, Kelly D. Pituitary adenomas in older adults ( $\geq 65$  years): 90-day outcomes and readmissions: a 10-year endoscopic endonasal surgical experience. *Pituitary.* 2021 Feb;24(1):14-26.

Thakur JD, Savardekar AR, Raju B, Nanda A. In reply: commentary: Maximilian Sternberg (1863-1934): the man behind Sternberg's canal and his contribution to the modern-day skull base anatomy and neuroscience-historical vignette. *Neurosurgery.* 2021 Apr 15;88(5):E461.

Wang T, Zhou G, He M, Xu Y, Rusyniak WG, Xu Y, Ji Y, Simon RP, Xiong ZG, Zha XM. GPR68 is a neuroprotective proton receptor in brain ischemia. *Stroke.* 2020 Dec;51(12):3690-3700.

## **II. PUBLISHED ABSTRACTS**

## **III. PUBLISHED BOOKS**

## **IV. INVITED PRESENTATIONS**

Menger R. Invited speaker. Non-operative strategies in early onset scoliosis [virtual presentation]. Society of Spine Surgeons of Pakistan; 2021 Apr 30; Islamabad, Pakistan.

Menger R. Invited speaker. COVID-19 deployment neurological manifestations [virtual presentation]. Navy Hospital Portsmouth Grand Rounds; 2021 Jun 13, Portsmouth, VA.

Menger R. Invited speaker. Neurological manifestations of COVID-19; the NMST experience [virtual presentation]. Massachusetts General Hospital Neurosurgery Grand Rounds; 2021 May 26; Boston, MA.

Menger R. Invited speaker. Safety in spine surgery [video]. “The Doctor is In” segment WKRG News 5; 2021 Aug 6; Mobile, AL. Available from: <https://www.wkrg.com/the-doctor-is-in/the-doctor-is-in-safety-in-spine-surgery/>

Menger R. Invited speaker. Back pain: from conservative therapy to giant surgery [virtual presentation]. University of South Alabama Med School Café; 2020 Oct 20; Mobile, AL. Available from: <https://www.youtube.com/watch?v=2eLnxtJ6xNI&t=4s>

Menger R. Invited speaker. Impact and treatment of back pain on deployed and operational sailors and Marines. U. S. Navy Operational Medicine Symposium; 2021 Jun 6; Camp Lejeune, NC.

Thakur JD. Invited speaker. Supraorbital approaches for anterior fossa meningioma (video). Journal of Neuro-Oncology & Lenox Hill Neurosurgery Tumor Talk; 2020 Nov 2; New York, NY. Available from: <https://www.youtube.com/watch?v=0reLrPXLXHA>

## **V. NATIONAL PROFESSIONAL RECOGNITION**

Anthony M. Martino: Chair Department of Neurosurgery, University Hospital Medical Executive Committee, Clinical Chairs Committee, Operations Committee, Infection Control Committee, Student Promotion and Evaluation Committee, Surgery Committee, Chartis Dyad Strategic Leader Development, Congress of Neurological Surgeons, American Association of Neurological Surgeons.

Richard Menger: Emerging Leader United Way of Southwest Alabama, Navy Marine Corps Achievement Medal, National Service Defense Ribbon, Global War on Terrorism Service Medal, Humanitarian Service Medal, Military Outstanding Volunteer Medal, Armed Forces Reserve Medal, COVID 19 Warrior Award, Scoliosis Research Society, North American Spine Society, Congress of Neurological Surgeons, American Association of Neurological Surgeons, Council of State Neurological Societies, Association of Military Surgeons of the United States.

Jai Deep Thakur: Congress of Neurological Surgeons, North American Skull Base Society.

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The Department of Neurosurgery successfully brought on our 4<sup>th</sup> faculty member this past year, Dr. Jai Thakur. He has done extremely well in his first year, developing a substantial cranial practice focused on minimally invasive cranial and skull base surgery.

Dr. Richard Menger's practice has thrived since his return from his Navy commitment. He has continued in the development of the Spine Institute. He plans to integrate pediatric orthopedic spine care into the Institute this coming year.

Our collaborative efforts with the Department of Neurology in epilepsy care and deep brain stimulation continue. We continue to see growth in both of these endeavors.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Obstetrics and Gynecology**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Jacome LS, Deshmukh SK, Thulasiraman P, Holliday NP, Singh S. Impact of COVID-19 pandemic on ovarian cancer management: adjusting to the new normal. *Cancer Manag Res.* 2021 Jan 14;13:359-366.

Manci EA, Alvarez SS, McClellan SB, Campbell PM, Dasaraju S, Winkler CL, Shah AK. Biphasic postnatal umbilical cord shortening. *Pediatr Dev Pathol.* 2021 Mar-Apr;24(2):116-120.

Rizk BRMB, Holliday CP, Khalaf Y. Fibroids and reproduction: a bird's eye view. In: Rizk BRMB, Khalaf Y, Borahay MA, editors. *Fibroids and reproduction.* Boca Raton, FL. CRC Press; 2020. Chapter 1, p. 1-10.

Sinha P, Al Basha S, Gottlieb I, Holliday CP, Kovanci, E, Rizk, BRMB. Hysteroscopic removal of intrauterine adhesions and intrauterine septum. In: Rizk BRMB, Abuzeid MI, Alkatout I, & Mettler L, editors. *Advances in minimally invasive gynecologic reproductive surgery.* Boca Raton, FL. CRC Press; 2021. Chapter 16, p. 152-161.

Sudan SK, Deshmukh SK, Poosarla T, Holliday NP, Dyess DL, Singh AP, Singh S. Resistin: an inflammatory cytokine with multi-faceted roles in cancer. *Biochim Biophys Acta Rev Cancer.* 2020 Dec;1874(2):188419.

**II. PUBLISHED ABSTRACTS**

**III. PUBLISHED BOOKS**

**IV. INVITED PRESENTATIONS**

**V. NATIONAL PROFESSIONAL RECOGNITION**

Mary Munn, M.D. – Chair of Search Committee for Anesthesiologist

**VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The OB/GYN department has recruited four OB/GYN Generalists, two MFM specialists and a lead for our OB Hospitalist program. We have also completed a High Risk OB Complications guide, an ERAS project, obtained dialysis services at CW, opened the Women's Complex Care Unit at CW, reinstated fetal boards, updated DVT prophylaxis

protocols, acquired Spanish Fort and Spring Hill locations, created curricula for OB ultrasound residents, purchased new ultrasound equipment, recruited sonographers for increasing volume, increased funded and unfunded research projects, and our department has received AIUM accreditation.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Orthopaedic Surgery**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Haupt E, OKeefe KJ, Clay TB, Kenney N, Farmer KW. Biomechanical properties of small-size hamstring autografts. *Cureus*. 2020 Jun 20;12(6):e8728.

MARS Group, Albright JP, Alexander Creighton R, Allen CR, Amendola AN, Anderson AF, Andrish JT, Annunziata CC, Arciero RA, Bach BR, Baker CL, Bartolozzi AR, Baumgarten KM, Bechler JR, Benjamin Ma C, Berg JH, Bernas GA, Brockmeier SF, Brophy RH, Bush-Joseph CA, Butler JBV, Campbell JD, Carey JL, Carpenter JE, Cole BJ, Cooper DE, Cooper JM, Cox CL, Dahm DL, David TS, DeBerardino TM, Dunn WR, Flanigan DC, Frederick RW, Ganley TJ, Garofoli EA, Gatt CJ, Gecha SR, Giffin JR, Haas AK, Hame SL, Hannafin JA, Harner CD, Harris NL, Hechtman KS, Hershman EB, Hoellrich RG, Hosea TM, Huston LJ, Johnson DC, Johnson TS, Jones MH, Kaeding CC, Kamath GV, Klootwyk TE, Lantz BBA, Levy BA, Mann B, Marx RG, Matava MJ, Mathien GM, McAllister DR, McCarty EC, McCormack RG, Miller BS, Nissen CW, O'Neill DF, Owens BD, Parker RD, Peter Maiers G, Purnell ML, Ramappa AJ, Rauh MA, Rettig AC, Sekiya JK, Shea KG, Sherman OH, Li X, Slauterbeck JR, Smith MV, Spang JT, Spindler KP, Stuart MJ, Svoboda LSJ, Taft TN, Tenuta JJ, Tingstad EM, Vidal AF, Viskontas DG, White RA, Williams JS, Wright RW, Wolcott ML, Wolf BR, York JJ. Rate of infection following revision anterior cruciate ligament reconstruction and associated patient- and surgeon-dependent risk factors: retrospective results from MOON and MARS data collected from 2002 to 2011. *J Orthop Res*. 2021 Feb;39(2):274-280.

Michaeli D, Rajendra R, Kim DC, Goodlett MD, Humphries JR, Nimityongskul P. Schmid type metaphyseal chondrodysplasia in a large single genetic lineage. *J Hum Clin Gen* 2021;3(1):1-8.

Roach RP, Clay TB, Emblom BA. Pelvis and hip injuries/core injuries in football. In: Farmer KW, editor. *Football injuries: a clinical guide to in-season management*. Springer Publishing; 2021. Chapter 9, p. 169-189.

Roth TS, Beason DP, Clay TB, Cain EL Jr, Dugas JR. The effect of ulnar collateral ligament repair with internal brace augmentation on articular contact mechanics: a cadaveric study. *Orthop J Sports Med*. 2021 Apr 23;9(4):23259671211001069.

Squiers M, Nelms NJ, Davis AT, Halsey DA, Slauterbeck JR, Blankstein M. A poster summarizing the American Academy of Orthopaedic Surgeons knee osteoarthritis clinical practice guideline is a powerful tool for patient education: a randomized controlled trial. *J Arthroplasty*. 2021 Jan;36(1):102-106.e5.

**II. PUBLISHED ABSTRACTS**

### **III. PUBLISHED BOOKS**

### **IV. INVITED PRESENTATIONS**

### **V. NATIONAL PROFESSIONAL RECOGNITION**

### **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

Brewer, Jeffrey. Dr. Brewer serves as Director of the University of South Alabama Orthopaedic Surgery Residency Program. Dr. Brewer coordinated and participated in numerous research projects with Orthopaedic Surgery residents and University of South Alabama College of Medicine residents and students. Dr. Brewer coordinated weekly Orthopaedic Surgery resident conferences and grand rounds. Dr. Brewer presented grand rounds lectures regarding orthopaedic trauma surgical conditions and procedures for the University of South Alabama Department of Orthopaedic Surgery Residency Program. Additionally, he served on the Burn/Trauma Operational Committee and Peer Review Committee at University Hospital.

Clay, Terry Bradly. Dr. Clay serves as Assistant Director of the University of South Alabama Orthopaedic Surgery Residency Program and Medical Student Education Director. Dr. Clay has presented several grand rounds lectures regarding orthopaedic surgical techniques and sports injury related orthopaedic medical conditions for the University of South Alabama Orthopaedic Surgery Residents. Dr. Clay provides orthopaedic medical services for University of South Alabama athletes and sports teams and serves as a team physician for University of South Alabama Athletics Department. Additionally, Dr. Clay taught the OPD 444 Acting Internship in Sports Medicine, and OPD 450 Acting Internship in Orthopaedic Surgery. Dr. Clay continued his efforts toward development of three new clerkship modules for medical students (Sports Medicine, Trauma and Pediatric). Dr. Clay is a reviewer for *The American Journal of Sports Medicine*.

Madison, Randall Drew. Dr. Madison continued his appointment as Faculty Development Director for the University of South Alabama Department of Orthopaedic Surgery Residency Program. Dr. Madison has presented grand rounds lectures regarding orthopaedic trauma surgical conditions and procedures for the University of South Alabama Department of Orthopaedic Surgery Residency Program.

Nimityongskul, Prasit. Dr. Nimityongskul served as the interim Department Chair during the 2020-21 academic year until the newly appointed chairman arrived in January 2021. Dr. Nimityongskul presented and moderated several grand rounds lectures regarding pediatric orthopaedic conditions and anomalies for the University of South Alabama Orthopaedic Surgery Residency program. Dr. Nimityongskul provides pediatric



orthopaedic services once monthly at clinics in Atmore and Brewton, Alabama. Dr. Nimityongskul continued his longitudinal research regarding Schmid type metaphyseal chondrodysplasia in a large single genetic lineage study, which included previous and current residents in the University of South Alabama Department of Orthopaedic Surgery Residency Program. The research study was published in 2021.

Slauterbeck, James R. Dr. Slauterbeck joined the Department of Orthopaedic Surgery in January 2021. His accomplishments include the interviewing, vetting, and hiring of five new faculty who will be joining the department between September 2021 and September 2022. He was successful in recruiting accomplished physicians in the following specialties: Orthopaedic hand/wrist and tumor surgery, pediatric orthopaedic surgery, orthopaedic trauma surgery, orthopaedic foot and ankle surgery and orthopaedic total joint surgery. Dr. Slauterbeck worked with department faculty to develop a Professionalism Statement and has posted it in the patient rooms and other key areas of the clinic. He has met and negotiated with division and program leaders and clinical department chairman to improve the overall status of the orthopaedic Surgery department and continues to help improve the quality of health care provided by the department. Dr. Slauterbeck negotiated with community physicians and orthopaedic groups to enlist expertise for treatment of orthopaedic sports injuries and increase pediatric access to orthopaedic care. Dr. Slauterbeck coordinated with community leaders and USA Sports to bring to fruition the inaugural MCPSS High School Sports Physicals Day held at the Mitchell Center, wherein Mobile County Public School high school athletes were screened for health and wellness to clear them to participate in high school team sports. Orthopaedic Surgery department physicians and residents, along with Sports Medicine physicians and staff members, all participated in the process. Dr. Slauterbeck has two research projects underway and is working with department faculty to increase the number of cases to contribute to the studies. Topics for the studies are hip fracture management and diabetic feet management. Dr. Slauterbeck organized a monthly research seminar with invited researchers and physicians from the College of Medicine to initialize the process for shared research studies and projects. He is including faculty as well as residents in the research process. Nine orthopaedic residents presented research proceedings at the 2021 USA Resident and Fellow Scholarship Exposition held in June 2021. Additionally, Dr. Slauterbeck served on the UH Search Committee, and is involved in the University's vetting and interview process, for a Chair for the Anesthesiology Department. Dr. Slauterbeck began the process of meeting with the University Hospital and Children's Women's Perioperative Coordinators to maximize efficiency of the operating rooms and health care staff for surgical procedures. Dr. Slauterbeck serves as a journal peer reviewer for the *American Journal of Sports Medicine* and the *Journal of Bone and Joint Surgery*. He is a member of the Board of Directors for the Alabama Orthopaedic Society and the American Orthopaedic Society for Sports Medicine.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Pathology**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Adebayo M, Singh S, Singh AP, Dasgupta S. Mitochondrial fusion and fission: the fine-tune balance for cellular homeostasis. *FASEB J*. 2021 Jun;35(6):e21620.

Castro-Gil MP, Sanchez-Rodriguez R, Torres-Mena JE, Lopez-Torres CD, Quintanar-Jurado V, Gabiño-Lopez NB, Viña-Treviño S, del-Pozo-Yauner L, Arellano-Robledo J, Perez-Carreón JI. Enrichment of progenitor cells by 2-acetylaminofluorene accelerates liver carcinogenesis induced by diethylnitrosamine in vivo. *Mol Carcinog*. 2021 Jun;60(6):377-390.”

Davis MJ, Voler LM, Gonzalez SR, Abu-Ghname A, Davies LW, Bedwell JR, Lee GL, Hunt RD, Phung TL, Buchanan EP. Multidisciplinary management of a previously unreported presentation of severe aplasia cutis congenital. *Pediatr Dermatol*. 2021 Mar;38(2):472-476.

Desai SB, Sun RC, Johnson BL, Rialon KL, Iacobas I, Kukreja KU, Schady DA, Phung T, Sanvitha S, Naik-Mathuria BJ. Renal lymphangiectasia in a pediatric patient. *Lymphat Res Biol*. 2020 Dec;18(6):572-578.

Deshmukh SK, Khan MA, Singh S, Singh AP. Extracellular nanovesicles: from intercellular messengers to efficient drug delivery systems. *ACS Omega*. 2021 Jan 11;6(3):1773-1779.

Dokic Y, Albahrani Y, Phung T, Patel K, de Guzman M, Hertel P, Hunt R. Hereditary fibrosing poikiloderma with tendon contractures, myopathy, and pulmonary fibrosis: hepatic disease in a child with a novel pathogenic variant of *FAM111B*. *JAAD Case Rep*. 2020 Oct 10;6(12):1217-1220.

Fujiyoshi K, Bruford EA, Mroz P, Sims CL, O’Leary TJ, Lo AWI, Chen N, Patel NR, Patel KP, Seliger B, Song M, Monzon FA, Carter AB, Gulley ML, Mockus SM, Phung TL, Feilotter H, Williams HE, Ogino S. Opinion: standardizing gene product nomenclature—a call to action. *Proc Natl Acad Sci USA*. 2021 Jan 19;118(3):e2025207118.

Gurnee EA, Johansen ML, Phung TL, Guo EL, Fong A, Tollefson M, Nguyen H, Brandling-Bennett H, Moriarty N, Paller AS, Huynh TN, Lawley LP. Pediatric maculopapular cutaneous mastocytosis: retrospective review of signs, symptoms, and associated conditions. *Pediatr Dermatol*. 2021 Jan;38(1):159-163.

Hawryluk EB, Moustafa D, Bartenstein D, Brahmhatt M, Cordoro K, Gardner L, Gauthier A, Grossman D, Gupta D, Hunt RD, Jen M, Kao P, Kruse LL, Lawley LP, London WB, Mansour D, O’Haver JA, Phung T, Pope E, Price HN, Rogers T, Shah SD, Wolner Z,

Huang J, Marghoob AA. A retrospective multicenter study of fatal pediatric melanoma. *J Am Acad Dermatol*. 2020 Nov;83(5):1274-128.

Herrera GA. Renal amyloidosis with emphasis on the diagnostic role of electron microscopy. *Ultrastruct Pathol*. 2020 Nov 20;44(4-6):325-341.

Herrera GA, del Pozo-Yauner L, Teng J, Zeng C, Shen X, Moriyama T, Ramirez Alcantara V, Liu B, Turbat-Herrera EA. Glomerulopathic light chain-mesangial cell interactions: sortilin-related receptor (SORL1) and signaling. *Kidney Int Rep*. 2021 Mar 13;6(5):1379-1396.

Howell DN, Herrera GA. Electron microscopy in renal pathology: overall applications and guidelines for tissue, collection, preparation, and stains. *Ultrastruct Pathol*. 2021 Jan 2;45(1):1-18.

Jacome LS, Deshmukh SK, Thulasiraman P, Holliday NP, Singh S. Impact of COVID-19 pandemic on ovarian cancer management: adjusting to the new normal. *Cancer Manag Res*. 2021 Jan 14;13:359-366.

Khushman M, Patel GK, Maharjan AS, McMillin GA, Nelson C, Hosein P, Singh AP. The prevalence and clinical relevance of 2R/2R TYMS genotype in patients with gastrointestinal malignancies treated with fluoropyrimidine-based chemotherapy regimens. *Pharmacogenomics J*. 2021 Jun;21(3):308-317.

Liu SS, Bellamkonda V, Phung TL. Angiosarcoma [internet]. Bingham Farms, MI: PathologyOutlines.com; 2021 Mar 30. Available from: <https://www.pathologyoutlines.com/topic/softtissueangiosarcoma.html>

Liu SS, Phung T. Cutaneous mastocytosis [internet]. Metairie, LA: Compendium of Cancer Genome Aberrations, Cancer Genomics Consortium; 2021 Aug 1. Available from: [https://ccga.io/index.php/Cutaneous\\_Mastocytosis](https://ccga.io/index.php/Cutaneous_Mastocytosis)

Lowery J, Phung T. Mast cell sarcoma [internet]. Metairie, LA: Compendium of Cancer Genome Aberrations, Cancer Genomics Consortium; 2020 Oct 23. Available from: [https://ccga.io/index.php/Mast\\_Cell\\_Sarcoma](https://ccga.io/index.php/Mast_Cell_Sarcoma)

Manci EA, Alvarez SS, McClellan SB, Campbell PM, Dasaraju S, Winkler CL, Shah AK. Biphasic postnatal umbilical cord shortening. *Pediatr Dev Pathol*. 2021 Mar-Apr 13;24(2):116-120.

Miree O, Srivastava SK, Dasgupta S, Singh S, Rocconi R, Singh AP. Current and futuristic roadmap of ovarian cancer management: an overview. *Adv Exp Med Biol*. 2021;1330:1-19.

Miree O, Srivastava SK, Khan MA, Sameeta F, Acharya S, Ndetan H, Singh KP, Hertweck KL, Dasgupta S, da Silva LM, Rocconi RP, Carter JE, Singh S, Singh AP.

Clinicopathologic significance and race-specific prognostic association of MYB overexpression in ovarian cancer. *Sci Rep*. 2021 Jun 18;11(1):12901.

Murphy JM, Jeong K, Cioffi DL, Campbell PM, Jo H, Ahn EE, Lim SS. Focal adhesion kinase activity and localization is critical for TNF- $\alpha$ -induced nuclear factor- $\kappa$ B activation. *Inflammation*. 2021 Jun;44(3):1130-1144.

Smith RJ, Metry D, Deardorff MA, Heller E, Grand KL, Iacobas I, Rubin AI, Phung TL, Lopez-Terrada D, Steicher J, Cahill AM, Low D, Treat JR. Segmental congenital hemangiomas: three cases of a rare entity. *Pediatr Dermatol*. 2020 May;37(3):548-553.

Sudan SK, Deshmukh SK, Poosarla T, Holliday NP, Dyess DL, Singh AP, Singh S. Resistin: an inflammatory cytokine with multi-faceted roles in cancer. *Biochim Biophys Acta Rev Cancer*. 2020 Dec;1874(2):188419.

Zhong CS, Coughlin CC, Hawryluk EB, Hook K, Humphrey SR, Kruse L, Lawley L, Kao PC, London WB, Marghoob AA, Phung TL, Pope E; Skin Cancer in Children and Young Adults Consortium, Eichenfield LF, Huang JT. Characteristics of nonmelanoma skin cancer in children without identifiable risk factors. *J Am Acad Dermatol*. 2021 May;84(5):1472-1476.

## II. PUBLISHED ABSTRACTS

Dosunmu GT, Gurganus C, Krishnan V, Motino DAM, Ozair S, Grimm L, Phung T, Blount J, Nelson C, Rich J, Khushman M. Germline testing of patients with personal history of colorectal polyposis by cancer genetics counseling services. *J Clin Oncol*. 2021 Jan 20; 39:(3 Suppl):47. Abstract no. 47.

Haleema SO, Akbar S, Rowley E, Polski JM, Mneimneh W. A diagnostically challenging case of primary thyroid kappa-restricted plasma cell-rich hematolymphoid neoplasm with focal plasmablastic differentiation. *Am J Clin Pathol*. 2020 Oct;154(Suppl 1):S42–S43.

Khushman MM, Proddaturvar P, Akbar S, Mneimneh W, Dal Zotto V, Grimm L, Rider P, Hunter J, Patel GK, Singh AP. The effects of neoadjuvant chemoradiation on exosomal markers (CD63 and CD9) expression in patients with locally advanced rectal adenocarcinoma. *J Clin Oncol*. 2021 Jan 20;39(3 Suppl):101. Abstract no. 101.

Krishnan V, Gurganus C, Motino DAM, Dosunmu GT, Ozair S, Grimm L, Phung T, Blount J, Nelson C, Rich J, Khushman MM. The clinical and molecular characteristics of patients with personal history of colorectal cancer evaluated by cancer genetics counseling services. *J Clin Oncol*. 2021 Jan 20;39(3 Suppl):46. Abstract no. 46.

Manjunath C, Liu S, Manci E, Bhat R, Dolma K. Myocardial infarction in a neonate exposed to severe perinatal asphyxia. *J of Investig Med*. 2021 Feb;69(2):418. Abstract no. 8.

Polski JM. Simplification of clinical flow cytometry by adoption of premixed antibody panels. Am J Clin Pathol. 2020 Oct;154(Suppl 1):S112–S113.

Wilhite A, Wu S, Xiu J, Korn WM. Phung T, Herzog T, In G, Gibney G, Brown J, Rocconi R, Jones N. Too much skin in the game? A paradigm shift in our understanding of vulvar and vaginal melanomas as distinct tumor types compared with cutaneous melanomas. Gynecol Oncol. 2021 Aug;162(Suppl 1):S33-S34. Abstract no. 54.

### III. PUBLISHED BOOKS

### IV. INVITED PRESENTATIONS

Carter J. Invited speaker. COVID-19 and medical terminology for court reporters/CART captioners. Florida Court Reporters Association. 2021 Jun 25; Clearwater, FL.

Carter J. Invited speaker. COVID-19 and medical terminology for court reporters/CART captioners. National Court Reporters Association. 2021 Jul 30; Las Vegas, NV.

del Pozo-Yauner L. Invited speaker. Recombinant protein 6ajl2 as a model for understanding the mechanism of light chain amyloid aggregation [virtual presentation]. Molecular Bases of Proteinopathies; 2021 Jun 5; Ann Arbor, MI.

Phung T. Invited speaker. Debates & updates: vascular anomalies in a changing world [virtual presentation]. International Society for the Study of Vascular Anomalies Congress 2021; 2021 May 13; Milwaukee, WI.

Singh A. Invited speaker. Biotechnology in medicine: advances and contributions [virtual presentation]. Interdisciplinary e-workshop on Fundamentals of Biotechnological Techniques; 2020 Nov 25; Allahabad, India.

### V. NATIONAL PROFESSIONAL RECOGNITION

Ajay Singh: **Keynote speaker**: Interdisciplinary e-workshop on Fundamentals of Biotechnological Techniques, **External examiner**: Aligarh Muslim University; External Examiner SRI Ramachandra of Higher Education and Research, **Member, R&D Committee**: Veteran Affairs Research, Louis Stokes Cleveland VA Medical Center, **Scientist Reviewer**: Young Onset and Health Disparities, Colorectal Cancer Alliance, USA, **Member, Review Panel, Dean's Pre-doctoral Fellowships, College of Medicine, Scientist Reviewer**: Genomic Applications Partnership Program, Phase II, Genome Canada, Canada, **Scientist Reviewer**: Research Innovation Fund, Pancreatic cancer UK, London, UK, **Scientist Reviewer**: Health Research Programme, "la Caixa" Foundation, Barcelona, Spain, **Member, Editorial board**- Journal of Steroids and Hormonal Science, **Member, Editorial board**: Journal of Integrative Oncology, **Member, Editorial board**: Oncology, Gastroenterology, Hepatology Reports, **Member, Editorial Board**- Pancreatic Disorders and Therapy, **Member, Editorial Board**- Cancer Medicine (Clinical Cancer

Research section), John Wiley & Sons · Member, Editorial Board- Frontiers in Bioscience, **Associate Editor:** American Journal of Clinical and Experimental Urology, Associate Editor, Cancer Medicine (Cancer Biology Section), John Wiley & Sons, Associate Editor- Journal of Ovarian research, Academic Editor- PLoS ONE, **Guest Editor-** Cancers, Special Issue on ‘Prostate Cancer’ Guest Editor, Cancer Letters, Special Issue on ‘Exosomes’, Guest Editor- Cancers, Special Issue on ‘Inflammatory cytokines and Chemokines’.

Guillermo Herrera: **President:** International Kidney and Monoclonal Gammopathy Research Group, **Treasurer:** Society for Ultrastructural Pathology, **Abstract Reviewer:** College of American Pathologist, **Reviewer:** Journal of Cell Biology and Cell Metabolism, Archives of Pathology, American Journal of Nephrology, **Editor:** Ultrastructural Pathology

Jacek Polski: **Member:** Annals of Clinical & Laboratory Science Member, Annals of Clinical Pathology Member, Austin Journal of Clinical Pathology Member, BMJ Case Reports Member, Journal of Clinical Pathology

Thuy Phung: **Executive Committee Member:** Asian Society of Dermatopathology, Elected Treasurer: Asian Society of Dermatopathology, **Scientific Committee:** International Society of Vascular Anomalies, **Scientist Reviewer:** Department of Defense

Seema Singh: **Awards-** Mayer Mitchell Annual Award for Excellence in Cancer Research: USA Mitchell Cancer Institute, Mobile, Alabama, Judge: 2nd Annual Allan Tucker Pathology Resident Research Forum, **Committee Member:** Graduate Executive Committee At-Large, Committee Member: M.D. with Research Honors Committee, Committee Member: Institutional Biosafety Committee (IBC), **Chair** Inspection Committee: Institutional Biosafety Committee (IBC), Inspection committee Member: Institutional Biosafety Committee (IBC), **Editorial Board Member:** Cancer Letters (Impact factor: 6.162), 2020-present; Editorial Board Member: Scientific Reports (Impact factor: 4.122), 2019-present; Associate Editor: Frontiers in Oncology (Impact factor: 4.416), 2019-present; Associate Editor: Journal of Ovarian Research (Impact factor: 2.367) 2019-present; Editorial Board Member: Breast Cancer: Targets and Therapy, (Impact factor: 1.57) 2019-present; Editorial board member: PLOS ONE (Impact factor: 2.766), 2013-present; Editorial Board Member: Cancers (Impact factor: 6.162), 2020-present; Associate Editor in Chief: Cancer Management and Research (Impact factor: 3.70) 2019-present.

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The Department of Pathology overcame many obstacles due to COVID 19. The department continually strives to our mission of education, research, and service.

Three residents completed the residency program this year. Dr. Shalla Akbar entered a cytopathology fellowship at the Ohio State University. Dr. Sandhyarani Dasaraju entered a GYN/ breast pathology and cytopathology fellowship at University of Minnesota. Dr.

Saadia Haleema entered a surgical pathology and hematopathology fellowship at the Hartford Hospital.

Once again, the department had a successful residency recruiting year with four residents joining the department: Dr. Mohamed Zedan from Tanta University Faculty of Medicine, Egypt, Dr. Ryan Walde from American University of Integrative Sciences School of Medicine, Barbados, Dr. Lingling Xian from Shihezi University School of Medicine, China, and Dr. Muhammed Tahir from Taishan Medical University, China.

The Pathology Resident program added new members to lead in a productive curriculum: Director is Dr. Jacek Polski, Associate Director Dr. Osama Elkad, program coordinator Bettina Kelson and the new Chief of Residents is Dr. Zan Ahmed.

The Department also welcomed two new faculty members: Dr. Eric Wei from Louisiana State University, Shreveport to work as an Associate Professor. He is a highly accomplished pathologist that specializes in surgical pathology, hematopathology and molecular genetics. His versatility is of great value to the Department of Pathology. Dr. Santanu Dasgupta from Texas East MD Anderson Cancer Center was also recruited as an Assistant Professor in the Research Division. He has developed and established as a researcher working in basic and translational cancer research to develop early detection and monitoring of biomarkers for racial health disparities. With his collaboration it will enhance the prestige and funding in the Research Division of the Department of Pathology at the University Of South Alabama School Of Medicine and the University as a whole.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Pediatrics**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Amritphale A, Chatterjee R, Chatterjee S, Amritphale N, Rahnavard A, Awan GM, Omar B, Fonarow GC. Predictors of 30-day unplanned readmission after carotid artery stenting using artificial intelligence. *Adv Ther.* 2021 Jun;38(6):2954-2972.

Craft R, Jones J, Bradham K. Bright futures: monitoring pediatric hearing. *Alabama Pediatrician.* 2021;2021(1):15. Available from: <https://static1.squarespace.com/static/562e7aaae4b07a09bd62c597/t/603d615375b4fe2370020a27/1614635349588/PDF+1st+quarter+2021.pdf>

Gayoso M, Lim WY, Mulekar MS, Kaulfers AD. Effect of Covid-19 quarantine on diabetes care in children. *Clin Diabetes Endocrinol.* 2021 May 21;7(1):9.

Gremse D. USA Pediatrics announces dedication of small baby unit for specialized care of premature infants. *Alabama Pediatrician.* 2020; 2020(3):12,15. Available from: <https://static1.squarespace.com/static/562e7aaae4b07a09bd62c597/t/5f9b17db1b63e304387bb39f/1603999713219/100290-1+AAP-final+web.pdf>

Gremse DA. USA Pediatrics launches inaugural issue of Variegated, the official newsletter of The Diversity Coalition. *Alabama Pediatrician.* 2020; 2020(4):5. Available from: <https://static1.squarespace.com/static/562e7aaae4b07a09bd62c597/t/5ff6391eb68a9007163dfb06/1609971999552/AAP+Newsletter+2020-04.pdf>

Gremse DA. USA Pediatrics: Dr. Fun's Dance Party USA does its part to encourage vaccination. *Alabama Pediatrician.* 2021;2021(1):11,15. Available from: <https://static1.squarespace.com/static/562e7aaae4b07a09bd62c597/t/603d615375b4fe2370020a27/1614635349588/PDF+1st+quarter+2021.pdf>

Gremse DA. USA Pediatrics: new treatment option for morbid obesity in adolescents at USA. *Alabama Pediatrician.* 2021;2021(2):11,15. Available from: <https://static1.squarespace.com/static/562e7aaae4b07a09bd62c597/t/603d615375b4fe2370020a27/1614635349588/PDF+1st+quarter+2021.pdf>

Hailstone E, Falkos S, Vidal R, Jones KA, Galliard PR, Fan S, Chung AM. Impact of acid suppression therapy on iron supplementation in the pediatric intensive care unit. *J Pediatr Pharmacol Ther.* 2021;26(4):366-371.

Imran H, Siddiqui AH, Wilson F, Pashankar F. Growing teratoma syndrome after chemotherapy for ovarian immature teratoma. *J Pediatr Hematol Oncol.* 2020 Oct;42(7):e630-e633.



Jha P, Sehgal M, Arya S, Woodward CS. Review of delayed sternal closure after congenital heart surgery. *Int J Cardiol Cardiovasc Dis.* 2021;1(2):52-56.

Kaulfers AD, Bhowmick SK. Hashimoto encephalopathy in pediatrics: report of 3 cases. *AACE Clin Case Rep.* 2020 Dec 28;7(1):40-42.

Kaulfers AMD, Lim WY, Bhowmick SK. Unusual endocrinopathies in 18q deletion syndrome: pseudoparathyroidism and hyper-/hypo-thyroidism. *AACE Clin Case Rep.* 2020 Dec 24;7(3):192-194.

Sehgal M, Ladd HJ, Totapally B. Trends in epidemiology and microbiology of severe sepsis and septic shock in children. *Hosp Pediatr.* 2020 Dec;10(12):1021-1030.

Sharma K, Cummock J, Maertens P. Acute arterial ischemic stroke in a treated child with Hunter's syndrome: a case report and review of the literature. *J Pediatr Neurol.* 2021 Apr;19(2):69-75.

Williams JG, Marri P, Ilonze C, Imran H. USA Pediatric Sickle Cell Center's experience with Crizanlizumab (Adakveo) infusion therapy. *Sickle Cell Today USA Health Comprehensive Sickle Cell Center Newsletter.* 2021 Mar;18(1):8-9. Available from: <https://www.southalabama.edu/colleges/com/research/resources/sc-newsletter-2021-03.pdf>

Zaman J, Amritphale A, Malozzi C, Amritphale N, Sehgal M. Costs and predictors of early readmissions in patients with Infective Endocarditis. Utilizing the Nationwide Readmission Database. *Biomedical Research and Clinical Reviews.* 2021 Jul 16;3(4) :1-13. Available from: [https://www.auctoresonline.org/uploads/articles/1628605195Galley\\_Proof-BRCR-21-RA-075.pdf](https://www.auctoresonline.org/uploads/articles/1628605195Galley_Proof-BRCR-21-RA-075.pdf)

## **II. PUBLISHED ABSTRACTS**

Atkins AI, Manjunath C, Ilonze C. Lemierre's Syndrome: an evolving disease. *J Investig Med.* 2021 Feb;69(2):548. Abstract no. 326.

Batra M, Alemayehu H, Hartin C, Eyal F, Zayek M. Trends of gastroschisis in Southwest Alabama over 27 years. *J Investig Med.* 2021 Feb;69(2):637. Abstract no. 553.

Chinchilla Putzeys CI, Al-Saygh F, Roca Garcia MR. Symptomatic clinical variant galactosemia carrier in a 2-month-old girl with normal newborn screening. *J Investig Med.* 2021 Feb;69(2):513. Abstract no. 237.

Chinchilla Putzeys CI, Amritphale N, Roca Garcia MR, Ponnambalam AM. Chronic diarrhea due to homozygous diacylglycerol O-acyltransferase 1 mutation. *J Investig Med.* 2021 Feb;69(2):523. Abstract no. 264.

Chinchilla Putzeys CI, Thai L, Gremse D. The inflammatory bowel disease conundrum: establishing a definitive diagnosis in cases with overlapping features. *J Investig Med*. 2021 Feb;69(2):523-524. Abstract no. 265.

Chinchilla Putzeys CI, Batra M, Maertens P, Sharma KP. Progressive respiratory failure due to anterior spinal cord infarction in an adolescent boy. *J Investig Med*. 2021 Feb;69(2):606. Abstract no. 476.

Freeman A, Dolma K, Rezonzew G, Halloran B, Quio L, Tipple TE, Lal CV. Pulmonary microbial dysbiosis leads to redox imbalance through the Nrf2 pathway in neonatal murine models. *J Investig Med*. 2021 Feb;69(2):455-456. Abstract no. 96.

Gayoso M, Lim WY, Mulekar M, Kaulfers AD. Role of exchange transfusion in a pediatric patient with sickle cell disease, acute chest syndrome and COVID-19. *J Investig Med*. 2021 Feb;69(2):571. Abstract no. 384.

Gonzalez Jr JC, Stoll A, Mobley M, Sharma K, Vidal R. Developing age-specific PICU alarm parameters to improve the accuracy of provider orders. *Pediatrics*. 2021 Mar 1;147(3 MeetingAbstract):428-429.

Jafar B, Reno A, Bhat R, Alemayehu H, Zayek M. Rare thoracoabdominal anomalies in a neonate with 22q11.2 microdeletion. *J Investig Med*. 2021 Feb;69(2):601. Abstract no. 462.

Jafar B, Sharma KP, Maertens P. A new family of x-linked alpha thalassemia mental retardation syndrome has features mimicking Smith-Lemli-Opitz syndrome. *J Investig Med*. 2021 Feb;69(2):607. Abstract no. 478.

Jafar B, Sheikh A, Sharma KP, Maertens P. The novel use of a synthetic amino acid analog in the management of Menke's disease. *J Investig Med*. 2021 Feb;69(2):453-454. Abstract no. 91.

Keshavamurthy PRS, Sehgal M, Talamas N, Gardner C, Martinez P, Meyer K, Totapally B. Performance of various predictive equations compared to indirect calorimetry in ventilated children. *Crit Care Med*. 2021 Jan;49(1 Suppl):28. Abstract no. 54.

Lavu R, Maertens P, Zayek M, Bhat R. Transcranial Doppler flow assessment for early prediction of brain injury in asphyxiated neonates receiving therapeutic hypothermia. *J Investig Med*. 2021 Feb;69(2):452. Abstract no. 87.

Leon Paredes S, Chinchilla Putzeys CI, Roca Garcia MR. A case of eosinophilic colitis and CMV positive Menetrier disease. *J Investig Med*. 2021 Feb;69(2):529. Abstract no. 278.

McKnight K, Singhapakdi K, Sharma KP, Gavrilita C. Large tricuspid vegetation in a healthy ten-year-old male. *J Investig Med*. 2021 Feb;69(2):508-509. Abstract no. 227.

Manjunath C, Galliani C, Crissinger K, Eyal F. Eosinophilic myenteric ganglionitis presenting as neonatal Hirschsprung's disease: a case report. J Investig Med. 2021 Feb;69(2):602. Abstract 465.

Manjunath C, Liu S, Mancini E, Bhat R, Dolma K. Myocardial infarction in neonates with perinatal asphyxia. J Investig Med. 2021 Feb;69(2):418-419. Abstract 8.

Manjunath C, Sanchez O. Paroxysmal supraventricular tachycardia in seronegative Kawasaki disease like multi-system inflammatory syndrome in children. J Investig Med. 2021 Feb;69(2):507-508. Abstract no. 225.

Manjunath C, Thai L, Anderson S, Polski J, Roca Garcia MR, Tengsupakul S. Kikuchi - Fujimoto disease: atypical presentation with fever of unknown origin and abdominal lymphadenopathy. J Investig Med. 2021 Feb;69(2):623. Abstract no. 518.

Pedisetty D, Amritphale N, Tengsupakul S. Acute polyarthritis secondary to enterovirus in a pediatric patient. J Investig Med. 2021 Feb;69(2):590. Abstract no. 434.

Pendley J, Chung A, Le T, Gavrilita C. Melatonin use in the pediatric intensive care unit. 2020 American College of Clinical Pharmacy Annual Meeting; 2020 Oct 19-30; Washington DC. Abstract no. 441. Available from: <https://accp.confex.com/accp/2020am/meetingapp.cgi/Paper/56105>

Ramakrishnan R, Ilonze C, Gosling S. Iron deficiency anemia and rickets presenting in breastfed twins. J Investig Med. 2021 Feb;69(2):631. Abstract no. 538.

Ramakrishnan R, Murray C, Roca Garcia MR. Teenager with history of vaping diagnosed with e-cigarette or vaping product use-associated lung injury (EVALI). J Investig Med. 2021 Feb;69(2):471. Abstract no. 134.

Reno A, Sanchez O, Marri P, Imran H, Ilonze C. Role of exchange transfusion in a pediatric patient with sickle cell disease, acute chest syndrome and COVID-19. J Investig Med. 2021 Feb;69(2):571. Abstract no. 384.

Sehgal M, Custodio H, Amritphale N, Davis N, Vidal R, Amritphale A. Demographics characteristics and risk factors for 30-day unplanned pediatric sepsis readmissions. Crit Care Med. 2021 Jan;49(1 Suppl):609. Abstract no. 1212.

Sheikh A, Rawhani R, Roca Garcia MR. Atypical Kawasaki disease presenting with acute ataxia. J Investig Med. 2021 Feb;69(2):633. Abstract no. 543.

Singhapakdi K, Gonzalez J, Bhat R, Maertens P. Twins with congenital lymphocytic choriomeningitis virus induced neuroteratogenic encephalopathy. J Investig Med. 2021 Feb;69(2):610. Abstract no. 486.

### **III. PUBLISHED BOOKS**

#### IV. INVITED PRESENTATIONS

Batten L. Invited speaker. Those who say it can't be done are usually interrupted by others doing it [virtual presentation]. Council on Medical Student Education in Pediatrics (COMSEP) Pre-Conference Workshop; 2021 Apr 6; McLean, VA.

Custodio H. Invited speaker. Sickle cell disease and COVID [virtual presentation]. Sickle Cell Disease Practical Issues XVIII, 2021 Sickle Cell Regional Conference; 2021 May 15; Mobile, AL.

Gremse D. Invited speaker. What to do when baby has a BRUE. University of Nevada Reno School of Medicine Pediatric Grand Rounds; 2021 Feb 10; Reno, NV.

Imran H. Invited speaker. Pathophysiology and management of sickle cell disease in children [virtual presentation]. Sickle Cell Disease Association of America-Mobile Chapter, Inc. Spring 2021 Sickle Cell Counselor Educator Certification Training Program; 2021 Apr 27; Mobile, AL.

Marri P. Invited speaker. Pathophysiology and management of thalassemia and other hemoglobinopathies in children [virtual presentation]. Sickle Cell Disease Association of America-Mobile Chapter, Inc. Spring 2021 Sickle Cell Counselor Educator Certification Training Program; 2021 Apr 29; Mobile, AL.

Preud'Homme D. Invited speaker. Obesity management [virtual presentation]. Franklin Primary Health Care; 2021 Apr 28; Mobile, AL.

Ponnambalam A. Invited speaker. Eosinophilic esophagitis in children [virtual presentation]. University of South Alabama Med School Café; 2021 Jun 21; Mobile, AL.

Roberson-Trammell K. Invited speaker. Collaborative school nurse-pediatrician approach: Improving communication between pediatricians and school nurses and addressing adolescent health [virtual presentation]. Alabama Chapter of the American Academy of Pediatrics; 2021 Jan 29; Montgomery, AL.

Roberson-Trammell K. Invited speaker. Alabama Coordinated Health Network (ACHN): improving health outcomes for Medicaid recipients thru care coordination and quality improvement performance measures [virtual presentation]. Alabama Medicaid Primary Care Providers Medical Management Meeting - Southwest Region; 2020 Nov 12; Montgomery, AL.

Roberson-Trammell K. Invited speaker. Alabama Coordinated Health Network (ACHN): improving health outcomes for Medicaid recipients thru care coordination and quality improvement performance measures [virtual presentation]. Alabama Medicaid Primary Care Providers Medical Management Meeting - Southwest Region; 2020 Dec 10; Montgomery, AL.

Roberson-Trammell K. Invited speaker. Alabama Coordinated Health Network (ACHN): improving health outcomes for Medicaid recipients thru care coordination and quality improvement performance measures [virtual presentation]. Alabama Medicaid Primary Care Providers Medical Management Meeting - Southwest Region; 2021 Feb 25; Montgomery, AL.

Roberson-Trammell K. Invited speaker. Alabama Coordinated Health Network (ACHN): improving health outcomes for Medicaid recipients thru care coordination and quality improvement performance measures [virtual presentation]. Alabama Medicaid Primary Care Providers Medical Management Meeting - Southwest Region; 2021 Mar 18; Montgomery, AL.

Roberson-Trammell K. Invited speaker. Alabama Coordinated Health Network (ACHN): improving health outcomes for Medicaid recipients thru care coordination and quality improvement performance measures [virtual presentation]. Alabama Medicaid Primary Care Providers Medical Management Meeting - Southwest Region; 2021 Jun 17; Montgomery, AL.

Roberson-Trammell K. Invited speaker. Alabama Coordinated Health Network (ACHN): improving health outcomes for Medicaid recipients thru care coordination and quality improvement performance measures [virtual presentation]. Alabama Medicaid Primary Care Providers Medical Management Meeting - Southwest Region; 2021 Jun 18; Montgomery, AL.

Roberson-Trammell K. Invited speaker. Alabama Coordinated Health Network (ACHN): improving health outcomes for Medicaid recipients thru care coordination and quality improvement performance measures [virtual presentation]. Alabama Medicaid Primary Care Providers Medical Management Meeting - Southwest Region; 2021 Jun 24; Montgomery, AL.

Wilson F. Invited speaker. A medical expert's perspectives on a treatment in sickle cell disease [virtual presentation]. Novartis Pharmaceuticals, Inc.; 2020 Dec 10; Cambridge, MA.

Wilson F. Invited speaker. Evolving treatment paradigms in sickle cell disease: what the primary care provider should know. Alabama Chapter of the American Academy of Pediatrics Annual Spring Meeting; 2021 Apr 23; Destin, FL.

Wilson F. Invited speaker. Newborn screening [virtual presentation]. Sickle Cell Disease Association of America-Mobile Chapter, Inc. Spring 2021 Sickle Cell Counselor Educator Certification Training Program; 2021 Apr 27; Mobile, AL.

## **V. NATIONAL PROFESSIONAL RECOGNITION**

Nupur Amritphale: Fellow, American Academy of Pediatrics; Member, American Academy of Pediatrics, Alabama Chapter. Assistant Clerkship Director, Mobile Representative for Child Death Review. Reviewer; *Pediatrics, Iranian Journal of Neonatology*.

Stephanie Anderson: Member, American Academy of Pediatrics, Council on Children with Disabilities & Section on Developmental and Behavioral Pediatrics; Member, Society for Developmental and Behavioral Pediatrics, Education Committee; Member, Alabama Interagency Autism Coordinating Council (AIACC) Standards of Practice Committee, Diagnostics and Health Work Group.

Lynn Batten: Member, Alpha Omega Alpha Medical Honor Society; Fellow, American College of Cardiology; Fellow, American Academy of Pediatrics; Member, American Heart Association; Member, Council on Medical Student Education in Pediatrics (COMSEP); Reviewer: *MedEd Portal*.

Ramachandra Bhat: Member, American Academy of Pediatrics; Member, Southern Society of Pediatric Research; Member, American Medical Association. Reviewer: *American Journal of Perinatology, Pediatric Quality and Safety and Abstract reviewer for Pediatric Academic Societies Meeting 2019*.

Samar Bhowmick: Fellow, American Academy of Pediatrics; Member, American Association of Clinical Endocrinologists; Fellow, American College of Endocrinology; Member, American Diabetes Association; Member, The Endocrine Society; Member, The Lawson Wilkins Pediatric Endocrine Society. Reviewer: *Pediatrics, Clinical Pediatrics, Journal of Southern Medical Association, Asian Journal of Andrology*.

Kari Bradham: Member, American Academy of Pediatrics; Alabama Early Hearing Detection; Intervention Champion; Member, Children with Medical Complexity Collaborative Improvement and Innovation Network (CMC CoIIN)

Jennifer Cole: Fellow, American Academy of Pediatrics; Member, American Academy of Pediatrics, Alabama Chapter; Member, Medical Association of the State of Alabama.

LaDonna Crews: Member, Academy of Breastfeeding Medicine; Member, Academic Pediatric Association; Fellow, American Academy of Pediatrics; Board, American Academy of Pediatrics, Alabama Chapter; Member, American Medical Association; Member, Medical Association of the State of Alabama; Member, Mobile Pediatric Society; Member, Regional Perinatal Advisory Committee; Member, Society for Adolescent Medicine; Member, Children with Medical Complexity Collaborative Improvement and Innovation Network (CMC CoIIN)

Karen Crissinger: Member, American Academy of Pediatrics; Member, American Gastroenterological Association; Member, North American Society for Pediatric Gastroenterology, Hepatology, & Nutrition; Member, Society for Pediatric Research; Member, Southern Society for Pediatric Research. Reviewer: *Journal of Pediatric Gastroenterology & Nutrition*.

Haidee Custodio: Fellow, American Academy of Pediatrics; CME Chair, Alabama Chapter, American Academy of Pediatrics; Member, Infectious Diseases Society of America; Member, Pediatric Infectious Diseases Society; Member, Association of Pediatric Program Directors. Reviewer: *Pediatric Academic Societies Meeting, Academic Medicine, Clinical Pediatrics, Global Pediatric Health, MedEd Portal*.

Nita Davis: Fellow, American Academy of Pediatrics; Member, Mobile Pediatric Society.

Kalsang Dolma: Fellow, American Academy of Pediatrics (AAP); Member, American Medical Association (AMA); Member, Trainees and Early Career Neonatologist (TECaN); Member, Vermont Oxford Network Data Base; Member, Indian Academy of Pediatrics; Member, American Thoracic Society (ATS)

Benjamin Estrada: Member, Alpha Omega Alpha Medical Honor Society; Fellow, American Academy of Pediatrics (AAP); Member, Association of American Medical Colleges (AAMC); Member, Gold Humanism Honor Society; Member, Infectious Diseases Society of America (IDSA); Fellow, Pediatric Infectious Diseases Society (PIDS); Member, Society for Healthcare Epidemiology of America (SHEA); Institutional Representative, Southern Society for Pediatric Research (SSPR); Member, South Bell Conference COVID-19 committee; Member, Team-Based Learning Collaborative. Reviewer: *Infectious Diseases in Clinical Practice*.

Fabien Eyal: Member, Alabama Committee on the Fetus and Newborn; Member, Alabama Society of Neonatology; Member, Alpha Omega Alpha Medical Honor Society; Member, American Academy of Pediatrics, Member, American Medical Association; Clinical Champion, Coordinator of Neonatal Monitoring, Office of Rural Health; Member, Southern Society for Pediatric Research; Member, Southeastern Association of Neonatologists; Member, Vermont Oxford National Data Base.

Sheryl Falkos: Member, Advisory Board, Penelope House Domestic Violence Shelter; Fellow, American Academy of Pediatrics; Member, Critical Care Section, Society of Critical Care Medicine.

Cristina Gavrilita: Fellow, American Academy of Pediatrics; Member, Board of Directors, Ronald McDonald House; Member, Society of Critical Care Medicine; President, Mobile Pediatric Society.

Sophia Goslings: Member American Academy of Pediatrics, AAP Section on Hospital Medicine; Member, Association of Pediatric Program Directors; Member, Mobile Pediatric Society; Workshop Co-Leader: Beyond Tell Me About Yourself – Using Multiple Mini Interviews to Overcome Interview and Selection Challenges; ACGME Annual Education Conference; Workshop Co-Leader: Changing Resident Assessment Experiences Implementing the Pediatric Milestones Assessment Collaborative.

David Gremse: Executive Board, American Academy of Pediatrics, Alabama Chapter;

Member, American Board of Pediatrics (ABP); Medical Editor, ABP Subboard of Pediatric Gastroenterology Exam Committee; Member, ABP Long-Term Investment Committee; Member, ABP Credentials Committee; Fellow of the American College of Gastroenterology; Member, ACG Pediatric Gastroenterology Committee; Member, American Gastroenterological Association; Member, American Medical Association; Member, American Pediatric Society; Member, Association of Medical School Pediatric Department Chairs (AMSPDC); President, Gulf Coast Total Care; Member, Mobile Pediatric Society; Member, North American Society of Pediatric Gastroenterology, Hepatology, and Nutrition (NASPGHAN); Member, Society for Pediatric Research; Member, The Gold Humanism Honor Society; Member, Alpha Omega Alpha Medical Honor Society; Editorial Board, *Pediatric Drugs*; Reviewer: *Pediatric Drugs*; *Digestive Diseases and Sciences*; *Pediatrics*; *Journal of Pediatric Gastroenterology and Nutrition*, *Clinical Pediatrics*

Rashmi Gulati: Fellow, American Academy of Pediatrics; Member, American Medical Association; Member: QI/Research subcommittee TECaN; Member: Indian Academy of Pediatrics; Member, Vermont Oxford National Data Base; Member, Society for Pediatric Research; Member: Regional perinatal advisory council and State perinatal advisory council, Alabama department of public health .Abstract Reviewer: *2019 Eastern Society of Pediatrics Research Meeting*. Reviewer: *Journal of Neonatology and Clinical Pediatrics*, *PLOS ONE*, *BMC pediatrics*

Charles Miles Harmon: Fellow, American Academy of Pediatrics; Member, American Academy of Pediatrics Section on Perinatal Pediatrics; Member, Palliative Care Research Cooperative Group; Member, Society for Pediatric Research; Member, Vermont Oxford National Data Base.

Linda Hassouneh: Member, American Academy of Pediatrics, Pediatric Infectious Diseases Society, Infectious Diseases Society of America

Chibuzo Ilonze: Fellow, American Academy of Pediatrics; Member, American Society of Pediatric Hematology-Oncology; Member, Children's Oncology Group (COG); Member, American Society of Hematology (ASH); Member, American Society of Clinical Oncology (ASCO).

Hamayun Imran: Fellow, American Academy of Pediatrics; Member, American Society of Hematology; Member, American Society of Pediatric Hematology-Oncology; Member and Local Principal Investigator, Children's Oncology Group; Speakers Bureau, Octapharma Pharmaceuticals.

Anne-Marie Kaulfers: Fellow, American Academy of Pediatrics; Member, American Diabetes Association; Member, The Endocrine Society; Member, The Medical Association of the State of Alabama; Member, The Lawson Wilkins Pediatric Endocrine Society; Board, Southeastern Diabetes Education Services (SDES). Reviewer: *Clinical Pediatrics*.



Whei Ying Lim: Member, Alpha Omega Alpha Medical Honor Society; Fellow, American Academy of Pediatrics (AAP); Member, The Endocrine Society; Member, The Lawson Wilkins Pediatric Endocrine Society.

Myria Mack-Williams: Fellow, American Academy of Pediatrics; Member, Mobile Pediatric Society; Member, Association of Pediatric Program Directors.

Preethi Marri: Fellow, American Academy of Pediatrics, Member Section on Hematology/Oncology; Member, Alabama Chapter, American Academy of Pediatrics, Member, American Society of Pediatric Hematology-Oncology; Member, American Society of Clinical Oncology; Member and Co-PI, Children's Oncology Group.

Brandy Merritt: Member, American Academy of Pediatrics; Member, Mobile Pediatric Society; Member, Society of Critical Care Medicine.

Athira Nair: Member, American College of Cardiology; Fellow, American Academy of Pediatrics; Member, American Society for Echocardiogram.

Karen Parsell: American Academy of Pediatrics, Medical Society of Mobile County, Medical Association of the State of Alabama and Mobile Pediatric Society.

Keith Peevy: Member, Alabama Baby Coalition Task Force; Member, Alabama Society of Neonatology; Member, Alabama State Medical Society; Member, Alpha Omega Alpha Medical Honor Society; Member, American Medical Association; Affiliate Member, European Society for Pediatric Research; Member, Medical Society of Mobile County; Member, Medical Association of the State of Alabama (MASA); Member, Southern Society for Pediatric Research; Member, Southeastern Association of Neonatologists, Inc.; Member, Southern District of Alabama Human Trafficking Task Force Committee.

Melody Petty: Member, American Academy of Pediatrics, Member, Alabama Chapter, American Academy of Pediatrics; Member, Advancing Pediatric Educator Excellence (APEX) Teaching Program 2020 Educator Class, Member Section on Pediatric Hospital Medicine, American Academy of Pediatrics

Anand Ponnambalam: Fellow of the American Academy of Pediatrics (FAAP); Member, American College of Gastroenterology (ACG); Member, American Gastroenterological Association (AGA); Member, North American Society for Pediatric Gastroenterology Hepatology and Nutrition (NASPGHAN); Member, Professional Educational Committee, North American Society for Pediatric Gastroenterology Hepatology and Nutrition (NASPGHAN).

Daniel Preud'Homme: Member, Quality Improvement Coach and Faculty, Alabama Child Health Initiative Alliance (ACHIA); Fellow, American Academy of Pediatrics; Reviewer: *Clinical Pediatrics*.

Katrina Roberson-Trammell: Fellow, American Academy of Pediatrics; Board, Gulf

Regional Early Childhood Services (GRECS); Member, Medicaid Quality Assurance Committee; Member, Medical Association of State of Alabama; Member, Mobile Bay Area Medical Association; Member, Mobile Medical Society; Member, Mobile Pediatric Society; Medical Director, Gulf Coast Total Care; Member, Pediatric and Adult Workgroup, Regional Care Organization-Region E; Member, Children with Medical Complexity Collaborative Improvement and Innovation Network (CMC CoIIN)

Renee Roca-Garcia: Member, American Academy of Pediatrics, Pediatrics Section on Hospital Medicine; Member, College of Surgeons and Physicians of Guatemala; Member, Mobile Pediatric Society.

Omar Sanchez: Member, American Academy of Pediatrics, AAP Section on Critical Care; Member, College of Surgeons and Physicians of Guatemala; Member, Mobile Medical Society; Member, Pediatric Society of Critical Care Medicine; Member, Society of Critical Care Medicine; Member, Mobile Pediatric Society.

Mukul Sehgal: Member, Sigma Xi research honor society; Member, Society of Pediatric Research (SPR); Member, American Academy of Pediatrics; Member, Society of Critical Care Medicine; Reviewer: PedsCCM.org, Reviewer: Society of Critical Care Medicine Congress (SCCM), Reviewer: Pediatric Academic Society (PAS), Reviewer: Journal of Medical Internet Research (JMIR)

Kamal Sharma: Fellow, American Academy of Pediatrics; Member, Society of Critical Care Medicine; Permanent Member, Nepal Medical Association; President, Mobile Pediatric Society; Member, American Thoracic Society; Abstract reviewer: *SCCM Congress 2020*.

Supatida Tengsupakul: Member, American Academy of Pediatrics; Member, Pediatric Infectious Diseases Society; Member, Section on Hospital Medicine, American Academy of Pediatrics; Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health (CTropMed<sup>®</sup>).

Rosa Vidal: Member, Section on Critical Care, American Academy of Pediatrics; Member, Mobile Pediatric Society; Member, Society of Critical Care Medicine; Member, Pediatric Society of Critical Care Medicine.

Richard Whitehurst: Member, Alabama Physicians Wellness Committee; Member, Alabama Society of Neonatology; Member, American Academy of Pediatrics; Member, American Medical Association; Member, Medical Association of the State of Alabama (MASA); Member, Medical Society of Mobile County; Member, Southeastern Association of Neonatologists, Inc.; Member, Southern Society for Pediatric Research.

Felicia Wilson: Member, Prevention, Early Detection Subcommittee; Alabama Comprehensive Cancer Control Coalition; Fellow, American Academy of Pediatrics, Member Section on Hematology/Oncology; Member, American Society of Hematology; Board Member, Camp Rap-A-Hope; Member, Medical Association of the State of Alabama; Member, Mobile Pediatric Society; Speaker's Bureau, Novartis Pharmaceuticals

Corporation; Laboratory Medical Director, Sickle Cell Disease Association of America, Mobile Chapter; Member, Southern Society for Pediatric Research; Co-Chair, Hemoglobinopathy Subcommittee, State of Alabama Newborn Screening Advisory Committee; Member, Alabama Sickle Cell Oversight and Regulatory Commission; President, Aubreigh's Army Foundation 328 Board of Directors; Member, Children's Oncology Group.

Michael Zayek: Member, Alabama Society of Neonatology; Member, American Academy of Pediatrics (AAP); Member, Southeastern Association of Neonatologists, Inc.; Member, Southern Society for Pediatric Research (SSPR).

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The Department of Pediatrics was delighted to welcome new faculty members. Drs. Nair, Parsell and Hassouneh.

Dr. Nair joined the faculty as Assistant Professor of Pediatrics in the Division of Pediatric Cardiology in December 2020 after moving from her position as Assistant Clinical Professor of Pediatrics at the University of California San Francisco, Fresno Campus. Dr. Nair received her medical degree from the Amrita Institute of Medical Sciences and Research in India, followed by a pediatric internship at Richmond University Medical Center in Staten Island, NY and completion of her pediatric residency training at the University of Florida Shands Children's Hospital in Gainesville, FL, followed by a Pediatric Cardiology fellowship at the Hershey Medical Center in Hershey, PA.

Dr. Parsell joined the faculty as Assistant Professor of Pediatrics in the Division of Pediatric Hospital Medicine. Dr. Parsell is an alumna of the University of South Alabama College of Medicine and also completed her pediatric residency training at the University of South Alabama. She was an attending in the Children's Evaluation Center at USA Children's and Women's Hospital and served as a Pediatric Hospitalist at Thomas Hospital prior to joining the full time faculty.

Dr. Hassouneh joined the faculty as Assistant Professor of Pediatrics in the Divisions of Pediatric Infectious Disease and Pediatric Hospital Medicine in 2020 after completing her fellowship in Pediatric Infectious Disease at the Alpert Medical School of Brown University in Providence, RI. Dr. Hassouneh received her medical degree from Jordan University of Science and Technology in Irbid, Jordan. After completing her Pediatric Residency at Saint Vincent de Paul French Hospital in Nazareth, Israel, she began her Pediatric Infectious Disease fellowship training at UT Southwestern Medical School in Dallas, TX prior to moving to Brown University.

The Department of Pediatrics recognized two leaders in the Department for their dedicated service throughout their careers, as Dr. Karen Crissinger retired as Director of the Division of Pediatric Gastroenterology, Hepatology, and Nutrition, and Dr. Samar Bhowmick retired after many years of service as Director of the Division of Pediatric Endocrinology.

Drs. Lynn Batten, LaDonna Crews, Benjamin Estrada, and Anna Foust were recognized by the USACOM Class of 2021 as Distinguished Faculty at the Honors Convocation. The twenty-fourth recipient of the Hollis J. Wiseman Award for Excellence in Pediatrics during the Pediatric Clerkship for the Class of 2021 was Tina Etminan. Three of the graduating medical students in the USACOM Class of 2021 chose residencies in Pediatrics or combined Medicine-Pediatrics.

Of the pediatric housestaff completing residency training in 2021, six entered private practice, six entered into fellowship training, and two remained in the department as Pediatric Chief Residents. The two graduating Medicine-Pediatrics residents entered private practice. Twelve new first year residents entered the pediatric residency program, and two first-year residents entered the combined Medicine-Pediatrics Residency Program.

Drs. Hannah Bahakel and Lauren Thai completed their terms as Pediatric Chief Residents and Drs. J. C. Gonzalez and Dr. Aishah Najam took over duties as the Pediatric Chief Residents for the 2021-2022 academic year.

The scholarly activities by the faculty of the Department of Pediatrics this year included 16 original articles, and 28 published abstracts. Departmental faculty were active in mentoring pediatric residents in clinical research. There were 27 abstracts presented at regional and national meetings by pediatric residents who were the first authors with senior authorship by members of the pediatric faculty.

The Department of Pediatrics welcomed new leadership in its undergraduate and graduate medical education programs. Dr. Richard Whitehurst completed his first full year as Pediatric Residency Program Director and Dr. Lynn Batten took over as Pediatric Clerkship Director.

The USA Department of Pediatrics celebrates the launch of a new pediatric bariatric surgery program. Dr. Katrina Weaver, Pediatric Surgeon who heads the Bariatric Surgery program at USA Children's and Women's Hospital and Dr. Daniel Preud'Homme, Director of the Pediatric Healthy Life Center Clinic at USA Health, have teamed up to offer a new treatment option for adolescents with morbid obesity. Pediatric bariatric surgery is now offered at USA Children's and Women's Hospital for adolescents with morbid obesity in whom medically supervised weight loss attempts were unsuccessful and have been compliant and meet medical and psychologic criteria. The USA Department of Pediatrics congratulates Drs. Weaver and Preud'Homme for their leadership in providing the availability of this treatment new to our region for adolescents who are seeking another option for weight loss management.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Pharmacology**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Borchert GM, Xi Y. Welcome to a new journal—Journal of Gene Regulation. *Journal of Gene Regulation*. 2021 Jun 18;1-2.

Browning CM, Deal J, Mayes S, Arshad A, Rich TC, Leavesley SJ. Excitation-scanning hyperspectral video endoscopy: enhancing the light at the end of the tunnel. *Biomed Opt Express*. 2020 Dec 10;12(1):247-271.

Browning CM, Deal J, Mayes SG, Parker M, Rich TC, Leavesley SJ. Optical simulations for determining efficacy of new light source designs for excitation-scanning high-speed hyperspectral imaging systems. *Proc SPIE Int Soc Opt Eng*. 2020 Feb;11216:112160W.

Deal J, Annamdevula N, Pleshinger DJ, Griswold JR, Odom A, Tayara A, Lall M, Browning C, Parker M, Rich TC, Leavesley SJ. Comparison of spectral FRET microscopy approaches for single-cell analysis. *Proc SPIE Int Soc Opt Eng*. 2020 Feb;11243:112430Y.

Devadoss D, Daly G, Manevski M, Houserova D, Hussain SS, Baumlin N, Salathe M, Borchert GM, Langley RJ, Chand HS. A long noncoding RNA antisense to ICAM-1 is involved in allergic asthma associated hyperreactive response of airway epithelial cells. *Mucosal Immunol*. 2021 May;14(3):630-639.

Ge J, Ngo LP, Kaushal S, Tay IJ, Thadhani E, Kay JE, Mazzucato P, Chow DN, Fessler JL, Weingeist DM, Sobol RW, Samson LD, Floyd SR, Engelward BP. CometChip enables parallel analysis of multiple DNA repair activities. *DNA Repair (Amst)*. 2021 Jul 10;106:103176.

Grevengoed TJ, Trammell SA, Svenningsen JS, Makarov MV, Nielsen TS, Jacobsen JCB, Treebak JT, Calder PC, Migaud ME, Cravatt BF, Gillum MP. An abundant biliary metabolite derived from dietary omega-3 polyunsaturated fatty acids regulates triglycerides. *J Clin Invest*. 2021 Mar 15;131(6):e143861.

Hayat F, Sonavane M, Makarov MV, Trammell SAJ, McPherson P, Gassman NR, Migaud ME. The biochemical pathways of nicotinamide-derived pyridones. *Int J Mol Sci*. 2021 Jan 24;22(3):1145.

Hoang SM, Kaminski N, Bhargava R, Barroso-González J, Lynskey ML, García-Expósito L, Roncaioli JL, Wondisford AR, Wallace CT, Watkins SC, James DI, Waddell ID, Ogilvie D, Smith KM, da Veiga Leprevost F, Mellacharevu D, Nesvizhskii AI, Li J, Ray-Gallet D, Sobol RW, Almouzni G, O'Sullivan RJ. Regulation of ALT-associated homology-directed repair by polyADP-ribosylation. *Nat Struct Mol Biol*. 2020 Dec;27(12):1152-1164.

Houserova D, Dahmer DJ, Amin SV, King VM, Barnhill EC, Zambrano ME, Dean MA, Crucello A, Aria KM, Spector MP, Borchert GM. Characterization of 475 novel, putative small RNAs (sRNAs) in carbon-starved *Salmonella enterica* serovar typhimurium. *Antibiotics* (Basel). 2021 Mar 16;10(3):305.

Huang F, Leng X, Kasukurthi MV, Huang Y, Li D, Tan S, Lu G, Lu J, Benton RG, Borchert GM, Huang J. Utilizing machine learning techniques to predict the efficacy of aerobic exercise intervention on young hypertensive patients based on cardiopulmonary exercise testing. *J Healthc Eng*. 2021 Apr 21;2021:6633832.

Johnston C, Hardacre C, Migaud ME. Investigations into the synthesis of a nucleotide dimer via mechanochemical phosphoramidite chemistry. *R Soc Open Sci*. 2021 Mar 31;8(3):201703.

Kropotov A, Kulikova V, Nerinovski K, Yakimov A, Svetlova M, Solovjeva L, Sudnitsyna J, Migaud ME, Khodorkovskiy M, Ziegler M, Nikiforov A. Equilibrative nucleoside transporters mediate the import of nicotinamide riboside and nicotinic acid riboside into human cells. *Int J Mol Sci*. 2021 Jan 30;22(3):1391.

Langley RJ, Migaud ME, Flores L, Thompson JW, Kean EA, Mostellar MM, Mowry M, Luckett P, Purcell LD, Lovato J, Gandotra S, Benton R, Files DC, Harrod KS, Gillespie MN, Morris PE. A metabolomic endotype of bioenergetic dysfunction predicts mortality in critically ill patients with acute respiratory failure. *Sci Rep*. 2021 May 18;11(1):10515.

Lee JY, Stevens RP, Migaud M, Stevens T. Salvaging the endothelium in acute respiratory distress syndrome: a druggable intersection between TLR4 and NAD<sup>+</sup> signalling. *Eur Respir J*. 2021 May 6;57(5):2004588.

Li J, Zhang Z, Li S, Benton R, Huang Y, Kasukurthi MV, Li D, Lin J, Borchert GM, Tan S, Li G, Ma B, Yang M, Huang J. A partial encryption algorithm for medical images based on quick response code and reversible data hiding technology. *BMC Med Inform Decis Mak*. 2020 Dec 15;20(Suppl 14):297.

Luongo TS, Eller JM, Lu MJ, Niere M, Raith F, Perry C, Bornstein MR, Oliphint P, Wang L, McReynolds MR, Migaud ME, Rabinowitz JD, Johnson FB, Johnson K, Ziegler M, Cambronne XA, Baur JA. SLC25A51 is a mammalian mitochondrial NAD<sup>+</sup> transporter. *Nature*. 2020 Dec;588(7836):174-179.

Ma B, Wu Z, Li S, Benton R, Li D, Huang Y, Kasukurthi MV, Lin J, Borchert GM, Tan S, Li G, Yang M, Huang J. Development of a support vector machine learning and smart phone internet of things-based architecture for real-time sleep apnea diagnosis. *BMC Med Inform Decis Mak*. 2020 Dec 15;20(Suppl 14):298.

Makarov MV, Hayat F, Graves B, Sonavane M, Salter EA, Wierzbicki A, Gassman NR, Migaud ME. Chemical and biochemical reactivity of the reduced forms of nicotinamide riboside. *ACS Chem Biol*. 2021 Apr 16;16(4):604-614.

Mehta R, Sonavane M, Migaud ME, Gassman NR. Exogenous exposure to dihydroxyacetone mimics high fructose induced oxidative stress and mitochondrial dysfunction. *Environ Mol Mutagen*. 2021 Mar;62(3):185-202.

Migaud M, Gandotra S, Chand HS, Gillespie MN, Thannickal VJ, Langley RJ. Metabolomics to predict antiviral drug efficacy in COVID-19. *Am J Respir Cell Mol Biol*. 2020 Sep;63(3):396-398.

Rayner JO, Kim JH, Roberts RW, Wood RR, Fouty B, Solodushko V. Evaluation of DNA-launched virus-like particle vaccines in an immune competent mouse model of chikungunya virus infection. *Vaccines (Basel)*. 2021 Apr 2;9(4):345.

Sonavane M, Hayat F, Makarov M, Migaud ME, Gassman NR. Dihydronicotinamide riboside promotes cell-specific cytotoxicity by tipping the balance between metabolic regulation and oxidative stress. *PLoS One*. 2020 Nov 9;15(11):e0242174.

Strømmland Ø, Kallio JP, Pschibul A, Skoge RH, Harðardóttir HM, Sverkeli LJ, Heinekamp T, Kniemeyer O, Migaud M, Makarov MV, Gossmann TI, Brakhage AA, Ziegler M. Discovery of fungal surface NADases predominantly present in pathogenic species. *Nat Commun*. 2021 Mar 12;12(1):1631. Erratum in: *Nat Commun*. 2021 Mar 25;12(1):2004.

Sverkeli LJ, Hayat F, Migaud ME, Ziegler M. Enzymatic and chemical syntheses of vacor analogs of nicotinamide riboside, NMN and NAD. *Biomolecules*. 2021 Jul 16;11(7):1044.

Thompson MK, Sobol RW, Prakash A. Exploiting DNA endonucleases to advance mechanisms of DNA repair. *Biology (Basel)*. 2021 Jun 14;10(6):530.

## II. PUBLISHED ABSTRACTS

Aziz T, Rachek L, Knighten J, Andrews J, Pleshinger DJ, Francis C. 8-oxoguanine glycosylase (OGG1) is a determinant of endothelial dysfunction via calcium and nitric oxide signaling. *FASEB J*. 2021 May 14;35(S1):02668. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096.fasebj.2021.35.S1.02668>

Browning CM, Parker M, Rich TC, Leavesley SJ. Illuminating the optical properties of an LED-based spectral light source for hyperspectral endoscopy. *Proc SPIE*, 11636, Optical Biopsy XIX: Toward Real-Time Spectroscopic Imaging and Diagnosis. 2021 Mar 5;1163608. doi: 10.1117/12.2583228 [Subscription required].

Coley A, Chen X, Maxuitenko Y, Mattox T, Ward A, Canzoneri J, Valiyaveetil J, Boyd M, Keeton A, Borchert G, Abdelkarim H, Gaponenko V, Piazza G. Biophysical, cellular, and *in silico* characterization of the pan-RAS inhibitor ADT 007. Third RAS Initiative Symposium; 2021 May 24-26; Bethesda, MD. Available from: [https://ncifrederick.cancer.gov/events/conferences/RasSymposium/Media/Documents/RA\\_S\\_Symposium\\_Program\\_2021.pdf](https://ncifrederick.cancer.gov/events/conferences/RasSymposium/Media/Documents/RA_S_Symposium_Program_2021.pdf)

Devadoss D, Acharya A, Manevski M, Pandey K, Mirsaeidi M, Nair M, Borchert GM, Byrareddy SN, Chand HS. Long noncoding RNAs of upper respiratory mucosa are associated with SARS-CoV-2 induced mucoinflammatory response. 2021 National Heart, Lung, and Blood Institute Long Non-coding (Lnc) RNAs Symposium; 2021 Mar 11-12; Bethesda, MD. p. 49. Abstract no. 22.

Devadoss D, Acharya A, Manevski M, Pandey K, Thurman M, Nair M, Borchert GM, Mirsaeidi M, Byrareddy SN, Chand HS. Severe COVID19 patients and a 3D airway tissue model of SARS-CoV-2 infection express high levels of airway mucins and associated immunomodulatory long noncoding RNAs. Am J Respir Crit Care Med. 2021;203:A4183. Available from: [https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1\\_MeetingAbstracts.A4183](https://www.atsjournals.org/doi/pdf/10.1164/ajrccm-conference.2021.203.1_MeetingAbstracts.A4183)

Kratz A, Kim M, Zheng F, Koczor CA, Fong S, Li J, Sobol RW, Krogan N, Ideker T. A multiscale map of DNA damage response in human cells. Cancer Res. 2021 Jul 1;81:(13 Suppl):2078. Abstract no. 2078.

Leavesley SJ, Annamdevula NA, Geurts A, Pleshinger DJ, Rich TC. Assessing drug-cell and drug-tissue interactions through spectral FRET imaging. Proc SPIE, 11624, Visualizing and Quantifying Drug Distribution in Tissue V. 2021 Mar 5;116240D. doi: 10.1117/12.2583228 [Subscription required].

Manevski M, Devadoss D, Long C, Orso N, Singh S, Langley RJ, Borchert GM, Sopori ML, Chand HS. The long noncoding transcript LASI modulates airway epithelial cell responses to tobacco smoke and associated chronic obstructive pulmonary disease. 2021 National Heart, Lung, and Blood Institute Long Non-coding (Lnc) RNAs Symposium; 2021 Mar 11-12; Bethesda, MD. p. 47. Abstract no. 21.

Manevski M, Devadoss D, Long C, Orso N, Singh S, Langley RJ, Borchert GM, Sopori ML, Chand HS. The novel long noncoding RNA transcript LASI is associated with smoke-induced inflammation and airway pathology of COPD patients. Am J Respir Crit Care Med. 2021;203:A4183. Available from: [https://www.atsjournals.org/doi/abs/10.1164/ajrccm-conference.2021.203.1\\_MeetingAbstracts.A4291](https://www.atsjournals.org/doi/abs/10.1164/ajrccm-conference.2021.203.1_MeetingAbstracts.A4291)

Yuzefovych L, Pastukh V, Rachek L. Elucidating protective mechanisms of targeting of hOGG1 to mitochondria on the HFD-induced insulin resistance in mice lacking OGG1. Diabetes. 2021 Jun;70(Suppl 1):1152-P. Abstract no. 1152-P.

### **III. PUBLISHED BOOKS**

### **IV. INVITED PRESENTATIONS**

Langley RJ. Invited speaker. Metabolomic endotypes of sepsis and acute respiratory failure predict acute and long-term outcomes. University of Alabama at Birmingham Pulmonary Grand Rounds; 2020 Oct 29; Birmingham, AL.



Rich TC. Invited speaker. Visualization of cAMP signals using hyperspectral imaging of FRET-based reporters [virtual presentation]. A Kinase Anchoring Protein 2020: 6th International Meeting on Anchored cAMP Signaling Pathways; 2020 Oct 8; Seattle, WA.

Sobol RW. Invited speaker. Poly(ADP-ribose)- and NAD<sup>+</sup>-driven temporal dynamics of base excision repair complex formation [virtual presentation]. Cold Spring Harbor Labs Conference on The PARP Family & ADP-ribosylation; 2020 Dec 11; Cold Spring Harbor, NY.

## V. NATIONAL PROFESSIONAL RECOGNITION

Abu-Bakr Al-Mehdi: Reviewer, USMLE Pharmacology Subject Exam. Member, NBME Test Material Development Committee, Pharmacology & Biochemistry for Step 1, Step 2CK, and Step 3.

Natalie N. Bauer: Standing Member, Respiratory Integrative Biology and Translational Research (RIBT) study section of NHLBI. Co-Chair, American Thoracic Society PhD Working Group. Co-Chair, American Thoracic Society Science and Innovation Center basic scientists' reception and breakout room discussion. Member, ATS Pulmonary Circulation Assembly Executive Committee. Reviewer, *Circulation*, *Scientific Reports*, *American Journal of Physiology Lung*, *Science Translational Medicine*, *Respiratory Research*, *Arteriosclerosis, Thrombosis, and Vascular Biology*, *Pulmonary Circulation*, *Cardiovascular Research*.

Glen M. Borchert: Grant Reviewer, NSF Graduate Research Fellowship Program, NIH COVID-19 Virtual Panel, NSF Genetic Mechanisms ad hoc Review Panel. Editor-in-Chief, *Journal of Gene Regulation*. Editorial Board Member, *PeerJ*. Reviewer, *International Journal of Molecular Sciences*, *RNA Biology*, *DNA Repair*, *Scientific Reports*, *Frontiers in Immunology*.

Qingming Fang: Grant Reviewer, NIH Cancer Etiology (CE) Study Section. Reviewer, *Nucleic Acids Research*, *Mutation Research*, *Life Sciences*, *Aging*, *Biomolecules*, *Cells*, *Journal of Neuro-Oncology*, *Cancer Drug Research*, *Libyan Journal of Medical Sciences*.

Mark N. Gillespie: Member, NIH Prevention and Early Treatment of Acute Lung Injury: Protocol Review Panel. Grant Reviewer, Center for Clinical and Translational Sciences. Member, American Thoracic Society Awards Committee. Co-Director and Executive Committee Member, University of Alabama at Birmingham Clinical and Translational Sciences Award (CTSA). Site Lead, UAB CTSA Sub-Award. Member, Alabama Rare Disease Advisory Council. Reviewer, *Nucleic Acids Research*, *American Journal of Physiology: Lung Cell and Molecular Physiology*, *Science Translational Medicine*.

Raymond J. Langley: Member, American Thoracic Society Critical Care Committee. Reviewer, *European Journal of Internal Medicine*, *Bioengineered*, *Genome Medicine*,

*Scientific Reports, European Respiratory Journal, Nutrients, iScience, Biomolecules, The FASEB Journal, Clinical Science, Future Drug Discovery, BMJ Open.*

Jianfeng Li: Editor, *Medicine, Journal of Vaccines, Immunology, and Immunopathology*. Reviewer, *Journal of Neuro-Oncology, DNA Repair, Life Sciences, PLoS ONE, Redox Biology, International Journal of Molecular Sciences*.

Marie E. Migaud: Chair, American Cancer Society local section. Editor, special issues of *MDPI, Cancer Drug Resistance, Frontiers*. Reporter, European Ares INTEGRATA Project. Committee Member, Small Business Innovation Research. Reviewer, *Cells, Journal of Organic Chemistry, Organic & Biomolecular Chemistry, MDPI*.

Lyudmila I. Rachek: Grant Reviewer, American Heart Association Fellowships Lipoproteins-Lipid Metabolism and Nutrition Study Section. Topic Editor, *Nutrients*. Reviewer, *Life, Cardiovascular Drugs and Therapy, Frontiers in Cell and Developmental Biology, Nutrients, Antioxidants, Cells, Molecular Genetics and Metabolism, International Journal of Molecular Sciences, Foods*.

Thomas C. Rich: Grant reviewer, NIH ZRG1 CBA (30) I PAR Panel, NSF Shared Instrumentation, NSF EpSCOR. Selected, Sally Steadman Azalea Chapter Mortar Board Senior Honor Society Seventeenth Annual Top Prof. Reviewer, *Optics and Lasers in Engineering, Food Chemistry, Infrared Physics and Technology, Spectrochimica Acta Part A, Journal of Photogrammetry and Remote Sensing*.

Mykhaylo V. Ruchko: Reviewer, *BMC Immunology*.

Robert W. Sobol: Chair, NIH Study Section, Cancer Etiology. Board member, Environmental Mutagenesis and Genomics Society (EMGS) Endowment Fund. Ad hoc reviewer, Fondation pour la Recherche Médicale, DoD Lung Cancer Research Program, Dutch Research Council, Israel Science Foundation, NIH Special Emphasis Panel/Scientific Review Group 2021/05 ZRG1 CB-L (02) M. Editorial board member, *Mutation Research – Fundamental and Molecular Mechanisms of Mutagenesis, PLoS ONE, Environmental and Molecular Mutagenesis*. Associate editor, *DNA Repair, Elsevier B.V.* Reviewer, *Advanced Genetics, Altex, Archives of Biochemistry and Biophysics, Biochemistry, Biomolecules, Cellular and Molecular Life Sciences, Critical Reviews in Biochemistry & Molecular Biology, DNA Repair, eLife, FASEB J, Frontiers in Cell and Developmental Biology, Frontiers in Pharmacology, Genetics and Genomics Next, International Journal of Molecular Sciences, Journal of Chemotherapy, Journal of Molecular Biology, Mutagenesis, Nature Communications, Nucleic Acids Research, PNAS, Redox Biology, Science Advances, Scientific Reports*.

Victor Solodushko: Reviewer, *BMC Research Notes, BMC Microbiology, Molecular Pharmaceutics, Nucleic Acids Research*.

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

Our Department's roster was stable this year; there were no retirements or recruitments of new faculty. But, as enumerated below, advances have been made and accomplishments were recognized along a number of fronts.

In terms of our educational mission, Professor Abu-Bakr Al-Mehdi, M.D., Ph.D. - a perennial recipient of the Red Sash and other forms of recognition for excellence in teaching – took on a new role as Assistant Dean for Assessment and Evaluation in the Division of Medical Education. This is clear evidence of his sustained and innovative contributions to the College's undergraduate medical curriculum and reflects an unwavering commitment by the Department and the College to nurturing a cadre of “master educators” to serve our instructional programs.

The Department's research programs remained robust and productive, despite the interruption and inconveniences imposed by the Pandemic. Our funding portfolio expanded, and we have grown into new areas, including novel strategies to treat COVID-19. Our efforts, inaugurated several years ago, to recruit faculty with expertise in “omics” – e.g., transcriptomics, metabolomics – and the Department's evolving focus on “translational research” – defined broadly as the goal to advance ideas conceived at the laboratory bench to clinical application – have been important catalysts in the growth of our research programs. Not to be overlooked, however, were the many contributions from our collaborators in other Basic Science and Clinical Departments at USA and clinician-scientists from other institutions. Interested readers are urged to skim the Department's portfolio of grant support and publication list to get a more complete appreciation for the importance of our research and the productive nature of our collaborations.

Service to the academic and local community remains an important component of the Department's mission. In this regard, many of our faculty served on prestigious grant review groups. Department faculty also review manuscripts submitted for publication to all notable scientific journals relevant to their areas of expertise. In terms of community-type service, one example is Dr. Borchert's ongoing role as a faculty advisor to the USA Student Sustainability and USA Food Recovery Network.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Physiology & Cell Biology**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Balczon R, Lin MT, Lee JY, Abbasi A, Renema P, Voth SB, Zhou C, Koloteva A, Michael Francis C, Sodha NR, Pittet JF, Wagener BM, Bell J, Choi CS, Venetuolo CE, Stevens T. Pneumonia initiates a tauopathy. *FASEB J*. 2021 Sep;35(9):e21807.

Balczon R, Morrow KA, Leavesley S, Francis CM, Stevens TC, Agwaramgbo E, Williams C, Stevens RP, Langham G, Voth S, Cioffi EA, Weintraub SE, Stevens T. Cystatin C regulates the cytotoxicity of infection-induced endothelial-derived  $\beta$ -amyloid. *FEBS Open Bio*. 2020 Nov;10(11):2464-2477.

Hayat F, Sonavane M, Makarov MV, Trammell SAJ, McPherson P, Gassman NR, Migaud ME. The biochemical pathways of nicotinamide-derived pyridones. *Int J Mol Sci*. 2021 Jan 24;22(3):1145.

Kar J, Cohen MV, McQuiston SA, Malozzi CM. Comprehensive enhanced methodology of an MRI-based automated left-ventricular chamber quantification algorithm and validation in chemotherapy-related cardiotoxicity. *J Med Imaging (Bellingham)*. 2020 Nov;7(6):064002.

Kar J, Cohen MV, McQuiston SA, Malozzi CM. A deep-learning semantic segmentation approach to fully automated MRI-based left-ventricular deformation analysis in cardiotoxicity. *Magn Reson Imaging*. 2021 May;78:127-139.

Karr J, Cohen M, McQuiston SA, Poorsala T, Malozzi C. Validation of a deep-learning semantic segmentation approach to fully automate MRI-based left-ventricular deformation analysis in cardiotoxicity. *Br J Rad*. 2021 Apr 1;94(1120):20201101.

Kozhukhar N, Alexeyev M. The mitochondrial genome sequence of the BS-C-1 cell line is at odds with the reported derivation from *Cercopithecus aethiops*. *Mitochondrial DNA B Resour*. 2020 Oct 5;5(3):3492-3494.

Lee JY, Stevens RP, Kash M, Zhou C, Koloteva A, Renema P, Paudel SS, Stevens T. KD025 shifts pulmonary endothelial cell bioenergetics and decreases baseline lung permeability. *Am J Respir Cell Mol Biol*. 2020 Oct;63(4):519-530.

Lee JY, Stevens RP, Migaud M, Stevens T. Salvaging the endothelium in acute respiratory distress syndrome: a druggable intersection between TLR4 and NAD<sup>+</sup> signaling. *Eur Respir J*. 2021 May 6;57(5):2004588.

Lee KJ, Wright G, Bryant H, Wiggins LA, Dal Zotto VL, Schuler M, Malozzi C, Cohen MV, Gassman NR. Cytoprotective effect of vitamin D on doxorubicin-induced cardiac toxicity in triple negative breast cancer. *Int J Mol Sci*. 2021 Jul 12;22(14):7439.

Makarov MV, Hayat F, Graves B, Sonavane M, Salter EA, Wierzbicki A, Gassman NR, Migaud ME. Chemical and biochemical reactivity of the reduced forms of nicotinamide riboside. *ACS Chem Biol*. 2021 Apr 16;16(4):604-614.

Mann EK, Lee KJ, Chen D, da Silva LM, Dal Zotto VL, Scalici J, Gassman NR. Associations between DNA damage and PD-L1 expression in ovarian cancer, a potential biomarker for clinical response. *Biology (Basel)*. 2021 Apr 29;10(5):385.

Mehta R, Sonavane M, Migaud ME, Gassman NR. Exogenous exposure to dihydroxyacetone mimics high fructose induced oxidative stress and mitochondrial dysfunction. *Environ Mol Mutagen*. 2021 Mar;62(3):185-202.

Sonavane M, Hayat F, Makarov M, Migaud ME, Gassman NR. Dihydronicotinamide riboside promotes cell-specific cytotoxicity by tipping the balance between metabolic regulation and oxidative stress. *PLoS One* 2020 Nov 9;15(11):e0242174.

Stevens RP, Paudel SS, Johnson SC, Stevens T, Lee JY. Endothelial metabolism in pulmonary vascular homeostasis and acute respiratory distress syndrome. *Am J Physiol Lung Cell Mol Physiol*. 2021 Aug 1;321(2):L358-L376.

Wright G, Sonavane M, Gassman NR. Activated STAT3 is a novel regulator of the *XRCC1* promoter and selectively increases XRCC1 protein levels in triple negative breast cancer. *Int J Mol Sci*. 2021 May 22;22(11):5475.

Xu N, Ayers L, Pastukh V, Alexeyev M, Stevens T, Tambe DT. Impact of Na<sup>+</sup> permeation on collective migration of pulmonary arterial endothelial cells. *PLoS One*. 2021 Apr 23;16(4):e0250095.

## II. PUBLISHED ABSTRACTS

Aziz, T, Rachek L, Knighten J, Andrews J, Pleshinger DJ, Francis C. 8-oxoguanine glycosylase (OGG1) is a determinant of endothelial dysfunction via calcium and nitric oxide signaling. *FASEB J*. 2021 May 14;35(S1):02668. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096.fasebj.2021.35.S1.02668>

Battle K, Patel G, Alvarez D, Xu N, Stevens T, Tambe D. Mechanomic engagement profile: integrative mapping of the mechanical properties that inform endothelial cell motion. *FASEB J*. 2021 May 14;35(S1):02128. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096.fasebj.2021.35.S1.02128>

deWeever A, Gwin M, Voth S, Paudel SS, Leavesley S, Balczon R, Stevens T. Development of a novel point of care test for toxic amyloids in patients recovering from

hospital acquired pneumonia. *FASEB J.* 2021 May 14;35(S1):02108. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096.fasebj.2021.35.S1.02108>

Gwin MS, Voth SB, Geurts A, Alexeyev M, Pastukh V, Zhou C, Lee J, Balczon R, Lin M, Stevens T. Characterization of a novel gamma secretase activating protein knockout rat. *Am J Respir Crit Care Med.* 2021;203:A3910. Available from: [https://www.atsjournals.org/doi/pdf/10.1164.ajrccm-conference.2021.203.1\\_MeetingAbstracts.A3910](https://www.atsjournals.org/doi/pdf/10.1164.ajrccm-conference.2021.203.1_MeetingAbstracts.A3910)

Kash M, Stevens RP, Balczon R, Alexeyev M, Kozhukhar N, Pastukh V, Stevens T, Lee J. Carbonic anhydrase IX and hypoxia promote pulmonary endothelial cell survival during infection. *Am J Respir Crit Care Med.* 2021;203:A3636. Available from: [https://www.atsjournals.org/doi/pdf/10.1164.ajrccm-conference.2021.203.1\\_MeetingAbstracts.A3636](https://www.atsjournals.org/doi/pdf/10.1164.ajrccm-conference.2021.203.1_MeetingAbstracts.A3636)

Knigheten, J, Lee J, Stevens T, Andrews J, Pleshinger DJ, Alexeyev M, Francis C. TdTomato transgenic reporter rat reveals endothelial-specific changes in progression of PAH. *FASEB J.* 2021 May 14;35(S1):03900. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096.fasebj.2021.35.S1.03900>

Mann E, Lee K, da Silva LM, dal Zotto V, Scalici J, Gassman N. Associations between DNA damage and PDL-1 expression in ovarian cancer, a potential biomarker for clinical response. *FASEB J.* 2021 May 14;35(S1):05041. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096.fasebj.2021.35.S1.05041>

Sayner S, Choi C. Activation of soluble AC10 induces cytoskeletal reorganization. *FASEB J.* 2021 May 14;35(S1):03736. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096.fasebj.2021.35.S1.03736>

Sen P, Francis C, Taylor M. Distinguishing dynamic Ca<sup>2+</sup> signals originating from different entry pathways in microvascular endothelial cells. *FASEB J.* 2021 May 14;35(S1):02427. Available from: <https://faseb.onlinelibrary.wiley.com/doi/10.1096.fasebj.2021.35.S1.02427>

Stevens RP, Alexeyev M, Kozhukhar N, Pastukh V, Stevens T, Lee J. Carbonic anhydrase IX's proteoglycan-like domain supports intracellular pH and cell migration while the intracellular domain regulates metabolism and cell migration in pulmonary microvascular endothelial cells. *Am J Respir Crit Care Med.* 2021;203:A3666. Available from: [https://www.atsjournals.org/doi/pdf/10.1164.ajrccm-conference.2021.203.1\\_MeetingAbstracts.A3666](https://www.atsjournals.org/doi/pdf/10.1164.ajrccm-conference.2021.203.1_MeetingAbstracts.A3666)

Wright GM, Gassman NR. STAT3 regulates the expression of XRCC1 in triple negative breast cancer. *Cancer Res.* 2021;81(13 Suppl):2144. Abstract no. 2144.

### III. PUBLISHED BOOKS

#### IV. INVITED PRESENTATIONS

Nelson AR. Invited speaker. Optogenetic regulation of pericytes. [virtual presentation] Vascular Biology 2020; 2020 Oct 27; Germantown, MD.

#### V. NATIONAL PROFESSIONAL RECOGNITION

Mikhail F. Alexeyev: Member, *Clinical Science, PLoS One, Biochimica et Biophysica Acta, International Journal of Molecular Sciences, International Journal of Biochemistry and Cell Biology, Genes*. Editorial Board Member, *Mitochondrial DNA*. Reviewer, *Aging, International Journal of Molecular Sciences, World Journal of Transplantation, Life*. Grant Reviewer, American Federation for Aging Research, National Institutes of Health (NIH/NCI, NIH/TAG, NIH/NIGMS).

Michael V. Cohen: Editorial Board, *Basic Research in Cardiology*. Member, American Heart Association, *New England Journal of Medicine*, International Society for Heart Research (ISHR); Reviewer, *Basic Research in Cardiology, Cardiovascular Drugs and Therapy, American Journal of Physiology, Circulation, European Journal of Pharmacology, Acta Physiologica, Cell Physiology & Biochemistry, Oxidative Medicine and Cellular Longevity*.

C. Michael Francis: Member, American Physiological Society, American Thoracic Society. Reviewer, *Journal of Visualized Experiments*.

Natalie R. Gassman: Council Member, Environmental Mutagenesis and Genomics Society; Publication and Policy Committee, Environmental Mutagenesis and Genomics Society. Editorial Board, *Mutation Research Reviews*. Reviewer, *DNA Repair, Cancer Letters, PLoS One, Toxicology Letters, Environmental and Molecular Mutagenesis, Preventive Medicine, Environmental Research, Mutation Research Reviews, International Journal of Molecular Sciences, Radiation Research, Chemosphere, Journal of Molecular Biology*.

Ji Young Lee: Member, American Thoracic Society. Reviewer, *American Journal of Respiratory & Critical Care Medicine, Pulmonary Circulation, PLoS One*.

Mike T. Lin: Member, American Physiological Society, Society of Neuroscience. Editorial Board Member, *Scientific Reports*. Reviewer, *International Journal of Biological Sciences, JOVE*.

Amy R. Nelson: Member, *Frontiers in Aging Neuroscience*; Editorial Board Member, *International Journal of Molecular Sciences*. Reviewer: *Journal of Neurochemistry, Frontiers in Aging Neuroscience*, AAIC Abstract Review Team.

Sarah L. Sayner: Member, American Thoracic Society. Reviewer, *American Heart Association, American Journal of Physiology Lung Cell and Molecular Physiology, American Journal of Pathology, PLoS One*.

Troy Stevens: Member, American Thoracic Society, American Physiological Society. Editorial Board Member, *American Journal of Physiology Lung Cellular and Molecular Physiology*, *Pulmonary Circulation*, *FASEB J*. Ad hoc reviewer, National Institutes of Health, Brown University COBRE External Advisor.

Mark S. Taylor: Member, Gulf Coast Physiological Society, American Heart Association, American Physiological Society. Reviewer, *American Journal of Physiology*, *Nature*, *British Journal of Pharmacology*, *Journal of OB-GYN*, *Journal of Cellular and Molecular Medicine*, *PLoS One*, *International Journal of Molecular Sciences*, *Journal of Basic and Clinical Physiology & Pharmacology*.

David S. Weber: Member, American Physiological Society, American Heart Association. Editorial Board Member, *International Journal of Molecular Sciences*. Reviewer, *Journal of the American Heart Association*, *Hypertension*, *Journal of Molecular and Cellular Cardiology*, *Laboratory Investigation*, *Journal of Cardiovascular Pharmacology*, *Asian Journal of Medicine and Health*, *International Journal of Molecular Sciences*, *Nutrients*, *Arteriosclerosis, Thrombosis and Vascular Biology*, *Cardiology and Angiology: an International Journal of Molecular Sciences*, *Chinese Journal of Physiology*, *Marine Drugs*, *Current Medicinal Chemistry*, *Medicina*, *Marine Drugs*.

Xiangming Zha: Member, Society of Neuroscience. Editorial Board, *PLoS One*, *Molecular Brain*, *Frontiers in Cellular Biochemistry*. Reviewer, *Nature Communications*, *Molecular Therapy*, *Science Signaling*, *Molecular Brain*, International Stroke Conference 2020 Abstracts.

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The Department of Physiology & Cell Biology continually strives to contribute to the College of Medicine's mission of education, research and service. The faculty actively submit and receive grants at a nationally competitive level.

Dr. Mikhail Alexeyev received two Peer Reviewed Medical Research Program Awards from the Department of Defense. One award was an Expansion Award entitled "Towards humanized mouse models of mitochondrial disease". The second award was a Discovery Award entitled "Defining the molecular composition of the interspecies barrier for mitochondrial DNA replication".

Dr. Natalie Gassman received an award from the National Institute of Environmental Health Sciences focusing on the harmful effects of dihydroxyacetone (DHA), a molecule produced by electronic cigarettes. Dr. Gassman also received a Department of Defense Ovarian Cancer Clinical Translational Research Award for her research on DNA damage as a biomarker for immunotherapy response in ovarian cancer.

Dr. Ji Young Lee received a National Institutes of Health K08 Mentored Clinical Scientist Research Career Development Award. Dr. Lee's project strives to improve our



understanding of the effects of acidosis on pneumonia and establishing the conceptual basis for diagnostic and therapeutic translation.

Dr. Mark Taylor received an NIH R01 grant entitled “Network signature of low-flow endothelial dysfunction”. This project focuses on characterizing and correcting the transition of the endothelial cell network to an anomalous signaling signature that promotes progressive and irreversible vascular disease.

Two Physiology & Cell Biology graduate students also received awards this year. Brianne Kestler, Dr. Mark Taylor’s graduate student, received the Research Recognition Award from the Cellular and Molecular Physiology Section of the American Physiological Society. Kestler is examining the relationship between calcium-activated potassium channels and uterine contractions. Griffin Wright, Dr. Gassman’s graduate student, received a Center for Clinical and Translational Science Pre-doctoral Award entitled “Dysregulation of base excision repair proteins in triple negative breast cancer”.

Sarah Voth, Dr. Stevens’ graduate student, received her doctorate degree and is now an NIH postdoctoral fellow at Yale University School of Medicine. Dr. Phoibe Renema, Dr. Stevens’ postdoctoral fellow, accepted an appointment as an Assistant Professor in the department of Biomedical Sciences in the College of Allied Health Professions.

The department faculty continue to contribute to medical education. Several faculty members served as module/course directors, lecturers, facilitators of active learning sessions and mentors. The faculty significantly contributed to the Cardiovascular and Urinary modules for M1 students, as well as Respiratory, Digestive, Endocrine/Reproductive, Musculoskeletal and Neuroscience/Behaviors modules for M2 students. Anthony Fant, an M1 student mentored by Dr. Alexeyev, won best poster presentation at the 48<sup>th</sup> annual Summer Research Day held on July 23, 2021.

The faculty are actively involved in teaching within the Basic Medical Sciences Graduate Program. Dr. Lee and Dr. Stevens were co-directors of IDL 631 Lung Pathobiology. Dr. Francis and Dr. Taylor were co-directors of IDL 640 Statistics and Experimental Design in Biomedical Research. Dr. Taylor was co-director of a new graduate course IDL 590 Principles of Microscopy, Imaging and Image Analysis. Dr. Taylor also received the Red Sash designation at the Honors Convocation held on May 5, 2021.

Dr. Natalie Gassman was awarded the National Alumni Association Endowed Award for Faculty Innovation from USA’s National Alumni Association.

The department of Physiology & Cell Biology continues to recruit new faculty and strives to contribute to the College of Medicine’s mission of education, research and service.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Psychiatry**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

**II. PUBLISHED ABSTRACTS**

Lee S, Omar M, Engeriser JL. A case of clozapine-induced hypothermia. Alabama Psychiatric Physicians Association Fall Conference; 2020 Oct 9-10; Prattville, AL. Abstract no. 20-2-03. Available from: [http://www.alabamapsych.com/wp-content/uploads/2021/03/Abstract-hand-out\\_APPA-2020F.pdf](http://www.alabamapsych.com/wp-content/uploads/2021/03/Abstract-hand-out_APPA-2020F.pdf)

Marshall ML, Engeriser JL. Neurosarcoidosis and psychosis, a case study. Alabama Psychiatric Physicians Association Fall Conference; 2020 Oct 9-10; Prattville, AL. Abstract no. 20-2-07. Available from: [http://www.alabamapsych.com/wp-content/uploads/2021/03/Abstract-hand-out\\_APPA-2020F.pdf](http://www.alabamapsych.com/wp-content/uploads/2021/03/Abstract-hand-out_APPA-2020F.pdf)

Pai DS, Engeriser JL. Serotonin-like syndrome in “spice” intoxication: a case report. American Psychiatric Association Annual Meeting; 2021 Apr 30-May 3; Washington DC. Abstract no. P9-093.

Pai DS, Srivastava A, Engeriser JL. Olanzapine induced hair loss – a case series. Alabama Psychiatric Physicians Association Fall Conference; 2020 Oct 9-10; Prattville, AL. Abstract no. 20-2-06. Available from: [http://www.alabamapsych.com/wp-content/uploads/2021/03/Abstract-hand-out\\_APPA-2020F.pdf](http://www.alabamapsych.com/wp-content/uploads/2021/03/Abstract-hand-out_APPA-2020F.pdf)

**III. PUBLISHED BOOKS**

**IV. INVITED PRESENTATIONS**

Engeriser L, Gipson C. Invited speakers. Overview of the behavioral health crisis center. National Alliance on Mental Illness Alabama 35th Annual Meeting, 2021 Aug 20; Opelika, AL.

Engeriser JL. Invited speaker. Benzodiazepines and the diagnosis and treatment of anxiety disorders. Intensive Course in Prescribing and Pharmacology of Controlled Drugs: Critical Issues and Common Pitfalls, Medical Association of the State of Alabama, Alabama Board of Medical Examiners and Alabama Board of Nursing; 2021 Aug 8; Destin, FL.

Engeriser JL. Invited speaker. Identifying people at risk with psychiatric problems. Intensive Course in Prescribing and Pharmacology of Controlled Drugs: Critical Issues and Common Pitfalls, Medical Association of the State of Alabama, Alabama Board of Medical Examiners and Alabama Board of Nursing; 2021 Aug 7; Destin, FL.

Engeriser JL. Invited speaker. Dual role dilemmas for military psychiatrists and physicians. University of South Alabama Military Medicine Interest Group; 2021 Mar 18; Mobile, AL.

Engeriser JL. Invited speaker. Benzodiazepines and the diagnosis and treatment of anxiety disorders [virtual presentation]. Intensive Course in Prescribing and Pharmacology of Controlled Drugs: Critical Issues and Common Pitfalls, Medical Association of the State of Alabama, Alabama Board of Medical Examiners and Alabama Board of Nursing; 2021 Mar 16; Montgomery, AL.

## **V. NATIONAL PROFESSIONAL RECOGNITION**

## **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

### **Education**

The Department continues with its strong emphasis on education. The third year clerkship continues to score very well on the NBME subject exams, averaging ~70th percentile when compared to national norms. Likewise, on Step II of the USMLE, the students have consistently scored at 0.2-0.5 S.D. above the national norm in psychiatry and behavioral science over the past five years. The students' satisfaction with the second year neuro-behavioral module and the third year clerkship continues to be very positive, with the number of students matching in psychiatry residencies exceeding the national average by two to three fold. This success is primarily due to the quality of the faculty teaching combined with the students' direct involvement in the treatment of psychiatric patients. The faculty also serve as effective role models and mentors for the students.

The Residency and the Child Fellowship programs continue with maximum years of accreditation. In the spring of 2020, the Department's Addiction Fellowship achieved full accreditation, the first in Alabama and one of the first in the country. The inaugural fellow began on July 1, 2021 and will complete his fellowship in July, 2022. He is currently working with emergency departments in Mobile to enhance the identification and treatment of those with addictive disorders, particularly opioid addiction. As one measure of the success of the program, the vast majority of graduates from both the residency and fellowship remain in Alabama, which has a severe shortage of psychiatrists, especially child psychiatrists.

### **Research**

Dr. Bill Billett, Research Director for the Department, in collaboration with Dr. Mark Gillespie of Pharmacology, together with faculty from Nursing and Psychology, has shown that mitochondrial DNA is released during psychological stress in a sub-population of normal subjects. This release of mitochondrial DNA is similar, but not to the same degree, as measured in patients suffering from physical trauma. Released mitochondrial DNA in response to physical trauma results in oxidative damage to lung tissue and serves as a predictor of overall recovery from the trauma incident. Its release under psychological stress could lead to the development of drugs that could mitigate the psychological reactions associated with post-traumatic stress disorder and other stress conditions. Studies

are now underway with bipolar patients, acutely hospitalized, to determine their mitochondrial DNA levels. Grant funding will be sought during the coming academic year, pending the results of these preliminary studies. Other research efforts are focused on case reports and small clinical case studies involving students and residents to acquaint them with research methodology in psychiatry. This has led to national presentations, although most of this work is presented at regional and state medical and/or psychiatric meetings.

### **Clinical Programs**

The Department maintained psychiatric services at Student Health two afternoons per week, with demand for services continued to increase as the stigma associated with mental issues continues to lessen among the student body. All undergraduate and graduate students at USA are eligible to receive psychiatric services. This service utilizes PGY3 residents, who are directly supervised by the retiring Department Chair, who served as the attending physician. In addition, he provided psychiatric services to the medical students, residents and fellows. These responsibilities will be assumed by Dr. Hal Veits, an experienced senior psychiatrist. Additional clinical activities of the Department are conducted in partnership with AltaPointe, as described below.

This unique partnership with AltaPointe has brought together academic and clinical programs to enhance the comprehensive mental health services available to patients from early childhood to the elderly. AltaPointe's increasing partnerships with mental health centers from around the state have resulted in expanded use of tele-psychiatry to improve access to psychiatrists in underserved areas, especially rural communities. The COVID-19 pandemic has further expanded these services throughout the region and state-wide, especially for those needing consultations from a child psychiatrist. The merger of the MARC program in Mobile with AltaPointe that occurred last year continues to expand services to those with cognitive disabilities, which has presented a particular challenge in the face of COVID-19. In addition, AltaPointe is one of the first programs in the country to initiate collaborative care, which is psychiatric services integrated with primary care services on site in the same clinic. Studies have shown improved patient compliance and outcomes using this model, especially for patients suffering from both a chronic medical illness plus a psychiatric disorder. Examples include patients with diabetes complicated with depression, as well as those with chronic mental illness (schizophrenia) who are much more likely to also suffer from serious medical problems. The first clinic opened in Bayou La Batre in 2019. An additional clinic started in West Mobile in 2020 with further expansion planned. In addition, AltaPointe has established the region's first crisis intervention unit to serve the needs of patients with acute psychiatric problems that have previously led them to the area's emergency rooms or jail. Included in this population are those with serious addiction disorders. AltaPointe is working with the regions' police departments, EMS services, and emergency departments to redirect patients with acute psychiatric emergencies to this crisis center. AltaPointe has also expanded the region's first and only transcranial magnetic stimulation (TMS) treatment program for patients with treatment resistant depression. As mentioned above, the Department continues to offer psychiatric services to undergraduate and graduate USA students through the Student Health Clinic. The Chair, through his private outpatient practice, continued to offer psychiatric services to medical students, residents, and fellows, plus USA faculty, staff and their families, in addition to adult patients in the surrounding region. This services will now

be assumed by AltaPointe as part of their commitment to comprehensive psychiatric care for patients throughout this region and beyond.

### **Leadership Change**

After serving for more than ten years as Acting Chair of the Department, Dr. Franks is stepping down in advance of his retirement schedule for the fall of 2021. Dr. Sandra Parker, Vice-Chair of the Department was appointed permanent Chair, effective July 1, 2021. She brings an excellent academic and clinical record of accomplishments to that position. While also serving as the Medical Director of AltaPointe over the last fifteen years, she has initiated and overseen the clinical programs described above, as well as provided oversight to the educational programs for the students, residents, and fellows.

In addition, Dr. Bogan Brooks has retired after more than ten years as the medical student clerkship director; also directly responsible for the psychiatry portion of the sophomore curriculum. His duties have been assumed by the very capable Dr. Lori Lowthert, starting in the spring of 2021.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Radiology**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Dahiya A, Chao C, Younger J, Kar J, Baldwin BM, Cohen MV, Joseph S, Chowdhry A, Figarola MS, Malozzi C, Nasser MF, Nabeel Y, Shah R, Kennen JM, Aneja A, Khalil S, Ragab S, Mohammed O, Moustafa T, Hamdy A, Ahmed S, Heny A, Taher M, Ganigara M, Dhar A, Misra N, Alzubi J, Pannikottu K, Jabri A, Hedge V, Kanaa'n A, Lahorra J, de Waard D, Horne D, Dhillon S, Sweeney A, Hamilton-Craig C, Katikireddi VS, Wesley AJ, Hammet C, Johnson JN, Chen SSM. Society for Cardiovascular Magnetic Resonance 2019 Case of the Week series. J Cardiovasc Magn Reson. 2021 Apr 1;23(1):44.

Kar BJ, Cohen MV, McQuiston SA, Malozzi CM. A deep-learning semantic segmentation approach to fully automated MRI-based left-ventricular deformation analysis in cardiotoxicity. Magn Reson Imaging. 2021 May;78:127-139.

Kar J, Cohen MV, McQuiston SA, Malozzi CM. Comprehensive enhanced methodology of an MRI-based automated left-ventricular chamber quantification algorithm and validation in chemotherapy-related cardiotoxicity. J Med Imaging (Bellingham). 2020 Nov;7(6):064002.

Karr J, Cohen M, McQuiston SA, Poorsala T, Malozzi C. Validation of a deep-learning semantic segmentation approach to fully automate MRI-based left-ventricular deformation analysis in cardiotoxicity. Br J Radiol. 2021 Apr 1;94(1120):20201101.

Knight CT, Rana HN, Standley T. A unique case of sporadic optic pathway glioma in an infant with acute nystagmus. Cureus. 2021 Aug 30;13(8):e17568.

Mao A, Rana HN, Brackett WJ, Figarola S, McQuiston S. Miraculous recovery after penetrating trauma to the mediastinum. Cureus. 2020 Oct 23;12(10):e11106.

Mao A, Rana HN, Elramah M, Martin B. An unusual case of retroperitoneal plexiform neurofibromas found in a trauma patient. Cureus. 2021 Jan 29;13(1):e12997.

**II. PUBLISHED ABSTRACTS**

Baldwin B, Poosarla T, McQuiston S, Chouhdry A, Cohen MV, Revere C, Kakish R, Zhong X, Malozzi C, Kar J. A deep-learning semantic segmentation approach to fully automate MRI-based left-ventricular deformation analysis in cardiotoxicity. Society for Cardiovascular Magnetic Resonance (SCMR) 2021 Virtual Scientific Sessions; 2021 Feb 18-20; Chicago, IL.

Baldwin BM, Kakish R, Revere C, Poosarla T, Zhong X, Malozzi Jr CM, McQuiston S, Cohen MV, Kar J. A fully automated method for the assessment of left-ventricular chamber

quantification and three-dimensional strain analysis to indicate cardiotoxicity. Biomedical Engineering Society 2020 Virtual Annual Meeting; 2020 Oct 14-17; Landover, MD. Available from: <http://submissions.miramsmart.com/SecureView/BMESArchive/radk2mc0irv.pdf> and <http://submissions.miramsmart.com/SecureView/BMESArchive/radatixgnmj.pdf>

### **III. PUBLISHED BOOKS**

### **IV. INVITED PRESENTATIONS**

Gupta S. Invited speaker. Imaging infection and inflammation; the role of nuclear medicine. University of Mississippi Medical Center; 2021 Feb 20; Jackson, MS.

Gupta S. Invited speaker. Unusual findings in some "usual" cancers. University of Mississippi Medical Center; 2021 Feb 20; Jackson, MS.

### **V. NATIONAL PROFESSIONAL RECOGNITION**

Maria Figarola. Manuscript Reviewer, American Journal of Radiology. Advisory Role, Society of Pediatric Radiology online forums Q&A. Reviewer Radiology MOC Questions. Selection Committee Member, Alpha Omega Alpha Medical Honor Society.

Shikha Gupta. Reviewer, *American College of Radiology* for Nuclear Medicine and PET/CT program accreditation. *American College of Radiology* National Committee Member on Nuclear Medicine Accreditation.

Zeiad Hussain. Reviewer, *European Journal of Radiology*.

Rosemary Klecker. Reviewer, *American Journal of Radiology* and *Skeletal Radiology*. Membership Committee Member, *Society of Skeletal Radiology*.

Samuel McQuiston. Question Writer and Reviewer, Rad Exam (*American College of Radiology* in-training exam). Reviewer, *Journal of Radiology Case Reports*, *Cureus* and *RSNA Case Library*. Editorial Manager, *Journal of Radiology Case Reports*.

Elizabeth Park. Advisory Role, *National Accreditation Programs for Breast Centers*.

### **VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

Dr. Gregg Delgado, who was previously a member of our PRN adjunct faculty, became a member of our full-time faculty in December 2020. The position created for Dr. Delgado was very innovative and unique, as the first faculty member in our department to perform remote reading and resident teaching from North Alabama. As a fellowship trained neuroradiologist and musculoskeletal radiologist, Dr. Delgado's subspecialty training has been an extremely important contribution, not only to resident education, but for providing

subspecialty reads on an ever growing volume of advanced imaging in both of these areas. He has been an advisor to six medical students over the last year. Dr. Delgado's service contributions and leadership include becoming the Vice Chair of our departmental Quality Assurance and Performance Improvement committee. He has also demonstrated scholarship over the last year with a poster and paper submitted to the Orthopedic Trauma Association and a resident collaboration on an ACR Case in Point submitted for publication.

Dr. Shikha Gupta is an extremely valuable member of our faculty. She is division chief of the nuclear medicine section and excels in providing unique clinical services in advanced imaging, including high-quality PET CT interpretations, as well as expertise in cross-sectional imaging of liver, prostate, and colorectal cancers. She provided oversight in selecting a new PET CT scanner for MCI and a new image guided biopsy system for MRI guided prostate biopsies. Her nuclear medicine conference is approved for category one CME credit. She is a clerkship director for our UME Ray 480/481 program. She is also a faculty mentor and advisor to two radiology residents. Beyond her clinical services, Dr. Gupta's service contributions include committee work for the department involving the residency Program Evaluation Committee and Clinical Competency Committee. She leads a biweekly colorectal multi-disciplinary tumor board. In addition, she is chair of the USA Health Radiation Safety Committee, a member of the College of Medicine Curriculum Committee and sub-committee on M4 clerkships, and a member of the Continuous Quality Improvement committee. Dr. Gupta has also had an excellent year in scholarly activity and leadership. She was promoted from associate professor to full professor this academic year. In addition, she gave oral presentations on nuclear medicine topics at the University of Mississippi Medical Center, Jackson, MS in February 2021. Nationally, Dr. Gupta is an ACR reviewer for Nuclear Medicine and PET/CT accreditation and a member of the ACR National Committee on Nuclear Medicine Accreditation.

Dr. Zeiad Hussain has assumed the position of division chief of interventional radiology following the resignation of the former division chief, Dr. Osama Abdul Rahim, in May 2021. Dr. Hussain is a fellowship-trained interventional radiologist who, together with Dr. Rahim, built a thriving and robust IR division. The services provided by Dr. Hussain and his team range from complex therapeutic treatments for cancer, such as Y-90 chemoembolizations, to life-saving interventions for patients in hepatic failure and high acuity vascular embolizations for our trauma patients, just to name a few. Dr. Hussain also holds multiple additional leadership positions, which include Chair of the IR Quality Assurance and Performance Improvement committee, chief interventionalist of the Early Specialization in Interventional Radiology residency program, and lead interventionalist for the IR simulation center. He has been a principal advisor to a medical student and two radiology residents over the last year.

Dr. Rosemary Klecker, an associate professor of diagnostic radiology, joined our faculty last year as the new division chief of musculoskeletal radiology. In the time since Dr. Klecker has joined our department, she has provided excellent leadership of her section and outstanding efforts in scholarship and resident/student education. As a fellowship trained musculoskeletal radiologist, Dr. Klecker has participated in lectures and grand



rounds, not only for radiology but for orthopedic surgery as well. She provides outstanding sub specialty reads on an ever growing volume of advanced imaging in her area of expertise. Dr. Klecker has brought much scholarship in clinical practice to our department, including the introduction of MSK ultrasound procedures and muscle core biopsies. In addition, she has worked at the national level with her MSK colleagues to transform an online case-based learning and presentation tool into a recognized international organization with annual CME meetings. Dr. Klecker's service contributions and leadership to the department and College of Medicine include becoming a member of the committee on radiation dose protocol and a member of the committee for CME development. At the national level, Dr. Klecker is a reviewer for AJR and Skeletal Radiology as well as membership on the new member committee of the Society of Skeletal Radiology.

Dr. Ian Malcolm, associate professor of radiology, has served as the section chief of chest imaging for our department for 20 years. He has been invaluable in the training of our residents and medical students and has provided excellent clinical service to our department and USA Health. Dr. Malcolm made the decision to retire after many decades of service to the profession of radiology. We wish him well and thank him for his dedication and tireless contributions to our department.

Dr. Brett Martin is an extremely engaged and productive faculty member who is also section chief of neuroradiology. As a fellowship trained neuroradiologist, Dr. Martin provides resident lectures, an updated curriculum and advanced imaging protocols to the department. In addition, he is the associate program director for the radiology residency. He gives regular lectures on neuroradiology to our residents and leads the multidisciplinary Neuroradiology, Neurology, Neurosurgery and Neurointerventional weekly conference, where he presents advanced imaging to medical students, residents and faculty. He was the faculty mentor for four medical students over the last year, as well as the major advisor to two residents and a medical student with the completion of several ASNR educational exhibits and an ACR case in point publication. Dr. Martin's service contributions and leadership include chair of the Program Evaluation Committee for the residency program and chair of the MRI safety committee for the department of Radiology. He is a member of the Residency Selection Committee and Clinical Competency Committee for the residency program. He also serves on the trauma and ER peer review committee and the stroke steering committee for the USA Health system. Finally, over the 2020- 2021 academic year, Dr. Martin provided major contributions to the design and implementation of home reading workstations for many radiology faculty, thus improving the delivery of healthcare to our patients.

Dr. Samuel McQuiston, associate professor of radiology, provides invaluable contributions to the education, service and leadership in our department, as well as service and leadership to the College of Medicine. As program director for the department of radiology, Dr. McQuiston continues to provide excellent guidance and leadership for the residents, ensuring that the residency program meets all of the ACGME standards required for accreditation. He is also very active in providing lectures and leadership in multiple UME course modules, including the Radiology Selective rotation for the medical students. He is

faculty advisor to 22 students in the Radiology Interest Group, mentor to 4 residents, and research advisor to 2 additional radiology residents. His tireless contributions to education have earned him the Red Sash award, recognizing his outstanding teaching. Dr. McQuiston has shown significant contributions to scholarship over the past year. His scholarly activity includes serving as a Co-PI on two projects, one NIH/JIT grant funded at \$400,000 and a second grant funded at \$5,000 through USA Allied Health. He also has 4 peer reviewed articles in press and 5 presented or published abstracts/posters, many of which have been collaborative efforts with other clinical and basic science colleagues. In addition, Dr. McQuiston established a new multi-institutional bimonthly group meeting with other program directors in the southeast region, bringing shared education and research opportunities to all of the participating programs. He has numerous committee assignments for the department and College of Medicine. This past year, Dr. McQuiston assumed the role of Chair of the Radiology Quality Assurance Program Improvement committee. He was instrumental in leading the quality and safety initiatives for our department, as well as providing statistical data on key department metrics such as turnaround times. Nationally, Dr. McQuiston is a Bronze Award winning question writer and editor for RadExam (an ACR in-training exam) and is a peer reviewer for multiple national radiology journals.

Dr. Margaret Mowry continues to provide strong clinical service to our department as a 0.6 FTE. She provides expertise in interpretation and teaching in several subspecialty areas, including breast imaging, body imaging, prostate MRI and oncology/PET-CT. Mammography requires maintaining additional FDA credentialing and CME. As a body fellowship-trained radiologist, she provides resident lectures in this area. She participates in the oncology tumor board as the radiology representative.

Dr. Elizabeth Park, our fellowship trained breast imager, is section chief of Breast Imaging and continues to play a key role in the development of our women's imaging center. She continues to provide excellent clinical service and resident education. She is part of the multidisciplinary breast cancer treatment team made up of USA surgeons and oncologists and is a member of the committee on cancer. She is also a member of the departmental Program Evaluation Committee and Clinical Competency Committee for the residency program. Dr. Park was a speaker and panelist at the Think Pink Tea held in October 2020. She also remains a radiology advisor and representative for the NAPBC (National Breast Accreditation Program Committee).

Dr. Todd Standley is an outstanding fellowship trained pediatric radiologist, with an added certificate of additional qualification. As one of the few sub-specialty certified pediatric radiologists in the region, Dr. Standley provides higher level interpretations of all pediatric imaging studies performed in the USA Health System. He is the course director over the pediatric radiology clerkship for M3 and M4 medical students and pediatric residents. He is also the primary radiology faculty advisor at the monthly pediatric tumor board conference and radiology representative for the monthly Children with Special Needs conference. Dr. Standley collaborated on an ACR Case In Point with two of the radiology residents.

Dr. Brad Steffler provides excellence in teaching, education and clinical service to the radiology department as the chief of the body imaging section. His background in interventional radiology has provided expertise in overseeing arthrograms and other basic interventional procedures. He is also a key instructor for fluoroscopic procedures and has led efforts to improve the curriculum and services in ultrasound. Dr. Steffler consistently provides an unwavering commitment and significant contributions across multiple areas in the department. He provides monthly resident lectures in body imaging and has been mentoring a residency research project on ultrasound quality assurance.

Dr. Brian Wood, a former graduate of the USA Radiology Residency program, joined our department this year as an assistant professor in the division of interventional radiology. Following the resignation of the former division chief, Dr. Osama Abdul Rahim, in May 2021, Dr. Wood has been an indispensable member of the IR team providing exceptional IR clinical services as well as excellent resident education. As a fellowship trained interventional radiologist, Dr. Wood provides a broad range of complex therapeutic services including treatments for cancer, life-saving interventions for patients in hepatic failure, as well as high acuity vascular embolizations for bleeding trauma patients, to name a few. He gives regular lectures on interventional radiology to our residents. He has been a principal research advisor and mentor to two of our residents. In addition, Dr. Wood provides hands-on simulation workshops in ultrasound-guided procedures and is a key faculty member in the early specialization in interventional radiology residency training program. Dr. Wood's service contributions include being an interventional radiology member of the weekly multidisciplinary hepatobiliary tumor board. His goals for the coming year include starting an IR Journal Club and a suturing simulation lab.

Our senior residents matched in prestigious and highly competitive fellowship programs that include the University of Michigan in Ann Arbor, University of Texas Southwestern Medical Center in Dallas, University of Alabama in Birmingham, Medical University of South Carolina in Charleston, and employment with Gulf Coast Imaging in Biloxi. We have also had great success in our residency recruitment, with seven new residents who joined us on July 1, 2021, and one resident who joined us on July 7, 2021.

Our eight new residents are: Dr. Artineh "Arti" Hayrapetian, who graduated from the Islamic Azad University, Najafabad Branch Faculty of Medicine and completed her preliminary year in General Surgery at University of Colorado Denver School of Medicine; Dr. Mathurika "Rika" Jeyasingam, who graduated from St. George's University School of Medicine and completed her preliminary year in General Surgery at St. Barnabas Medical Center; Dr. Zubair Chaudry, who graduated from Ross University School of Medicine and completed his preliminary year in Internal Medicine at the University of South Alabama; Dr. Matthew Kassels, who graduated from the University of South Alabama School of Medicine and completed his preliminary year in Surgery at the University of South Alabama; Dr. Jacqueline Melvin, who graduated from East Virginia Medical School and completed her transitional year at Coliseum Medical Center; Dr. Anthony Obisesan, who graduated from the American University of the Caribbean and completed his preliminary year in Internal Medicine at the University of South Alabama; Dr. Priyanka Satish who graduated from the American University of the Caribbean and completed her preliminary

year in Internal Medicine at the University of South Alabama; Dr. Anas “A.J.” Souid, who graduated from the Royal College of Surgeons in Ireland - Medical University of Bahrain and completed his preliminary year in Internal Medicine at the University of South Alabama.

The residency program has had continued success in board pass rates, filling residency slots and obtaining prestigious post residency fellowship positions. We have also shown marked improvement in resident diversity, with 30% females and 15% underrepresented minorities recruited into our program.

The department of radiology has had many additional successes over the last year. We have continued to have unprecedented increases in volumes and charges, with departmental revenue up 23% over last year and 39% over fiscal year 2018-19. As part of our new quality initiatives and need for addressing the markedly increased imaging volumes, we have negotiated and established new after hour services which include:

vRad services providing 9 PM to 7 AM after hours preliminary reads by board-certified radiologists; Gulf Coast Imaging services providing assistance with final reads from 3 PM to 9 PM; and a new moonlighting service with board-certified radiologists providing imaging interpretation and final reads on studies between 4 PM and 9 PM. These added services have markedly decreased radiology turnaround times in all areas, particularly on emergency and inpatient studies. The turnaround time for all USA Health Radiology studies using 2021 data has decreased 79% when compared to the same time frame in 2019.

Another key accomplishment for our department over the last year has been the development of a robust Quality Assurance and Performance Improvement plan for both diagnostic and interventional radiology which includes data on peer review, turnaround times, patient safety events, patient satisfaction, radiation safety, exam appropriateness, and resource utilization.

ACGME, ACR, ABR and Joint Commission quality and safety requirements, including those needed for program accreditation, are also covered in this plan. In addition, we joined VIRTEX, a national IR registry, providing national comparative benchmarks on quality measures.

We have recruited Dr. Brian Wood, an assistant professor in the IR division, who joined our faculty in March 1, 2021. We also recruited associate professor Dr. Rosemary Klecker as division chief of musculoskeletal radiology, who joined our faculty November 1, 2020. In addition, we created an innovative new remote faculty position filled by assistant professor Dr. Gregg Delgado, who returned full-time to our faculty. He has subspecialty training in both neuroradiology and musculoskeletal radiology. We have also successfully recruited multiple PRN community private practice partners as adjunct faculty.

Other new clinical services provided by radiology include:

An updated hospital-based system called Navigo, an MRI/ultrasound prostate fusion biopsy mapping system used intraoperatively by the urologic surgeons for guidance in prostate cancer treatment;

Additional radiology services to the new UH Trauma Center, including a new Siemens CT scanner;

Additional MRI services at the Commons;

Two new GE ultrasound machines at USACW, a new Hologics 3D tomosynthesis breast imaging machine at the Strada outpatient clinic, and a new radiofrequency localizing device used in breast imaging and surgery.

We are preparing for further growth in the coming year with new imaging services to be provided at the freestanding ED in West Mobile.

As with many other departments, our department spent much time responding to the needs of the COVID-19 pandemic. The faculty and residents worked as a team in meeting the changing demands, which included a surge in imaging studies after the first wave of the pandemic ended. The department leadership, faculty and residents worked together to maintain a quality and safe learning environment.

Major goals for the department, many of which are actively underway, include:

- increasing faculty numbers, particularly in the key areas of breast imaging and body imaging;
- implementing strategies to address the increasing volumes to maintain balance between patient care and education, as well as providing protected academic time for residents and faculty;
- promote faculty development;
- finish renovations in the IR area for additional recovery beds;
- complete the hybrid IR/surgery suite in the old ER space;
- address capital equipment needs, including a new MRI for USACW, as well as the need for an additional angiography suite for all interventional services to improve access and patient throughput as the health system continues to expand our provider base;
- finalize strategic plans for the new imaging services to be provided at the freestanding emergency department.

We anticipate further faculty recruitment in the coming year and look forward to new opportunities to advance our clinical service, teaching and research missions.

**2020-2021**  
**Summary of Scholarly Activities**  
**Department of Surgery**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Beard TL, Michalsky C, Candiotti KA, Rider P, Wase L, Habib AS, Demitrack MA, Fossler MJ, Viscusi ER. Oliceridine is associated with reduced risk of vomiting and need for rescue antiemetics compared to morphine: exploratory analysis from two phase 3 randomized placebo and active controlled trials. *Pain Ther.* 2021 Jun;10(1):401-413.

Benedict LA, Sujka JA, Sobrino JA, Alemayehu H, Aguayo P, Hendrickson R, Oyetunji TA. Mitigating disparity in children with acute appendicitis: impact of patient-driven protocols. *J Pediatr Surg.* 2021 Apr;56(4):663-667.

Bergese S, Berkowitz R, Rider P, Ladouceur M, Griffith S, Segura Vasi A, Cochrane K, Wase L, Demitrack MA, Habib AS. Low incidence of postoperative respiratory depression with oliceridine compared to morphine: a retrospective chart analysis. *Pain Res Manag.* 2020 Oct 24;2020:7492865.

Butts CC, Holmes JH, Carter JE. Surgical escharotomy and decompressive therapies in burns. *J Burn Care Res.* 2020 Feb 19;41(2):263-269.

Butts CC, Miller P, Nunn A, Nelson A, Rosenberg M, Yanmis O, Avery M. RIB fracture triage pathway decreases ICU utilization, pulmonary complications, and hospital length of stay. *Injury.* 2021 Feb;52(2):231-234.

DiVincenzo MJ, Latchana N, Abrams Z, Moufarward M, Regan-Fendt K, Courtney NB, Howard JH, Gru AA, Zhang X, Fadda P, Carson WE. Tissue microRNA expression profiling in hepatic and pulmonary metastatic melanoma. *Melanoma Res.* 2020 Oct;30(5):455-464.

Fahmawi Y, Smith C, Grimm L, Khullar S, Rider P, Hunter J, Iliff G, Mneimneh W, Roveda K, Wang B, Prodduturvar P, Alkharabsheh O, McCormick B, Mizrahi M, Khushman M. Usefulness of restaging pelvis magnetic resonance imaging after neoadjuvant concurrent chemoradiotherapy in patients with locally advanced rectal cancer. *Clin Colorectal Cancer.* 2020 Dec;19(4):e281-e287.

Hunter J, Alkharabsheh O, Patel GK, Fabregas JC, Singh AP. The impact of neoadjuvant concurrent chemoradiation on exosomal markers (CD63 and CD9) expression and their prognostic significance in patients with rectal adenocarcinoma. *Oncotarget.* 2021 Jul 20;12(15):1490-1498.

Hunter JL, Alemayehu H. Small intestinal obstruction. In: Lacher M, St. Peter SD, Zani A, editors. *Pearls and tricks in pediatric surgery.* Cham, Switzerland: Springer; 2021. Chapter 22, p. 155-160.

Manne A, Mulekar MS, Escobar D, Alsayed A, Sharma G, Prodduturvar P, Khushman M, Howard JH, Gilber R, Alkharabsheh O. Clinical and hematological predictors of high-grade immune-related adverse events associated with immune checkpoint inhibitors. *J Clin Med Res*. 2021 May;13(5):268-275.

Morrison ZD, Reyes-Ferral C, Mansfield SA, Alemayehu H, Bowen-Jallow K, Tran S, Newman EA. Diversity, equity, and inclusion: a strategic priority for the American Pediatric Surgical Association. *J Pediatr Surg*. 2021 Apr;56(4):641-647.

Mullins CH, Gleason F, Wood T, Baker SJ, Cortez AR, Lovasik B, Sandhu G, Cooper A, Hildreth AN, Simmons JD, Delman KA, Lindeman B. Do internal or external characteristics more reliably predict burnout in resident physicians: a multi-institutional study. *J Surg Educ*. 2020 Nov-Dec;77(6):e86-e93.

Quang KT, Hunter JL, Wilson JW, Simmons JD. Choledochal cyst originating from the cystic duct. *Am Surg*. 2021 Jan;87(1):154-155.

Richards W, Khaitan L, Torquati A. Morbid obesity. In: Townsend Jr CM, Beauchamp RD, Evers BM, Mattox KL, editors. *Sabiston textbook of surgery: the biological basis of modern surgical practice*. 21st ed. St. Louis: Elsevier; Chapter 48, p. 1167-1195.

Ricks WA, Alemayehu H. Aspiration of a bullet after a gunshot wound to the face. *J Pediatr Surg Case Rep*. 2020 Oct;101616.

Roberts CE, Ricks WA, Roy JD, Hartin CW, Alemayehu H. Testicular workup for ischemia and suspected torsion in pediatric patients and resource utilization. *J Surg Res*. 2021 Jan;257:406-411.

Rudd AB, Davis A, Butts CC. Presentation, management, and women's health implications of pilonidal disease. *Nurs Women's Health*. 2021 Aug;25(4):312-318.

Simmons MT, Beckett AR, Cato PJ, Lightfoot RW, Brooks RM. Traumatic radial artery pseudoaneurysm: vein graft repair through a single incision. *Plast Reconstr Surg Glob Open*. 2020 Nov 23;8(11):e3182.

Song H, Bergman A, Chen AT, Ellis D, David G, Friedman AB, Bond AM, Bailey JM, Brooks R, Smith-McLallen A. Disruptions in preventive care: mammograms during the COVID-19 pandemic. *Health Serv Res*. 2021 Feb;56(1):95-101.

Strong EA, Park SH, Ethun CG, Chow B, King D, Bedi M, Charlson J, Mogal H, Tsai S, Christians K, Tran TB, Poultsides G, Grignol V, Howard JH, Tseng J, Roggin KK, Chouliaras K, Votnaopoulos K, Cullinan D, Fields RC, Gamblin TC, Cardona K, Clarke CN. High neutrophil-lymphocyte ratio is not independently associated with worse survival or recurrence in patients with extremity soft tissue sarcoma. *Surgery*. 2020 Oct;168(4):760-767.

Sujka JA, Dekonenko C, Millsbaugh DL, Doyle NM, Walker BJ, Leys CM, Ostlie DJ, Aguayo P, Fraser JD, Alemayehu H, Peter SDS. Epidural versus PCA pain management after pectus excavatum repair: a multi-institutional prospective randomized trial. *Eur J Pediatr Surg*. 2020 Oct;30(5):465-471.

Wiseman JT, Ethun CG, Cloyd JM, Shelby R, Suarez-Kelly L, Tran T, Poultsides G, Mogal H, Clarke C, Tseng J, Roggin KK, Chouliaras K, Votanopoulos K, Krasnick B, Fields R, Walle KV, Ronnekleiv-Kelly S, Howard JH, Cardona K, Grignol V. Analysis of textbook outcomes among patients undergoing resection of retroperitoneal sarcoma: a multi-institutional analysis of the US Sarcoma Collaborative. *J Surg Oncol*. 2020 Nov;122(6):1189-1198.

## II. PUBLISHED ABSTRACTS

Batra M, Alemayehu H, Hartin C, Eyal F, Zayek M. Trends of gastroschisis in Southwest Alabama over 27 years. *J Investig Med*. 2021 Feb;69(2):637. Abstract no. 553.

Caposole M, Cox C, Richards W. Endoscopic rendezvous procedure as a tool for chronic anastomotic leak in the bariatric patient. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. Q 35.

Caposole M, Cox C, Richards W. Recovery after severe pancreatic necrosis and treatment of pancreatic fistula with drainage and pancreatic duct stenting. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. Q 38.

Cherla DV, Fonseca AL. Association of Medicaid expansion with receipt of palliative therapies in metastatic pancreatic cancer: a National Database Study. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta Ga. Abstract no. 34.

Cherla DV, Fonseca AL. Rural-urban disparities in the treatment of pancreatic adenocarcinoma treatment: a review of the NCDB Database. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. 35.

Doll A, Grimm L. Congenital intraperitoneal and medialized descending colon with adhesive bands and resultant large bowel obstruction in an adult patient. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. C 4.

Farley P, Mullen PR, Buckley CT, Taylor CN, Lee YL, Butts CC, Simmons JD, Kinnard CM. Cryoablation for chest wall trauma: who, how, and why? Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. Q 214.

Farley P, Salisbury DR, Murfee JR, Buckley CT, Mbaka MI, Polite NM, Kinnard C, Butts CC, Simmons JD, Lee YL. Serum sodium and serum osmolality as clinical markers of outcome in traumatic brain injury. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. Q 109.



Farley P, Salisbury DR, Murfee JR, Buckley CT, Polite NM, Mbaka MI, Butts CC, Simmons JD, Lee YL. The relationship between serum sodium and serum osmolality and intracranial pressure in patients with traumatic brain injury treated with hypertonic saline and mannitol. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. 62.

Jafar B, Reno A, Bhat R, Alemayehu H, Zayek M. Rare thoracoabdominal anomalies in a neonate with 22q11.2 microdeletion. J Investig Med. 2021 Feb;69(2):601. Abstract no. 462.

Manjunath C, Olson C, Weaver K, Foust A, Alemayehu H. Acute appendicitis in association with pneumatosis coli: a case series. J Investig Med. 2021 Feb;69(2):624. Abstract no. 519.

Mullen P, Farley P, Ding L, Kinnard C, Lee Y, Simmons J. Severe quadruple gastric injury in the setting of a five-story fall – an uncommon presentation. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. Q 154.

Mullen PR, Murfee JR, Taylor CN, Tan YB, Farley P, Bright A, Kinnard C, Polite N, Lee YL, Mbaka MI, Simmons JD, Kyriazis DK, Maltese C, Butts CC. Blunt pulmonary artery rupture, aortic injury, and traumatic ventricular septal defect: a rare injury pattern and unique surgical management. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. Q 155.

Mullen PR, Roy DJ, Hartin CW, Alemayehu H. Thoracoscopic left upper lobectomy for congenital lobar emphysema and bronchogenic cyst excision. International Pediatric Endosurgery Group 2021 Annual Meeting; 2021 Jun 11 & 14; Los Angeles, CA. p. 26. Abstract no. V046.

Pardue K, Farley P, Polite N, Mbaka M, Bright A, Kinnard C, Simmons J, Butts C. The presence of blunt diaphragmatic injuries may be more common than expected. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. Q 131.

Roy J, Hardy W, Stahl J, Roberts M, Simmons J, Butts C, Barber W. Reducing healthcare burden of emergency general surgery with a 24-hour dedicated EGS services. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 21-24; Atlanta, GA. Abstract no. 11.

### **III. PUBLISHED BOOKS**

### **IV. INVITED PRESENTATIONS**

Bright A. Invited speaker. Trauma pearls – applications for primary care. Tennessee Osteopathic Medical Association; 2021 Apr 10; Fairfield, TN.

Butts CC. Invited speaker. Adhesive small bowel obstruction: which way to go. Alabama Chapter of the American College of Surgeons; 2021 Jul 9; Gulf Shores, AL.

Butts C. Invited speaker. Adhesive small bowel obstruction: which way to go. Brookwood Baptist Surgery Grand Rounds; 2021 Jul 28; Birmingham, AL.

Fonseca A. Invited speaker. Colorectal cancer: the role of surgery [virtual presentation]. University of South Alabama Med School Café; 2021 Mar 30; Mobile, AL.

Grimm L. Invited speaker. Mentorship and leadership: perspectives from a program director [virtual presentation]. American Society of Colon & Rectal Surgeons 2021 Annual Scientific Meeting; 2021 Apr 24; Bannockburn, IL.

Howard H, Liles S. Invited speakers. What the pandemic has taught us and what we can build upon [virtual presentation]. Alabama Healthcare Leadership Summit; 2021 Feb 5; Montgomery, AL.

Hunter J. Invited speaker. Management of diverticulitis in 2021. Alabama Chapter of the American College of Surgeons; 2021 Jul 9; Gulf Shores, AL.

Hunter JD. Invited speaker. Colorectal cancer awareness [virtual presentation]. University of South Alabama Med School Café; 2021 Mar 22; Mobile, AL.

Hunter R. Invited speaker. Breast cancer: risk factors, screening guidelines & risk reduction [virtual presentation]. University of South Alabama Med School Café; 2021 Feb 2; Mobile, AL.

Richards WO. Invited speaker. For the people and the profession. Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 22; Atlanta, GA.

Weaver K. Invited speaker. The time has come! Bariatric surgery for adolescents. Alabama Chapter of the American Academy of Pediatrics Annual Meeting and Fall Pediatric Update; 2021 Sep 26, Birmingham, AL.

## **V. NATIONAL PROFESSIONAL RECOGNITION**

Alemayehu H. Panelist, Association of Women Surgeons South Region Conference 2021 Beyond the Operating Room – Mentoring and Engaging in the Surgical Community –Feb 2021

Alemayehu H. Mentoring Panel, AWS South Regional Conference, Mentoring and engaging in the surgical community, 2021

Alemayehu H. Mentoring Panel, SNMA at USA COM Physician of Color 2021

Alemayehu H. Session Moderator, American Academy of Pediatrics Virtual Annual Meeting 2020 Cultural Competency/Implicit Bias/Gender Equity Symposium Oct 2020

Alemayehu H. Member, Research Committee of the International Pediatric Endosurgery Group

Alemayehu H. Member, Diversity, Equity, and Inclusion Committee of the American Pediatric Surgical Association

Alemayehu H. Member, Community Engagement Working Group of the American Pediatric Surgical Association

Bright A. Member, The Euro-Mediterranean Council for Burns, Fire Disasters

Chang M. Chair of the American College of Surgeons Trauma Quality Improvement Program (TQIP)

Chang M. Member and Secretary of the Mobile County Board of Health

Dyess L. Governor, Alabama Chapter American College of Surgeons

Dyess L. Member, Executive Council Alabama Chapter American College of Surgeons

Fonseca A. Moderator, Academic Surgical Congress virtual meeting, February 2021

Fonseca A. Moderator, Americas Hepato-Pancreatico-Biliary Association meeting, Miami Florida 2021

Fonseca A. Member, Program Committee, Association for Academic Surgery

Fonseca A. Member, Outreach Committee, Association of Women Surgeons

Fonseca A. Member, Diversity and Inclusion Liaison Committee of the Society of Surgery of the Alimentary Tract.

Fonseca A. Member, Diversity, Equity and Inclusion Committee, Southeastern Surgical Congress.

Grimm L. Secretary, Alabama Chapter of the American College of Surgeons. July 2021

Grimm L. Member, Executive Council, Alabama Chapter of the American College of Surgeons. July 2021

Heslin M. Member-at-large, Executive Council, Alabama Chapter of American College of Surgeons

Howard H. Moderator, Society of Surgical Oncology Upper Gastrointestinal Virtual Forum 2021 Mar 22.

Liles S. Treasurer, Alabama Chapter of American College of Surgeon; July 2020 July 2022.

Liles S. Moderator, Society of Surgical Oncology Upper Gastrointestinal 2021 Mar 19, Virtual Forum

McMahon D. Principal Investigator, A study to evaluate the effectiveness of allogeneic micronized amniotic membrane product for the treatment of hidradenitis suppurativa.

Richards WO. Moderator, Hamlin Lecture, Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 22; Atlanta, GA .

Richards WO. Moderator, Plenary Session 1, Southeastern Surgical Congress 2021 Annual Meeting; 2021, Aug 22, Atlanta, GA

Richards WO. Moderator, Feliciano-Rozycki Historical Lecture, Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 22; Atlanta, GA.

Richards WO. Moderator, Agility in surgical quality improvement. State of the Art Lecture Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 23, Atlanta, GA .

Richards WO. Moderator, Roger T. Sherman Lecture, Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 23; Atlanta, GA

Richards WO. Moderator, Henry L. Laws II Lecture, Southeastern Surgical Congress 2021 Annual Meeting; 2021 Aug 23; Atlanta, GA.

Richards WO Member of the American College of Surgeons Video-Based Education Executive Committee- Subcommittee on “ICONS” in Surgery

Richards WO. Member-at-Large, Executive Council, Alabama Chapter of American College of Surgeons

Richards WO. President, Southeastern Surgical Congress, February 2020-August 2021

Rider P. President, Alabama Chapter of American College of Surgeons; July 2020 July 2021

Rider P. Session Moderator, VE309 General Surgery IV- Colorectal, American College of Surgeons Clinical Congress, Video Education Session; 2021 Oct 8; Virtual

Simmons J. Chair, Alabama Legislative Funding Committee, 2019-present.

Simmons J. Committee on Trauma (COT) – Vice Chair, State of Alabama. 2016-present

Simmons J. Scholarship Committee – AAST. 2019-2021.

Simmons J. Alabama Statewide Trauma & Health Systems Advisory Council (STAC). 2018-present.

Simmons J. Alabama State Emergency Medical Control Committee (SMECC). 2015-2022

Simmons J. Councilor, AOA Medical Honor Society (2016-current)

## **BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

**Medical Student Education:** The Department of Surgery continues to have a leadership role in all aspects of student education. In 2020, Dr. Linda Ding relinquished her position as Clerkship Director to take a position in Seattle, Washington. John Hunter, MD, and Caleb Butts, MD were named as the Co-Directors of the Surgery clerkship.

The students on average are performing much better compared to national performance. We attribute the excellent performance in the ME scores, and in the 100% match into general surgical residency programs, to the curriculum teaching of the co-directors of the clerkship in the faculty at the Department of Surgery. Drs. Caleb Butts and John Hunter have chosen a new textbook and spread students out over more services so that they can obtain more individualized attention. In addition, we have implemented more stimulation and exercises out of the high stress OR environment. Dr. Hunter created virtual work from home for the third-year students and enabled all the third-year students to achieve the goals of the clerkship.

The DOS also implemented a visiting student diversity scholarship to support students underrepresented in Medicine to do a surgical Acting Internship at USA. Dr. Alemayehu was instrumental in designing and implementing the new program and successfully recruited a student who had a very positive experience.

In May 2021, the graduating senior medical students recognized 13 surgical faculty with red sash awards: Drs. Hanna Alemayehu, Ron Brooks, Caleb Butts, Linda Ding, Lee Grimm, John Hunter, Harrison Howard, Spencer Liles, Maryann Mbaka, Daniel McMahon, William Richards, Fred Silver, and Jon Simmons. The red sash award is given to faculty members for their significant contributions to the graduating medical students' education.

**Leadership:** USA surgeons have been prominent in surgical leadership both nationally and locally. Dr. Paul Rider recently completed his year as president of the Alabama Chapter of the American College of Surgeons and also serves on the American College of Surgeons video-based education committee. Dr. Spencer Liles was elected to serve as the treasurer of the Alabama chapter of the American College of Surgeons. Dr. Lee Grimm was selected to be the secretary of the Alabama Chapter of the American College of Surgeons. Drs. Richards, Heslin, Rider and Dyess, Liles, Grimm all serve on the Executive Council for the Alabama American College of Surgeons.

Dr. William Richards served as president of the Southeastern Surgical Congress from Feb. 2020 to August 2021. Dr. John Simmons served as a member of the research

committee of the Southeastern Surgical Congress and Dr. Annabelle Fonseca served as a member of the Diversity, Equity and Inclusion committee for the Southeastern Surgical Congress.

Dr. Michael Chang, the Chief Medical Officer for USA Health, serves as Chair of the American College of Surgeons Trauma Quality Improvement Program (TQIP) and has been appointed as the Secretary of the Mobile County Board of Health.

**General Surgery Residency Training:** In the 3 years Dr. Grimm has been the program Director of the General Surgery residency training program, we have witnessed advances in academics, ABSITE performance, and educational activities of the Department. The graduating residents continue to match into competitive fellowship programs or to successfully transition to private practice in general surgery. In 2020, Dr. Grimm applied to the RRC to expand the general surgical residency from 5 categorical residents to 6 categorical residents per year. In March 2021, we matched 6 new PGY 1 categorical residents and successfully added residents to fill out the PGY 2nd and 3rd and 4th year classes with 6 categorical residents. Drs. Hanna Alemayehu and Harrison Howard continued as Associate Program Directors and added immensely to the education of the general surgery residents. Dr. Howard stepped in as the chair of the Clinical Competency Committee of the General Surgery Residency program and Dr. Alemayehu did a formal review of the program, citing the overall excellence of the program, but also focusing on areas where we can improve.

Dorothy Dickinson resigned from her position as the General Surgery Residency and Program Coordinator to take a job in Nashville. Tyronda Rogers stepped into this position, and we recruited Cynthia Dennis into the Assistant Program Coordinator for General Surgery and is also the Program Coordinator for the Surgical Critical Care Fellowship Program. Both have done outstanding jobs in running these training programs and fostering a culture of excellence, comradery, inclusion, and success.

**Recruitment:** Key fellowship-trained faculty were added in Surgical Oncology (Rachel Hunter) Pediatric surgery (Katrina Weaver), Plastic/reconstructive surgery (Kelsey McKee), Trauma/Surgical Critical Care/Acute Care Surgery (Nathan Polite, Maryann Mbaka, Ashley Williams) and in General Surgery (Dan McMahan).

**Division of Traumatology/Surgical Critical Care/Acute Care Surgery:** During the past 3 years, Dr. Simmons has recruited more faculty to the Division, expanded the number of patients seen through decrease in diversion time, and expansion into additional critical care coverage in the Neuro ICU. With the addition of Dr. Ashley Williams in September 2021, and the addition of Dr. Nathan Polite in January 2021 and Dr. Maryann Mbaka, the division has expanded to a total of 10 faculty members.

Dr. Simmons has continued to provide leadership both within the state and national organizations and served as the vice chair state of Alabama American College of Surgeons Committee on Trauma and is a member of the Alabama statewide Trauma and Health Systems Advisory Council. In addition, Dr. Simmons is a member of the scholarship committee for the American Association Surgery of Trauma. Dr. Brevard directed multiple

courses of Advanced Trauma Life Support Training and hosted the regional competition the Alabama Chapter of the American College of Surgeons Committee on trauma resident paper competition.

Dr. Sid Brevard stepped down as the director of the surgical critical care fellowship and Dr. Chris Kinard took over this directorship. Dr. Nathan Polite took over the job of the assistant program director.

**Burn Surgery:** Dr. Andrew Bright is in his third year as the director of the Arnold Luterman Regional Burn Center and has done a fantastic job continuing the excellence in clinical care. With the help of Drs. Caleb Butts and Sid Brevard, the burn unit continued to grow in number of patients seen and treated, as well as continuing the excellent quality of care as measured by the observed-to-expected mortality (O/E ratio). Seminal studies performed by Dr. Bright in the use of chemical debridement of burn wounds using Nexobrid have shown dramatic improvement in improved debridement specificity, mitigation of septic response, and mitigation of blood loss associated with surgical debridement.

**Pediatric Surgery:** Chip Hartin, M.D. FACS, has been Chief of the Division since July 2016 and he has done a remarkable job recruiting excellent faculty into the division, expanding the number of surgical cases, improving patient care, and improving the educational experience for residents and students. Dr. Alemayehu has been very influential in general surgery residency training through her work on mock orals, improving interviews for prospective residents, and serving as one of the Associate Program Directors in the General Surgery resident training program. Dr. Weaver started a pediatric bariatric surgery program and has added greatly to the clinical and academic success of the Division through improvements in pediatric trauma and burn care. Drs. Hartin, Alemayehu, and Weaver have reinvigorated medical student and resident teaching on the pediatric surgery service, achieving high levels of resident and medical student satisfaction with their educational experience. Drs. Weaver and Alemayehu trained on the DaVinci robot system and have started a robust robotic pediatric surgery program.

**Colorectal Surgery:** Dr. Rider, now in his sixth year as the Chief of the Division of Colorectal Surgery, has continued the development of the colorectal surgery division. Dr. Rider also served as President of the Alabama Chapter American College of Surgeons this past year. Drs. Grimm and Rider developed the multidisciplinary colorectal cancer multidisciplinary tumor conference (MDT) in collaboration with radiation and medical oncologists in order to provide improved cancer care in the region. Since establishment of the colorectal cancer MDT in October 2015, this multi-disciplinary team has treated hundreds of patients. The team has just undergone a site visit for recognition as a rectal cancer Center of Excellence. More than half of the patients came to USA from outside Mobile to obtain expert care for their colorectal cancer.

**General Surgery:** The Charles and Mary Rodning endowment for the educational activities of our residents has proved to be instrumental in funding travel for surgical residents and faculty to present their scientific work at regional and national meetings.

One of the major improvements in resident autonomy and education was creation of a Chief Resident Clinic, which is run by the PGY 5 Chief Resident with close attending supervision. This allows the chief residents to run their own clinic and increase their decision-making in preparation for complete autonomy. There has been substantial improvement in quality of general surgical services, which includes our gastrointestinal, colorectal and oncologic surgery divisions, as measured by the Vizient observed-to-expected mortality being substantially better than expected. This better than average performance has been an accomplishment made possible through excellence in provision of patients care by all the surgeons, residents, and clinical staff of the DOS.

John Hunter, M.D., continued as the director of the Robotic Surgery at USA and has been instrumental in maintaining the robotic simulation system, as well as training and helping to proctor Drs. Dan McMahon at University Hospital and Katrina Weaver at Children's and Women's Hospital.

**Breast and Endocrine:** Drs. Spencer Liles and Lynne Dyess, MD serve as co-directors of the Breast Cancer Multidisciplinary Conference, and both Drs. Liles and Dyess have moved to the Strada Patient Care Center where they have increased their clinical load substantially. Nurse practitioner clinics were added so that they can provide long-term care for breast cancer patients, as well as starting a new thyroid clinic for evaluation and treatment of thyroid lesions. Dr. Racheal Hunter, a graduate of USA general surgery residency, was recruited back to Mobile after she finished a Surgical Oncology Fellowship in Breast Cancer at Vanderbilt University. Additionally, Dr. Dyess serves as the Governor representing the State of Alabama Chapter of the American College of Surgeons to the National ACS Organization.

**Plastic and Reconstructive Surgery:** Ron Brooks, M.D., in his fifth year as faculty member, established himself as an expert plastic and reconstructive surgeon who was able to collaborate with many of our faculty in the care of trauma, cancer, and infectious wounds. He has added very valuable expertise in reconstruction after breast cancer, melanoma, and rectal cancer surgery. Dr. Curtis Harris continues to provide expert care on patients needing plastic and reconstructive surgery. Kelsey McKee, M.D., has been recruited to join the faculty in plastic/reconstructive surgery in September 2020. She is one more example of an outstanding graduate of the USA general surgery training who has trained in plastic surgery at University of Indiana.

**Gastrointestinal and Bariatric surgery:** The Bariatric surgery program continues to increase the number of operative cases and has less than 0.1% operative mortality rate, while continuing to operate on patients who have a host of co-morbidities. Complex Bariatric, and GI surgical procedures are increasingly being performed using the Da Vinci robotic system.

**Surgical Oncology:** Dr. Liles was also recruited to be one of the Chief Medical Information Officers for USA Health. This entailed working with IT to improve the electronic health record (EHR) support of hardware and software to optimize our ability to



care for patients. Annabelle Fonseca, MD and Harrison Howard, MD joined the Department in October 2018. Harrison Howard, MD has added significantly to treatment of patients with sarcoma, parotid tumors, and melanoma. Dr. Fonseca has added expertise in the treatment of pancreatic and liver tumors. She has trained in robotic pancreatic and liver surgery and has started to use the DaVinci robotic system to perform solid organ resection in a minimally invasive fashion.

Marty Heslin, MD was recruited from UAB to serve as the Director of the USA Health Mitchell Cancer Institute. Dr. Heslin has already made a huge impact within the entire system and continues to provide services as a skilled surgical oncologist. He has formulated plans to support research fellowship for general surgical residents training at the University of South Alabama.

**Humanitarian Efforts:** Because of the COVID-19 pandemic, the mission trip to Rwanda in 2021 did not occur. Dr. Andrew Bright gave the oath of office for the senior medical students graduating in May 2021 and served as the faculty advisor for the Medical Military Interest Group, which has as its aims to: improve awareness, resources, networking, and community service.

**Research:** The research collaboration between Jon Simmons, MD and the Chair of Pharmacology, Mark Gillespie, PhD., has been very fruitful. Dr. Jon Simmons has completed the 5-year K08 Mentored Clinical Scientist Award from the NIH directed at a surgeon in the early stages of their career who shows promising development as a surgeon scientist. The grant entitled “mtDNA DAMPS: A Pharmacologic Target in Multi-Organ System Failure” aims to explore a potential pharmacologic treatment that addresses the underlying etiology of remote organ failure in trauma and sepsis. Amazing science is coming from this collaborative effort, which is also incorporating surgical residents such as Dr. Colin Buckley a PGY2 resident in surgery who has taken a year away from clinical training to work in Dr Simmons’ lab.

In summary, the Department of Surgery faculty are collaborating with basic scientists at the MCI, the University and with the College of Medicine basic science departments in a wide range of research activities. Multiple grant proposals have been submitted, which has resulted in funding for several projects and with many promising reviews. These research projects, which are primarily clinical translational research, demonstrate the wide range of clinical expertise in critical care, shock; the faculty in the Department has developed gastrointestinal physiology, cancer, and wound healing. Increasingly, the Department of Surgery is recognized for our expertise in the care of trauma, burns, colorectal cancer, hepatic-pancreatic-biliary cancer, breast cancer, melanoma, and esophageal disorders.

**2020-2021**  
**Summary of Activities**  
**USA Center for Lung Biology**

General Operations

The CLB's mission is to provide state-of-the-art scientific development in lung biology that advances the understanding of human health and disease, to improve patient care, and to serve as the foundation for outstanding graduate, post-graduate, and fellowship training. More than 40 faculty members and 45 graduate students, postdoctoral fellows and pulmonary fellows from various departments within the College of Medicine are actively participating in a strong collaborative research environment, a research seminar series and journal club, and graduate, postdoctoral and fellowship training.

We have continued to update our CLB website along with the College of Medicine. Our administrative offices are located in the Medical Sciences Building in Rooms 3340 on the main University campus. Ms. Jennifer Collins serve as support staff for the CLB and is responsible for clerical duties for the administrative office and research laboratories.

Detailed information about the CLB is available with a click on our homepage (<https://www.southalabama.edu/colleges/com/research/lung-biology/>). The web page is interactive and contains a variety of information including faculty and student bibliographies, recent publications, and information regarding scientific and training programs. Our annual report is available through Ms. Jennifer Collins (460-7086) at the CLB office.

Research Activities

The CLB was well represented at national and international scientific meetings with a number of faculty, postdoctoral fellows, and graduate students presenting their work at multiple forums, including the American Heart Association, Federation of American Societies for Experimental Biology, XXIX Congress of the International Society for Advancement of Cytometry, American Physiological Society, Southern Biomedical Engineering Conference, Gordon Conference, and the International American Thoracic Society.

Our Critical Care Conference series in conjunction with the Pulmonary Division hosted five speakers. This conference focuses on translational research and acute lung injury, and is held monthly on Fridays at 2:00 pm. CLB faculty members presented this year's series.

Dr. Troy Stevens, Professor and Chair, Department of Physiology and Cell Biology, presented *Update on Amyloid and Critical Illness*; Dr. Glen Borchert, Associate Professor, Department of Pharmacology, presented *Novel Small RNA Regulations SARS-CoV-2*; Dr. Michael Francis, Assistant Professor, Department of Physiology and Cell Biology, presented *Endothelial cell-specific reporter rat and vascular remodeling in pulmonary hypertension*; Dr. Jon Simmons, Professor, Department of Surgery, presented *Deleterious Effects of Plasma-Derived Cellular*

*Debris*; Dr. Raymond J. Langley, Assistant Professor, Department of Pharmacology present *Metabolomic Endotypes and Nutrition in Patients with Acute Respiratory Failure*.

### Extramural Funding

In the past year, CLB principal investigators submitted 85 grant applications to the American Heart Association (AHA), National Institutes of Health (NIH), and other foundations/industries. To date, eleven applications from the previous fiscal year were awarded generating over \$4.2 million in new revenue over the next five years.

Dr. Mikhail Alexeyev, Professor, Department of Physiology and Cell Biology received the following two awards: DoD Discovery Award entitled, *Defining the molecular composition of the interspecies barrier for mitochondrial DNA replication* and DoD Expansion Award entitled, *Towards humanized mouse models of mitochondrial disease*. Dr. Glen Borchert, Associate Professor, Department of Pharmacology received the following two awards NSF COVID-19 Supplemental Funding entitled, *RAPID: Exosomal tRNA fragments constitute an innate viral defense* \*supporting two summer students and NSF BIO COVID-19 Supplemental Funding entitled, *RAPID: Exosomal tRNA fragments may constitute an innate viral defense against SARS-CoV-2 and other respiratory RNA viruses*. Jeffrey DeMise, Incoming Graduate Student, Department of Pharmacology (Mentor-Dr. Glen Borchert) received the following award AL-EPSCoR Fellowship entitled *Graduate Research Scholars Program (GRSP) Awards (Round 16)*. Grant Daly, Graduate Student, Department of Pharmacology (Mentor-Dr. Mark Gillespie received the following AHA Predoctoral Fellowship Award entitled, *Oxidative Mitochondrial DNA Damage in the Propagation of Ischemia-Reperfusion Injury and its Long-term Consequences*. Dr. Ji Young Lee, Assistant Professor, Department of Physiology and Cell Biology and Internal Medicine received the following two awards: an AHA COVID Impact Supplement entitled, *Carbonic anhydrase IX and pulmonary endothelial cell acidosis during infection*, returned to accept the NIH K08 funding and an NIH K08 Award entitled, *Carbonic anhydrase IX and pulmonary endothelial cell acidosis during infection*. Dr. Wito Richter, Assistant Professor, Department of Biochemistry received an RDCGP Award (Internal Award) entitled, *PDE4C - the missing piece to understanding PDE4 enzyme functions*. Dr. Mark Taylor, Professor, Department of Physiology and Cell Biology received the following NIH R01 Award entitled, *Network signature of low-flow endothelial dysfunction*. Dr. Mark Gillespie, Professor and Chair, Department of Pharmacology, received the following NIH R21 (subcontract with UAB Dr. Sadis Matalon) entitled, *Mitigation of Chlorine Injury to Mitochondria*.

We had two faculty receive Intramural Research grants through the College of Medicine, Dr. Glen Borchert, Associate Professor, Department of Pharmacology entitled, *Salmonella sRNAs drive the decision between active stress resistance and persist cell dormancy* and Dr. Sarah Sayner, Associate Professor, Department of Physiology and Cell Biology entitled, *Role of AC10 in gender disparities associated with ARDS*.

We had two graduate students receive Dean's Fellowships awards through the College of Medicine: Lina Abou Saleh, Department of Biochemistry (Mentor Dr. Wito Richter) entitled, *Targeting cAMP-phosphodiesterase 4 as a Therapeutic Approach in Cystic Fibrosis* and Jenny

Hewes, Department of Pharmacology (Mentor Dr. Natalie Bauer) entitled, *Pro-inflammatory Extracellular Vesicles in Pulmonary Arterial Hypertension and their Biological Fate*.

### Education

During this academic year, 23 predoctoral fellows trained in the laboratories of CLB faculty and other affiliated with the Lung Biology track in the Basic Medical Sciences Doctoral Program. Three Lung Biology trainees completed requirements for the Ph.D. within this academic year (Lina Abou Saleh, Dominika Houserova, and Sarah Voth). Lina has moved to Texas with her family and currently interviewing with UT Southwestern and UT Dallas; Dominika Houserova is a Postdoctoral Fellow at the University of South Alabama in the Department of Pharmacology; and Sarah Voth is a Postdoctoral Fellow at Yale University School of Medicine in the Department of Internal Medicine.

Three Lung Biology trainees are supported by individual predoctoral fellowships (Lina Abou Saleh-COM Intermural Grant, Jenny Hewes- COM Intermural Grant and Althea deWeever-NIH P01 Diversity Administrative Supplement).

**2020-2021**  
**Summary of Scholarly Activities**  
**Center for Healthy Communities**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

Crook ED, Crook CE, Arrieta MI, Hanks RS. Health disparities and their impact on community health. In: Mpofu E, editor. Sustainable community health: systems and practices in diverse settings. Cham, Switzerland: Palgrave Macmillan; 2020. Chapter 2, p. 39-70.

**II. PUBLISHED ABSTRACTS**

Arrieta MI, Parker LL, Bonner CM, Sobol RW. Engagement and co-creation in a DNA integrity cohort study. J Clin Transl Sci. 2021 Mar;5(Suppl 1):75-76. Abstract no. 46920.

Arrieta MI, Parker LL, Carter MD, Hanks RS, Crook ED. Racial injustice perceptions reawakened by the COVID-19 pandemic. J Investig Med. 2021 Feb;69(2):536. Abstract no. 294.

**III. PUBLISHED BOOKS**

Arrieta MI, Parker LL, Carter MD, Hanks RS, Crook ED. Perceptions, needs, challenges and insights of an underserved community in the COVID-19 pandemic. Mobile, AL: University of South Alabama Health Center for Healthy Communities; 2021. 51 p. Available from: <https://www.southalabama.edu/colleges/com/research/healthy-communities/resources/covid-report-small.pdf>

**IV. INVITED PRESENTATIONS**

Arrieta MI. Invited speaker. Health services industry in the age of COVID. Leadership Mobile Class of 2021 Community Day Focus, Environmental Justice Panel; 2021 Jan 4; Mobile, AL.

Arrieta MI. Invited speaker. Qualitative study of COVID-19 experiences of an underserved community [virtual presentation]. United Way of Southwest Alabama Community Resource Network; 2021 Mar 3; Mobile, AL

Arrieta MI. Invited speaker. Experiences of the COVID-19 pandemic in underserved communities [virtual presentation]. Southern All of Us Community Engagement Training Sessions; 2021 May 7; Mobile, AL.

Arrieta MI. Invited speaker. Experiences of the COVID-19 pandemic in underserved communities [virtual presentation]. Southern All of Us Community Engagement Training Sessions; 2021 May 14; Mobile, AL.

Crook E. Invited speaker. From bench to community: understanding health disparities before, during and after COVID-19 [virtual presentation]. Alabama Academy of Science; 2021 Mar 18; Birmingham, AL.

Crook E. Invited speaker. Health equity and the social determinants of health. Gulf Coast Organization of Nursing Leadership; 2021 Jul 22; Mobile, AL.

Crook E. Invited speaker. Renal manifestations of diabetes and obesity disparities and how to resolve them. Mississippi Health Disparities Conference 2021; 2021 Aug 4; Biloxi, MS.

Crook E. Invited speaker. Details about the latest on COVID-19 and vaccine education [virtual presentation]. University of South Alabama Talk Thursday; 2021 Aug 19; Mobile, AL.

Freed C, Hanks RS, Lio S, Arrieta M. Invited speakers. Differences in perceptions of and responses to COVID-19: bridging generational and community knowledge gaps [virtual presentation]. Generations United 2021 Virtual Global Intergenerational Conference; 2021 Jun 17; Washington, DC.

Freed C, Hanks RS, Shoon S, Parker LL, Carter MD, Arrieta M. Invited speakers. The lived experience of the COVID-19 pandemic among individuals known to be affected by health disparities [virtual presentation]. 71<sup>st</sup> Society for the Study of Social Problems Virtual Annual Meeting; 2021 Aug 5; Chicago, IL.

## **NATIONAL PROFESSIONAL RECOGNITION**

Errol Crook. Recipient, Wright Gardner Award. Alabama Academy of Sciences.

## **V. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

Led by Dr. Errol Crook, the University of South Alabama Center for Healthy Communities continues to foster partnerships with community and academic partners as well as other stakeholders. The Center's efforts are focused on research and community engagement. We have maintained NIH funding via projects outlined in the Research Core section. We have continued membership in a consortium of similar academic centers in Alabama, Mississippi, and Louisiana organized under the UAB CCTS. The Center had taken a leadership role as a partner of the CTSA community engagement efforts.

A brief summary of our research and community engagement efforts are outlined below.

### **Research:**

The Research Core, led by Dr. Martha Arrieta, has continued to focus on providing support to the research projects within the Center.

- 1) We are a member of the Southern All of Us Network, a consortium of Academic partners across Alabama, Mississippi and Louisiana. The All of Us study is an NIH sponsored trial that will enroll one million participants to make precision medicine a

- reality. Dr. Crook is the site PI for this program and enrollment was robust until halting those efforts in response to the COVID-19. In March 2021, enrollment was relaunched by appointment only. A kiosk installed in the Strada Patient Care Center also provides another option for enrollment or for enrolled participants to check their accounts.
- 2) The Center continues work under a sub-award on the 5-year project investigating DNA damage and repair capacity in partnership with Dr. Robert Sobol at the USA Health Mitchell Cancer Institute. Dr. Arrieta is the lead in recruiting the cohort via community engaged methods. As of August 2021, 159 participants had been enrolled into the study with the first two participants returning for their second follow-up.
  - 3) The Center received a sub-award from the NIH Community Engagement Alliance Against COVID-19 Disparities (CEAL) award to the University of Alabama at Birmingham. The project focuses COVID-19 awareness and misinformation, mistrust and misconceptions, and barriers to participation in clinical trials. As a part of the Sub-award, the Center established a Strategic Planning Board (SPB) to formulate strategies for addressing the needs in the community in relation to the projects focus. The SPB chose to focus on vaccine education, with the first step of conducting focus groups to learn more about community attitudes and the vaccine. These efforts have also led to partnerships with area churches to organize vaccine events.

#### **Community Engagement:**

Roma Hanks, PhD, directs the Community Engagement Core. The two main components of this core are The Community Health Advocate (CHA) Program and The Pipeline Program.

Our CHA program continues with many of the CHAs providing long-term service and leadership in their community in the form of health advocacy through education and health initiatives. In this reporting year, CHAs have continued the focus on cancer education, heart health, monthly health focus, and healthy eating initiatives. CHAs organized both health fairs and blood drives during the year.

The Pipeline component focuses its efforts on high school students from underserved communities. It aims to reinforce STEM courses, expose students to the health professions, and influence their choice of health professions career. This year the program consisted of a hybrid format with online and in person activities. Six rising juniors and 3 rising seniors participated in the Summer 2021 program.

CHC continues to use the blog “[The CHC Advocate](#)” to disseminate information related to health disparities and community engagement. During the pandemic, we created a section called “[Syndemic](#)” to provide space for the sharing of stories and reflections during the double pandemic of COVID-19 and structural racism.

#### **Research Training and Mentoring:**

Dr. Crook continues to lead this core. We have been successful in maintaining the pipeline from our high school programs, mentioned above, to undergraduate studies and research efforts. A former pipeline student, now a junior at Vanderbilt, worked with the Center as a

part of the CEAL project and presented a poster on the spread of COVID-19 related information in the African American community.



**2020 – 2021**  
**Summary of Scholarly Activities**  
**Center for Strategic Health Innovation**

**I. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The Center for Strategic Health Innovation (CSHI) continues to serve as a leader in innovative healthcare technology applications and solutions. CSHI continues; 1) our long partnership with innovative programs with the Alabama Medicaid Agency, 2) health technology development and application, 3) applied informatics and healthcare analytics services, 4) technical assistance for meeting Meaningful Use requirements, 5) innovation programs with Medicare for value-based payment programs. CSHI actively promotes collaboration on projects with other USA colleges, College of Medicine departments, and other Regional Extension Centers (RECs) in the southeast US. We are continuing our partnership with four (4) of Medicaid's new Alabama Coordinated Health Networks (ACHN) to serve as their Health Information Management System (HIMS) vendor. The ACHNs provide coordinated consolidated case management services to Medicaid Eligible Individuals (EI) across Alabama.

Medical Informatics and Healthcare Technology: RMEDE™, our in-house developed Realtime Medical Electronic Data Exchange platform, continues as our platform to develop diverse projects tailored to our client's individual needs. CSHI utilizes innovative health technologies to improve the care, quality, cost and access to healthcare throughout Alabama. RMEDE™ is a secure web-based life-state management system that serves as the HIMS system for the ACHNs. The HIMS system supports care coordination for (EIs) for the following: 1) General and Transitional Care, 2) Maternity, 3) Family Planning, 4) Medical Monitoring. The RMEDE™ addresses all facets of care coordination from assessing needs, creating care plans, tracking goals, monitoring progress, and reporting results. This year, the RMEDE™ system was enhanced to include functionality to support remote delivery of care coordination in alignment with proper social distancing requirements due to COVID-19 restrictions. The system securely receives and sends data, compiles billing data, and provides reporting capabilities to the ACHNs. Reports are delivered via a secure web portal that utilizes Tableau®. The CSHI department partners with Medicaid and the ACHNs to enable data-driven decisions on patient care improvements.

CSHI continues to enhance and support our RMEDE™ Remote Patient Monitoring (RPM) program. There are currently over 1,000 active Medicaid Pt 1<sup>st</sup> patients participating in our in-home biomonitoring project. This program is a unique partnership between Medicaid, The Alabama Department of Public Health (ADPH) and USA's CSHI. Patient referrals are received from their primary medical provider (PMP) with the chronic disease diagnoses of hypertension, diabetes and congestive heart failure for in-home monitoring. Patients are instructed to dial-in their key physiologic parameters, and an ADPH Biomonitoring Nurse is assigned to monitor the results and submit reports to the patient's provider. Data is utilized by Medicaid to determine benchmarks for compliance and comparisons.

The Alabama Regional Extension Center (ALREC) continues to operate within the Center for Strategic Health Innovation at the University of South Alabama (USA). Since the ONC grant has ended, as part of its sustainability model, ALREC continues to offer its fee-for-service line providing assistance to Providers throughout the multiple stages of Promoting Interoperability (formerly Meaningful Use) and MIPS attestations. ALREC is currently consulting with over 10 medical practices throughout Southern Alabama, working directly with roughly 125 physicians, nurse practitioners, and physician assistants. Approximately \$65,000 was received in revenue from ALREC's membership service line. ALREC continues to work with USA Health University Hospital to monitor 105 physicians helping them to complete Promoting Interoperability attestations, which can result in over \$760K in incentive payments.

CSHI and the USA Department of Family Medicine are partnering on a HRSA grant to increase the number of primary care physicians and improve the health of the population in the USA Health area through the expansion and enhancement of a Population Care Pathway program. Forty medical students will be given the opportunity to receive enhanced community training at one of the community clinical sites during their four years as a medical student. Five rural health clinics have been established as the clinical sites for the telehealth program. Telehealth carts are in place at each site location along with a site coordinator to guide and assist the medical students with the technology. The students have full access to the telehealth carts and are able to virtually connect with each other during online sessions which provides each student with a unique experience to engage with one another using this telemedicine technology in rural areas.

**2020-2021**  
**Summary of Scholarly Activities**  
**Center for Disaster Healthcare Preparedness**  
**AIMS, HCC Coordination and Fiduciary Agent**

**Alabama Incident Management System (AIMS):**

In 2003, USA-Center for Disaster Healthcare Preparedness (CDHP) developed AIMS, a statewide hospital and Healthcare Coalition (HCC) data reporting and communications platform providing situational awareness during an emergency response. To this day, CDHP continues to manage AIMS for the Alabama Department of Public Health (ADPH), enhance operational capabilities, and provide 24/7 customer support. Throughout 2020-2021, AIMS continued to serve as a primary source for COVID-19 reporting and communication among Hospitals and Healthcare Coalitions (HCC) statewide.

As HCCs continued to grow and support its diverse members, the overall number of AIMS users accounts increased to nearly 2300 active accounts. AIMS users by Healthcare Coalition District: East Central HCC 357; North Alabama HCC 292; Jefferson HCC 269; Southwest HCC 266; Shoals HCC 251; Northeast HCC 244; Southeast HCC 210; West Central HCC 187; Mobile HCC 184; and Alabama Department of Public Health (ADPH) State 31. AIMS accounts by Organization Type: Hospitals 968; Nursing Homes 533; ADPH District 160; Emergency Management Agency (EMA) 112; Emergency Management Services (EMS) 63; Community Health Center (CHC) 53; Medical Needs Shelter (MNS) 32; ADPH State (31) and Other (which represents any HCC member organization outside of those listed above) 339.

Throughout the year, AIMS was activated through 248 Notifications including response to “real events”, primarily COVID, but also to weather events including: Hurricanes Laura, Sally and Zeta. Due to impacts along the gulf coast, AIMS facilitated the reporting and collection of Essential Elements of Information (EEI) from Healthcare Facilities impacted by the storms sent directly to the Department of Health and Human Services. An EEI Report Form was made accessible to Hospitals and Nursing Homes within AIMS. Additional responses included severe weather events and the Nashville bombing, which impacted facility internet and power outages. AIMS also continued to be a primary platform for HCC exercises, in particular, Redundant Communications Exercises (required twice per year) and statewide winter exercises. General notifications were also sent through AIMS including: regular Health and Human Services (HHS) COVID-19 Hospital Reporting Guidance Updates (October 6, 2020; December 8, 2020; January 12, 2021; March 19, 2021; and May 27, 2021) and reminders and clarifications for state and Federal COVID-19 Reporting requirements (daily bed status updates; daily COVID Capacity & Utilization Report (CU Report); daily COVID Inpatient Survey and COVID Supply Survey Report Form as needed). Throughout the year, the most frequent notification and message was for resources, in particular PPE requests (goggles, gowns, gloves, N95, surgical masks, hand sanitizer, wipes, hair covering, COVID testing kits, thermometers and more). During COVID patient surges, AIMS received specific resource requests, including ICU bed placement; urgent specialty care placement; ventilators and accessories; BiPaps; Medical Equipment such as Blood Transfusion kits and Oxygen Concentrators; Pharmaceuticals and staffing (RN and LPN) all for COVID and Non-COVID patients. As healthcare facilities faced challenges with securing PPE through their normal supply chains and through the HCC, hospitals and nursing homes were able to request within

AIMS, via the ADPH PPE Request form, a limited supply of PPE that ADPH was able to provide and deliver to facilities to help care for and treat COVID patients. In mid-December, ADPH retired the PPE request form as efforts shifted to prepare for statewide administration of COVID-19 vaccine. Under critical emergency situations, hospitals and healthcare providers were still able to submit resource requests through AIMS which were processed through the Center for Emergency Preparedness as supplies were available and/or were entered into the state emergency management system, WebEOC, for tracking and securing of potential needs.

As a result of COVID-19 and importance of statewide situational awareness of the pandemic, AIMS became a daily use, reporting platform (and continues today) among hospitals throughout the state to provide critical COVID patient and facility resource capability data. AIMS was federally certified as Alabama's COVID reporting platform for hospitals to submit their daily COVID Capacity & Utilization (CU) report, as mandated by the Health and Human Services (HHS) and Center for Medicare & Medicaid Services (CMS). As a state-certified reporting platform, AIMS reduced hospital reporting redundancy by allowing COVID CU Report Data to be submitted solely into AIMS which was then uploaded to the HHS COVID Hospital reporting portal, HHS Protect, on behalf of all Alabama hospitals.

To assist hospitals in maintaining CMS reporting compliance, as a condition of participation, two additional AIMS reporting forms were created for retrospective reporting: COVID Capacity & Utilization – Monday Report Form (utilized by 5 rural hospitals approved to report weekend data on Mondays) and the AIMS COVID Compliance Report Form (utilized by any hospital who failed to provide a daily submission and /or failed to submit any required data fields). All COVID Capacity & Utilization Report Forms included a “Populate with previous entry” to assist with completion of daily submissions, enabling facilities to only update data fields as needed. USA-CDHP in collaboration with the Alabama Hospital Association (AlaHA) communicated daily with hospitals on the status of reporting compliance and followed up accordingly for any delinquent submissions and/or identified data entry errors.

In addition, hospitals utilized AIMS to report daily Bed Status updates and to also provide data on the COVID Inpatient Survey, a report form generated by the state to provide data analysis on hospitalized COVID patients and track statewide hospitalization numbers.

AIMS generated daily statewide situation reports which were provided to state Unified Command agencies including ADPH, Governor's Office COVID Task Force, AlaHA and others as requested. An Application Programming Interface (API) was established between AIMS and the Alabama Department of Public Health's state COVID-19 Dashboard and to the Mobile County Health Department.

In preparation for the 2021 Hurricane season and the potential need for ADPH to standup Medical Needs Shelters in areas impacted by severe weather, the ADPH Medical Needs Shelter / People Tracking Module within AIMS was reviewed, tested and updated.

With the increased amount of data reported into AIMS, the value of the situational awareness obtained from the collected data and the communication among health care providers and response agencies throughout the state, additional funding was awarded to support AIMS enhancements

from January 2021 - June 2023. A statewide AIMS Advisory Committee comprised of Healthcare Coalition AIMS Coordinators and AIMS Administrators/Users from a variety of healthcare originations and response agencies will guide implementation of new enhancements.

**Healthcare Coordination Program:**

CDHP coordinated the implementation of Healthcare Coalition (HCC) benchmarks and performance measures, as outlined in the 2020-2021 Hospital Preparedness Program (HPP) grant, as well as implementation of activities in the 2017-2022 Healthcare Preparedness and Response Capabilities document. Each of the nine Alabama Healthcare Coalitions work closely with CDHP to ensure all required activities were met and HCC plans coordinated with the Alabama Department of Public Health- Center for Emergency Preparedness (ADPH-CEP), Emergency Support Function #8 (ESF #8) –Public Health and Medical – State Emergency Operation Plans.

Due to COVID-19 restrictions, traditional in-person coordination and training programs offered through the Coordination Program were suspended; however, standard meetings, including bi-weekly conference calls/zooms, were scheduled with all HCC Coordinators, representatives from ADPH-CEP and the HHS Region 4 Field Project Officer. Individual calls were scheduled throughout the year to review HCC work plans, budgets and required activities. As requested, CDHP participated in HCC virtual meetings to provide HCC updates and/or training.

Throughout the year, CHDP worked with each HCC to complete the following activities and ensure submissions were uploaded into the Federal HCC reporting system, the Coalition Assessment Tool (CAT): 2020-2021 annual work plan and Budget for both discretionary funds and COVID supplemental funds; Final Pediatric Response Surge Plan; Final Infectious Disease Surge Plan; 2 HCC Redundant Communications Drills; Updated Hazard Vulnerability Assessment (HVA); Bi-annual HHS emPOWER Map data obtained and shared with HCC members; GAP Analysis, Resource Inventory; Updated Preparedness Plan; Updated Response Plan; Updated CAT Forms 1- 4, Coalition Planning Guidance (CPG) activity assessment questions and completion of the CAT Exercise tool. Due to the increasing demand on hospital personnel and the overall healthcare system in response to COVID, several annual requirements were waived by HHS, including the annual Coalition Surge Test (CST) and the Pediatric Response Plan Table Top exercise.

CDHP continued collaboration with ADPH-CEP to support the role of the State Healthcare Coalition Coordinator and assist the grants management division on the 2020-2021 grant reports and budgets (carry-over funds, AIMS Enhancement grant and HCC Supplemental Funding) and submission of the 2021-2022 grant application. CDHP also assisted with the update and maintenance of the Emergency Preparedness (EP)/ HCC master contact lists, EP/HCC Team Maps and master list of signed Alabama Healthcare Provider Mutual Aid Compacts by HCC Districts.

CDHP worked with ADPH to update the Alabama Crisis Standards of Care Guidelines and reposted on the ADPH CEP website: <https://www.alabamapublichealth.gov/cep/index.html> and the USA-CDHP website: <https://www.southalabama.edu/colleges/com/research/cdhp/resources/alabamacsguidelines2020.pdf>. The revisions to this document included ethical considerations for the decision-making processes for the allocation of scarce resources and compliance with anti-discrimination laws during a health care crisis. The Alabama Crisis Standards of Care Guidelines

is the only document approved by ADPH for managing modified care protocols and the allocation of scarce medical resources during a healthcare emergency. This document is the product of a collective effort by healthcare providers and subject matter experts over several years. These guidelines were due by June 30, 2021 as an HPP grant requirement and have been submitted to HPP/ASPR/DHHS. The Guidelines will serve as a document for HCCs to integrate and adopt the into their HCCs plans during the 2021-2022 grant year.

**Fiscal Agent Program 2020-21 and COVID Supplemental Fiscal Agent Program:**

CDHP served as the Fiscal Agent for the second year and managed the Supplemental COVID Fiscal Agent Funds for the 9 Healthcare Coalitions (HCCs) in Alabama. This activity was conducted to meet and support the statewide needs for continued HCC assessments, training, planning, coordination, supplies, materials and equipment in healthcare preparedness and response.

Additionally, CDHP supported the HCCs' COVID response through the entire year by managing the ordering, purchasing and delivery of critical infectious disease response supplies and materials for HCC member organizations (hospitals, nursing homes, clinics, EMS, etc.). Approximately \$1,800,000 of resources and services were procured and deployed through efforts of CDHP (and the University of South Alabama) as the Fiscal Agent for Alabama Healthcare Coalitions, to support COVID response. An example of some of the resources include the following:

- Clorox disinfectant sprayer units placed in hospital ambulance bays to quickly sanitize ambulances between calls
- Almost 400 Room Air Purifiers were purchased and deployed to nursing homes throughout the state
- Over 500 MaxAir/Controlled Air Purifying Respirators (CAPRs) were purchased and deployed to hospitals
- Water purification units
- Oxygen concentrator units
- Generators
- Two-way radios systems
- Tents for COVID vaccination clinics, testing sites, and other healthcare events

Regularly, CDHP conducted monthly, individualized conference calls with each HCC Coordinator to review their spending balances including Budget Period (BP) - BP1 carry-over funds, BP 2 discretionary funds and COVID Supplemental funds. Each month, a spending balance was provided to ADPH-CEP and the HPP Region 4 Field Project Officer.

CDHP maintained routine communication with HCCs to ensure all purchases were accounted for, storage agreements were completed and sent to CDHP, and ADPH inventory stickers applied. Completed inventories have been forward to CDHP and ADPH. In addition, communication was frequently initiated with vendors as questions were asked by HCC Coordinators regarding equipment specifications, delivery status and other issues.

**2020-2021**  
**Summary of Scholarly Activities**  
**USA Comprehensive Sickle Cell Center**

**I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS**

**II. PUBLISHED ABSTRACTS**

**III. PUBLISHED BOOKS**

**IV. INVITED PRESENTATIONS**

**V. NATIONAL PROFESSIONAL RECOGNITION**

Haynes, J. Forma Pharmaceutical, Inc. Advisory Board (October 2, 2020)

**VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

**General Operations / Service:** Dr. Johnson Haynes, Jr., continues as Director of the USA Comprehensive Sickle Cell Center. The USA Comprehensive Sickle Cell Center continues to improve the delivery of clinical and educational services to individuals affected with sickle cell disease, family members of affected individuals, and health care providers.

**Education:** The Center faculty provided a broad series of lectures throughout the academic and private medical community, along with lectures for the Counselor /Educator Certification Program sponsored by Sickle Cell Disease Association of America, Mobile Chapter. Lectures were provided to residents in the Department of Internal Medicine and Pulmonary fellows. The USA Comprehensive Sickle Cell Center sponsored its 18th clinical-based, regional conference on practical issues involving sickle cell disease titled, *What's in Your Genes? The Promise of a Cure*. This year's conference was virtual and featured national, regional and local speakers that covered topics ranging from gene therapy, and CRISPR/Cas9 gene editing, to COVID-19 impact in the sickle cell community and unconscious bias. The highlight of the conference was a local patient previously treated with gene therapy.

The *Dr. Cecil L. Parker, Jr. Sickle Cell Disease Distinguished Lectureship Endowment* is in its 14th year and continues to provide funding to support the USA Comprehensive Sickle Cell Center educational agenda in perpetuity. We will continue the clinical operations with the same determination and sincerity as we have previously. We continue to seek the necessary grant support to maintain all clinical and research activities, as well as continue

requesting the necessary financial support currently made available by the University of South Alabama, College of Medicine.

**Research:** Ongoing research projects include:

*Comparative Effectiveness of Peer mentoring vs Structured Education Based Transition Programming for the Management of Care Transitions in Emerging Adults with Sickle Cell Disease* (Sub-Contract with Carolinas Healthcare System, Standard (STE) Arm, Patient-Centered Outcomes Research Institute). Participation in this study now affords the Center to employ a full-time coordinator for the Pediatric to Adult Transition Program. This contract is currently in its fourth year of five.

A Phase II, multicenter, randomized, open label two arm study comparing the effect of crizanlizumab + standard-of-care to standard-of-care alone on renal function in sickle cell disease patients  $\geq 16$  years with chronic kidney disease due to sickle nephropathy (STEADFAST).

9/30/2020 – 9/29/2023) Alabama Sickle Cell Tracking Access Towards Equality (ALSTATE) – contract # - 218603

**Clinical Operations / Services:** The Adult Sickle Cell Clinic has operated as a subspecialty clinic for over 20 years. The pediatric and adult clinics serve over 400 clients and continues to grow. The primary objectives of these clinics are 1) to serve as a positive educational experience for primary care residents in the Departments of Medicine, Family Medicine, and Pediatric Medicine at the University of South Alabama; and 2) to be a resource for practicing physicians in the University and private community. The adult clinic is staffed by Dr. Johnson Haynes Jr., Dr. Ardie Pack-Mabien, Nurse Practitioner; Ms. Jessica King, Nurse Practitioner; Ms. T’Shemika Perryman, RN and Ms. Aisha Davis, Case Manager. The pediatric clinic is staffed by Drs. Felicia Wilson, Hamayun Imran, Preethi Marri, Dr. Ardie Pack-Mabien, Nurse Practitioner; and Ms. Aisha Davis, Case Manager. Family Medicine, Internal Medicine, and Pediatric residents rotate on a monthly basis through the Sickle Cell Clinics.

Dr. Pack-Mabien, Ms. Perryman and Ms. Davis support the pediatric outpatient clinical operations and serve as liaisons when transitioning patients from pediatric to the adult services. The Pediatric to Adult Care Transition Program (PACT) is now in its 10th year. In the PACT Program, a Learning Resource and Development Center (LRDC) is available and serves clients 13-19 years old. The LRDC is located in the Moorer Clinical Sciences Building in room 1515.

**Other Activities:** Dr. Felicia Wilson serves as president of the Alabama Sickle Cell Oversight and Regulatory Commission. Dr. Haynes continues to serve as a member of the Alabama Sickle Cell Oversight Regulatory Commission. The Center’s newsletter, “Sickle Cell Today” is distributed across the State of Alabama to physicians, legislators, clients, client’s families, administrators, and community sickle cell foundations in April and September of each year. Dr. Haynes is now in his 10th year as Assistant Dean of Diversity and Inclusion in the USA College of Medicine.



**2020-2021  
Summary of Activities  
Office of Medical Alumni Relations**

Representing 41 graduating classes (1976-2020), the total number of M.D. graduates of the USA College of Medicine is 2,836 (not including former USAMC housestaff or graduates of the Ph.D. program).

**2019-2020 Medical Alumni Association Board of Directors**

**Officers**

- Dr. Christopher Semple '85, *President*
- Dr. Edward Panacek '81, *Vice President/Treasurer*
- Dr. Russell Goode, '10, *Chair, Alumni and Student Services Committee*
- Dr. John Todd '88, *Immediate Past President*

**Directors**

- Dr. Romsel Ang, '01
- Dr. Jason Dyken, '91
- Dr. Matthew Cepeda, '03
- Dr. Druhan Howell, '03
- Dr. Steve Kinsey, '89
- Dr. Bibb Lamar, '98
- Dr. Ed Panacek, '81
- Dr. Wes Pickard, '88
- Dr. Juan Ronderos, '85
- Dr. Stacey Wing, '96
- Dr. Sabrina Bessette, '03
- Dr. Nancy Wood, '07
- Dr. Ashleigh Butts Wilkerson, '12

Beginning with the 2021 Board year, 0 Board members were retired from the Board of Directors:

Beginning with the 2021 Board year, 0 new members were appointed to the Board of Directors and will begin their term with the 2021-2022 year:

**Scholarship Recipients for the 2019-2020 Academic Year**

<b>Student Name</b>	<b>Scholarship Received</b>	<b>Amount of Scholarship</b>
Monica Mitta	2021 Medical Alumni Association Scholar	\$10,000
Erin Schmale	2021 Medical Alumni Association Scholar	\$10,000
Vishal Shroff	2021 Medical Alumni Association Scholar	\$10,000
Zachary Bruce White II	2021 Medical Alumni Leadership Award	\$500
		<b>\$30,500</b>

### **2021 Medical Alumni Reunion Weekend**

The 2021 Medical Alumni Reunion Weekend scaled back due to the ongoing COVID-19 pandemic. Plan to expand the 2022 Reunion at the Grand Hotel in Point Clear, AL and celebrate all classes.

### **COVID-19 Relief Funds**

Funds raised by the USA Medical Alumni Association in support of COVID-19 and emergency relief funds supporting USA College of Medicine and USA Health.

COM CARES	\$ 10,293
<b>Total Amount Raised</b>	<b>\$ 10,293</b>

### **2020-2021 Annual Fund and Membership**

Funds raised by the USA Medical Alumni Association in support of the operations of the Association.

Annual Fund Contributions	\$ 7,145
Amount Raised via Memberships	\$ 15,400
<b>Total Amount Raised</b>	<b>\$22,545</b>

## **2020-2021**

### **Division of Medical Education and Student Affairs**

The Divisions of Medical Education and Student Affairs are responsible for all undergraduate educational programs in the College of Medicine. Activities in the Division of Medical Education and Student Affairs are accomplished through offices in the Medical Sciences Building, Mastin Building, and USA Health University Hospital. Students in the clinical years of undergraduate medical education rotate at all USA Health Campus sites, including University Hospital and Children's and Women's Hospital with the possibility of clinical interaction and research opportunities at USA Health Mitchell Cancer Center. USA College of Medicine students have the opportunity to see patients in outpatient settings at Stanton Road Clinic and Strada Patient Care Center.

#### Student Affairs

Due to the international and national COVID-19 pandemic, in-person College of Medicine group events scheduled for spring 2021 were modified to ensure distancing and safety for all in attendance. Match Day 2021 was held on campus in the USA Student Ballroom. Although in-person attendance was limited to members of the Class of 2021 and select administrators and staff, the soon-to-be residents were able to open their envelopes together, announce his/her match and pin the U.S. map, as had been done in previous years. Prior to the event, the students were checked in at the College of Medicine, provided swag bags with a Match Day T-shirt, and then shuttled to the ballroom using campus-wide transportation. Prior to the event, a Zoom link was sent to all families and faculty who wished to attend the event virtually. The virtual component was facilitated by the College of Medicine Office of Educational Technology and Services and USA Health Marketing and Communications.

The match results were impressive, including two students in Ophthalmology, two students in Otolaryngology, two students in Urology, one student in Radiation Oncology, one student in Anesthesiology, four students in Emergency Medicine, five students in Orthopedic Surgery, and five students in Diagnostic Radiology. With respect to primary care fields, the following were the match results: ten students in Internal Medicine, seven students in Family Medicine, four students in Psychiatry, four students in Pediatrics, and one student in combined Internal Medicine and Pediatrics. Regarding General Surgery, six students matched into categorical programs and two into preliminary programs. Regarding OB/GYN, eight students matched into categorical programs and one into a preliminary program. Two students matched into a Transitional Year. Sixty-four percent of students matched into out-of-state residency programs with the remaining thirty-six percent staying in Alabama programs. Seventeen USA COM students chose to continue their graduate medical education in the USA Health Hospitals. Students from USA COM were placed into programs spanning the entire continental United States.

Later in the spring, the COM hosted an in-person Honors Convocation for the Class of 2020. Once again, this event was hosted in the USA campus Student Ballroom. This in-person event was limited to the student recipients who were each allowed to bring one guest. Virtual attendance was again possible and facilitated through the departments listed above. Graduation was hosted in-person at the

USA Mitchell Center following specific campus guidelines for safety and distancing. For the in-person component, each graduate was allowed to invite four guests and each graduate was able to have his/her academic hood donned by the guest of their choosing. At this ceremony, the graduates were also awarded his/her diploma. Guests were seated in their cohorted groups of four in the arena as designated by reserved seating which was provided by the USA Mitchell Center. Faculty and platform guests were also present in-person. The virtual component of this event was provided by the USA Mitchell Center staff. During this ceremony, the graduating class of 2022 was addressed both by Dr. Errol Crook, Abraham A. Mitchell Chair and Professor, Department of Internal Medicine; and Class President, Zachary White II. The Military Oath of Office was administered by Dr. Andrew C. Bright, Lieutenant Commander United States Navy and Assistant Professor in the Department of Surgery, with all students reciting the Hippocratic Oath led by Dr. John Marymont, Vice President of Medical Affairs and Dean of the USA College of Medicine.

The White Coat ceremony for the Class of 2023 was also able to be held in-person in the USA Mitchell Center using the same model for distancing and safety, as previously mentioned for graduation. Students sat in socially distanced seats with one guest of their choosing who accompanied them to the stage for the donning of the White Coat. At this ceremony, as in previous years, those students, residents and faculty who were elected into the Arnold P. Gold Humanism Honor Society were inducted. Dr. Lynn Batten, Director of the Division of Pediatric Cardiology and Professor of Pediatrics and faculty inductee for Gold Humanism, addressed the class and the class response was provided by Natalie Kidd, President of the Class of 2023. The Medical Student Oath was recited by the class and led by Dr. Chris Semple, President of the USA Medical Alumni Association. As in past years, the USA Medical Alumni Association purchased the White Coats for the Class of 2023.

Although once again this year these celebratory events were somewhat overshadowed by the COVID-impacted disruptions to gatherings, the importance of the transitions these events mark in the lives of our future healthcare providers remains the same. These classes and the documentation of these events will forever be etched into the history of these young people and the USA College of Medicine.

**The number of visiting medical students participating in senior elective courses at USACOM**

*NOTE – due to Covid-19, there were no visiting students in 2020-2021.*

	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Total Visitors	27	32	38	47	0
From LCME Schools	10	17	9	18	0
From Osteopathic Schools	17	15	29	29	0
From Foreign Schools	0*	0*	0*	0*	0*
Completed Paperwork, but Cancelled Visit					
From LCME Schools	6	14	12	6	0
From Osteopathic Schools	12	11	11	3	0
From Foreign Schools	0*	0*	0*	0*	0*
Disciplines in which Electives were taken					
Anesthesiology	0	0	0	0	0
Clinical Pharmacology	0	0	0	0	0
Emergency Medicine	0	0	0	14	0
Family Medicine	1	2	5	3	0
Internal Medicine	8	6	11	7	0
Medical Genetics	0	0	0	0	0
Neurology	0	1	2	1	0
Neurological Surgery	0	0	0	0	0
Obstetrics/Gynecology	2	1	0	1	0
Ophthalmology	0	0	0	0	0
Orthopedics	6	10	4	5	0
Pathology	0	1	1	1	0
Pediatrics	6	5	7	6	0
Psychiatry	0	1	4	4	0
Radiology	2	2	1	2	0
Surgery	2	3	3	3	0

\*We joined the AAMC VSAS in 2014 and no longer rotate foreign students

### Months Electives Taken

	2017-2018		2018-2019		2019-2020		2020-2021	
	American	Foreign*	American	Foreign*	American	Foreign*	American	Foreign*
January	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0
July	9	0	11	0	18	0	0	0
August	6	0	10	0	11	0	0	0
September	7	0	8	0	11	0	0	0
October	6	0	6	0	6	0	0	0
November	4	0	3	0	1	0	0	0
December	0	0	0	0	0	0	0	0

Letters of evaluation (Dean’s Letters) were written for each of the 69 seniors who graduated in May, 2021. Students applied to 4206 residency programs through the AAMC Electronic Residency Application Service (ERAS).

Sixty-seven (67) students matched for residency positions. Sixty-four (64) of the May graduates used the NRMP as their primary means of obtaining residency, four (4) graduates participated in a specialty match, and three (3) graduates participated in the military match.

	Number of Graduates	Match Utilized	
		NRMP	Non-NRMP
2017	70	68	2
2018	73	70	3
2019	80	70	7
2020	66	63	2
2021	69	64	3

\*We joined the AAMC VSAS in 2014 and no longer rotate foreign students

**University of South Alabama Seniors  
Residencies Received by Discipline**

	Class of 2017		Class of 2018		Class of 2019		Class of 2020		Class of 2021	
<b>PRIMARY CARE:</b>	31	44%	33	45%	28	36%	27	42%	22	33%
Internal Medicine	15	21%	13	18%	12	16%	16	25%	10	15%
Family Medicine	10	14%	7	10%	10	13%	6	9%	7	10%
Pediatrics	3	4%	11	15%	6	8%	3	5%	4	6%
Med/Peds	3	4%	2	3%	0	0%	2	3%	1	1%
Anesthesiology	0		2		3		4		1	
Dermatology	0		0		1		2		0	
Emergency Medicine	7		8		4		6		4	
Int. Med/Emer. Med.	1		0		0		0		0	
Neurology - Child	0		0		0		1		0	
Neurology	1		1		1		2		0	
Neurological Surgery	0		0		1		2		0	
OB/Gyn	7		6		7		2		8	
OB/GYN Preliminary	0		0		1		0		1	
Ophthalmology	2		1		5		1		2	
Orthopedic Surgery	1		2		3		1		5	
Otolaryngology (ENT)	0		1		1		0		2	
Pathology	0		2		2		1		0	
Psychiatry	6		5		7		3		4	
Radiology - Diagnostic	2		1		3		2		5	
Radiology - Interventional	0		1		0		0		0	
Radiation Oncology	0		0		1		1		1	
Surgery – General	11		8		4		7		6	
Surgery - Plastics	0		1		0		0		0	
Surgery – Preliminary	0		0		5		3		2	
Transitional	1		0		0		0		2	
Urology	0		1		0		0		2	
<b>TOTAL Graduating Seniors</b>	70		73		77		65		67	

**University of South Alabama Seniors  
Residencies Received by State**

	Alabama		USA Hospitals (Mobile)	Out-of-State		Number of Different States
2017	22	31%	12	48	69%	22
2018	12	16%	7	61	84%	22
2019	19	25%	12	58	75%	20
2020	23	35%	8	42	65%	23
2021	24	36%	17	43	64%	19

On May 6, 2021, 69 medical students received the Doctor of Medicine degree and two graduate students received the Doctor of Philosophy degree at the forty-sixth annual USA College of Medicine Commencement Ceremony, which took place in the Mitchell Center. Prior to the hooding and presentation of the doctoral degrees, Dr. Errol Crook addressed the class and Zachary White responded for the graduates. On the morning of May 5, the College held its Honors Ceremony which took place in the ballroom at the Student Center where the following awards were presented:

Dean's Award – Lauren Alexandra Galbraith Gibson  
 Merck Award – Joshua Phillip Dehart and Vishal J. Shroff  
 Glasgow-Rubin Achievement Citations – Lauren Alexandra Galbraith Gibson and Erin Olivia Schmale  
 Dr. Robert A. Kreisberg Endowed Award of Excellence – Stuart Joseph McFarland  
 Leonard Tow Humanism in Medicine Award – Dala Mohamad Eloubeidi and Dr. Alison Bolton  
 Medical Alumni Leadership Award – Zachary Bruce White II  
 Excellence in Public Health Award – Ravi S. Rajendra  
 Community Service Award – Jessica A. Cook and Ravi S. Rajendra  
 SNMA Leadership Award – Ashley Breanna Cainion  
 Outstanding Student in the Pre-clerkship Curriculum – Lauren Alexandra Galbraith Gibson  
 Award for Excellence in Teaching Clinical Skills – Jordan Matthews Smith  
 Clinical Pharmacology & Therapeutics Excellence Award – Raymond C. Dolcelli  
 Hollis J. Wiseman Award for Excellence in Pediatrics – Tina Etminan  
 Samuel Eichold Award – Dala Mohamad Eloubeidi  
 Dr. Michael M. Linder Endowed Award – James Wiley West  
 The Orthopaedic Excellence Award – Austin C. Atkins, William Tanner Cox, Grayson A. Domingue, Ian Alexander Garrison, and Ravi S. Rajendra  
 John W. Donald Memorial Award in Surgery – Austin C. Atkins  
 H. C. Mullins, M.D. Award – Adrienne Lee Vickers  
 Obstetrics/Gynecology Award – Macy J. Vickers  
 Excellence in Emergency Medicine Award – Carly Turner McRae  
 Society for Academic Emergency Medicine (SAEM) Award – Monica Mitta  
 Excellence in Psychiatry Award – Samantha Noel Lee



## Grade Distribution 2020-2021 Academic Year

### Freshman Courses

	H	P	F
Foundations of Human Health	24	53	0
MSK	20	56	0
Cardiovascular	9	64	1
IHD	14	58	1
Urinary	8	63	3
OSCE M1 – Fall	17	59	0
OSCE M1 – Spring	66	8	0

### Sophomore Courses

	H	P	F
Digestive	19	54	0
Endocrine & Reproductive	17	54	0
Oncology	21	50	0
Neuroscience & Behavior	8	63	2
Respiratory	9	62	1
OSCE M2 – Fall	12	61	0
OSCE M2 – Spring	8	62	1

### Junior Clerkships

	H	P	F	Out of sequence
Family Medicine	14	62	1	1
Internal Medicine	11	65	1	0
Neurology	6	55	1	3
OB/GYN	18	61	0	0
Pediatrics	10	68	1	1
Psychiatry	21	58	1	2
General Surgery	13	62	1	0

**Note:** For the Academic Year 2020-2021, preclinical modules and clinical clerkships were disrupted by

### Academic Progress of Medical Students

Source: Part II of LCME Annual Medical School Questionnaire

	2017	2018	2019	2020	2021
Initial Students in Class	74	76	75	74	77
Graduates	70	73	73	66	69
True Attrition (will not receive M.D. in any year)	1	1	0	0	3

	2016-17	2017-18	2018-19	2019-20	2020-21
Dismissed					
Freshmen	0	0	0	0	0
Sophomores	0	0	0	0	0
Juniors	0	0	0	0	0
Seniors	0	0	0	0	0
Placed on Leaves of Absence (LOA)					
Freshmen	5	2	0	1	1
Sophomores	1	1	4	0	0
Juniors	8	7	3	12	6
Transferred to Another Medical School	0	0	0	0	0
Withdrew	3	1	2	2	2
Admitted with Advanced Standing or Re-entered from Graduate School	0	0	0	0	0
Deceased	0	0	0	0	1
Repeated All or Part of the Year	6	3	5	1	6
Enrolled on a Decelerated Schedule	0	0	0	0	0

Minority Students (Black, Native American, Hispanic)	2016-17	2017-18	2018-19	2019-20	2020-21
Total	35	43	39	47	42
Freshmen	10	11	10	16	9
All Other Classes	25	32	29	31	33

**United States Medical Licensure Examination (USMLE) Step 1  
First Time Takers**

	2016	2017	2018	2019	2020
Number of Students	78	74	67	69	69
National Overall Mean	228	229	230	231	245
USACOM Overall Mean	228	234	232	231	247
Failure Rate – National	5%	4%	4%	3%	2%
Failures at USA	2%	1%	3%	4%	1%

Minimum passing score = 176 in 1997; 179 in 1998-2000; 182 beginning in 2001; 185 in 2007; 188 in 2010; 192 in 2014; 194 in 2018

**United States Medical Licensure Exam (USMLE) Step 2  
First Time Takers**

	2016	2017	2018	2019	2020
Number of Students	71	70	74	69	69
National Overall Mean	241	242	241	245	245
USACOM Overall Mean	246	248	248	249	247
Failure Rate – National	4%	2%	4%	2%	2%
Failures at USA	3%	0%	3%	3%	1%

Minimum passing score = 170 for Class of 1997-2000; 174 beginning with the Class of 2001; 182 beginning with the Class of 2004; 184 beginning with the Class of 2008; 189 beginning with the Class of 2011; 209 beginning with the Class of 2014

**United States Medical Licensure Examination (USMLE) Step 3**

	Class of 2014	Class of 2015	Class of 2016	Class of 2017	Class of 2018
National Percentage Passing	98	98	98	98	98
USA Percentage Passing	98	99	99	100	99
USA Number of Students	62	69	69	76	67

## **Evaluation of Student Performance in the First Postgraduate Year**

*Due to the low rate of responses from Program Directors of the PGY-1 programs of our 2020 graduates, there is insufficient data to create a report for this year.*

### **Curriculum Committee**

The Curriculum Committee met twice a month this past academic year. Meeting agendas consisted of subcommittee reports with recommendations for action, as well as informational sessions updating Committee members on issues such as continuous quality improvement of our educational program, ongoing oversight of the preclerkship, clerkship, and primary care scholars pathway curricula, and the various curricular changes necessary to protect the safety of our students and faculty while still meeting all educational objectives in the setting of the challenges posed by the global coronavirus pandemic.

The Committee is charged with oversight of the UME curriculum in accordance with LCME standards. This encompasses the establishment of policies and practices for design, delivery, monitoring, mapping and assessment of educational content, and assuring that curricular problems are effectively addressed. The Committee was chaired by Elizabeth Minto, MD.

Subcommittees of the Curriculum Committee also met regularly to perform portions of the work of the parent Committee through 2020-2021. The subcommittees and their chairs included:

Assessment and Evaluation (Abu Al-Mehdi, MD, PhD)  
Clerkship Directors (Nicolette Holliday, MD)  
Clinical Skills (Elizabeth Minto, MD)  
Curriculum Integration (Jeff Sosnowski, MD, PhD)  
Clinical Pathways (T.J. Hundley, MD)  
Pre-Clerkship Directors (David Weber, PhD)

### **Summary of Curriculum Committee activities and actions for 2020-2021**

#### Curricular Oversight

The main focus of the Curriculum Committee continues to be oversight of the content and delivery of our COM curriculum and ensuring that our methods are preparing our students by appropriately defining and assessing educational objectives and achieving appropriate milestones of learning. For AY 2020-21, the A&E subcommittee's review of preclerkship modules was suspended in an effort to allow the subcommittee to review and revise its internal processes. A summary of that work can be found later in this document.

A large portion of the Curriculum Committee's work in AY 2020-2021 related to the coordination, communication, and oversight of a transition from the "lockdown" that was triggered by the coronavirus pandemic back to a more "new normal" operating framework to best balance safety, student experience and wellness, and flexibility. A summary of major portions of this work follows.

#### Handbook revisions

Given the numerous changes necessitated by the coronavirus pandemic to the ability of our students to sit for their Step 1 and 2 exams, as well as the suspension (and subsequent cancellation) of Step 2 CS, changes to the Handbook were approved by the Curriculum Committee. These included relaxation of the deadline for students to have completed Steps 1 and 2, and removal of the requirement to pass Step 2 CS for graduation.

A deadline for students to take Step 1 by the beginning of the spring semester was approved by the Committee.

#### Grading and Remediation policies

Soon after the onset of the coronavirus pandemic in March 2020, the Curriculum Committee approved changes to the pre-clerkship and clerkship grading policies to accommodate for changes in instructional and assessment methods imposed by the rapid shift to remote only learning and testing. These changes were necessary during that transitional period and included changes in required assessments (customized NBME exams) and passing thresholds for biweekly and NBME exams.

Going into AY 2020-21, the Curriculum Committee reviewed the need for continuation of these revisions. Review of the relatively new methods of remote content delivery, remote testing, and connectivity resulted in the impression that these methods were reliable and effective. Thus, the Committee voted to revert to the “pre-Covid” grading policies for both pre-clerkship and clerkship blocks. The protocol for testing continued to necessitate remote exam delivery.

Covid-19 caused a disruption to the typical process of remediation at USA COM due to changes in delivery of both local and national educational services. Most pertinent was the inability to deliver customized NBME exams, which have traditionally been a component of the remediation program for modules. The Curriculum Committee reviewed and approved a revised remediation policy that allows for flexibility in the remediation program, alternative summative assessment methods for the Covid-impacted modules that could not access customized NBME exam content, individualization of remediation content to each affected student, specific passing thresholds and minimum requirements for remediation, and set appropriate oversight by the Assistant Dean of Curriculum Integration. In addition, policies regarding academic probation, provisional grades, and Handbook excerpts that gave somewhat conflicting information were reviewed and appropriately revised.

All of these changes also revealed the need to define “Covid-impacted” for purposes of student transcripts and MSPE content. At the request of the Associate Dean of Student Affairs and the COM registrar, the Curriculum Committee developed and approved a definition of “Covid- impacted” modules and clerkships.

#### Safety plans for reopening in Fall 2020

Early in the summer of 2020, the University empaneled a Reopening Committee comprised of leadership from the various colleges and administrative groups, as well as medical experts from USA Health, to review all plans for classes and events and set safety protocols and course delivery guidelines in the setting of the ongoing pandemic. Various options were laid out by the Committee to allow flexibility for course directors to hold in-person, web-based, or web-blended courses, and to deliver material either synchronously or asynchronously (utilizing web capture via Panopto) to

accommodate students that could not attend in person or preferred not to. Universal masking and 6-foot social distancing at all times were required, which necessitated setting occupancy limits for all gathering spaces in the COM. To adapt to these safety requirements, the Curriculum Committee and module directors developed a “waves” system, splitting the M1 and M2 classes into groups that could rotate through small group learning activities while still adhering to necessary safety plans. Students who were quarantined either due to symptoms or due to potential exposure (identified through a robust contact tracing protocol implemented by the Reopening Committee) were still able to learn along with their waves by web-based platform (Zoom). Later in the year, in-person activities were conducted with the updated guideline of three feet of physical distancing, with masks and sanitizing protocols still in place. Once the vaccine became available, it was offered to all of our students and standardized patients as members of the healthcare profession.

Clinical Skills also developed protocols for safe reopening, including room occupancy limits, universal masking, screening protocols for all students, staff, and standardized patients, and the opportunity for remote clinical skills practice and feedback via a web-based platform called Flipgrid. Clinical opportunities for students with community preceptors were maintained, with the implementation of a COVID safety checklist to ensure all community sites were following safety protocols as deemed necessary by COM leadership and the Reopening Committee. Later in the year, when the permanent discontinuation of Step 2 CS was announced, the Clinical Skills subcommittee undertook discussions of changes to the course to continue to allow for the instruction and assessment of students’ history, physical exam, and clinical reasoning competencies, as well as communication and interpersonal skills. New changes will be undertaken in the next academic year.

The decision was made to return to remote-only learning after the Thanksgiving break, given the risks following widespread student travel. This necessitated the delivery of the first remote, web-based OSCE for the M2 students, as well as appropriate instruction and practice in this remote format. Student access to libraries, study space, and Wi-Fi was maintained.

OSCE 5, a gateway clinical skills exam and a graduation requirement for our students, had to be canceled in the spring of 2020 due to the Covid pandemic; this exam was delivered to the current M3 class, as well as the graduating M4 class, to ensure fulfillment of all learning objectives and graduation requirements despite the changes necessitated by the pandemic.

The Pathways subcommittee revised policies relating to visiting students at our institution, as well as away electives for our students at other institutions. In the interest of safety and in keeping with guidelines continually monitored from the Coalition for Physician Accountability, visiting students were not accepted this academic year. This will need to be re-examined to best prepare our M3 students moving toward next academic year when changes will likely occur.

Away electives were allowed for our students only at nearby regional institutions, as approved by the Offices of Student Affairs and Medical Education. Only one away elective per student was permitted. Later in the academic year, policies were updated for the 2021-22 academic year to allow for students to plan to do one away rotation without geographical restrictions.

The Committee reviewed and approved changes to the 3rd and 4th year calendars for the next

academic year to allow for flexibility of scheduling for those students that will have to make up missed clinical time due to the pandemic shutdown.

Community service, service learning, and international experiences were all suspended this academic year due to Covid restrictions.

#### Oversight of Neurology clerkship action plan

An additional area of curricular oversight included continuing to monitor the progress of the Neurology clerkship in addressing the deficiencies identified in their AY 2019-20 review by the Assessment and Evaluation subcommittee. The Neurology clerkship director worked with Med Ed leadership and the clerkship director from OB/GYN (identified as a clerkship that had exhibited particular curricular design improvement and success) to address the areas that had been identified for improvement, including required mid-module feedback and fulfilling assessment of all stated learning objectives. Regular reports were reviewed by the Curriculum Committee and after this academic year, the probationary status of the Neurology clerkship was lifted.

#### Primary Care Pathway

The 2020-21 academic year saw the first 10 students complete the first year of the newly implemented parallel curricular track for Primary Care Pathway scholars. The task force that the Curriculum Committee appointed to develop this curriculum continued to oversee the content of the PCP track, recruit and train the PCP fellows that instruct these students, and the clinical sites where these students carry out their additional clinical experiences. A full time coordinator for the PCP track, as well as dedicated staff at each clinical site, ensure that students are fulfilling the requirements of the curriculum. Student evaluations and a curricular review process for the PCP track were also developed and implemented with appropriate oversight from the Curriculum Committee.

#### Revision of A&E Process

The Associate Dean for Assessment and Evaluation worked closely with the chair of the Assessment and Evaluation subcommittee and its members to develop and approve a revised process for the continuous quality improvement of pre-clerkship modules. The rationale leading to the revision of this process included a need for more collegial and constructive review, a more time efficient review process, lightening of the administrative burden placed on module directors, and streamlining of the process to require less forms to be completed. The pre-clerkship subcommittee also vetted and approved this process prior to it being reviewed and approved by the Curriculum Committee.

#### Revision CBE for Clerkship assessment

This academic year, the Clerkship Directors subcommittee undertook a project to review and revise the competency-based evaluation (CBE) that is a key assessment tool that factors into students' grades in their M3 clerkship year. The impetus for this revision was a desire to improve the utility of this tool both for students (to give them more specific and actionable feedback in addition to a summative grade) and for faculty (to make the tool simpler to use, using language that was more applicable to broader clinical settings and had less ambiguity for reviewers). There was also a desire to develop a tool that had more similarity to the clinical milestones tool that has been implemented for GME assessment to help aid in the transition of our learners from the UME to the GME

environment. Specific changes to the broad headings included on the CBE, e.g., the language for each of the columns (ranging from unacceptable to meeting expectations to exceeding expectations) were reviewed in detail after having undergone scrutiny by the clerkship directors prior to being presented to the Curriculum Committee as a whole. Evaluation in 10 categories (previously 9) was proposed: history gathering, physical exam, oral presentation, clinical reasoning (previously “fund of knowledge”), diagnostic decision making (formerly “application of knowledge”), self-directed learning, learning in response to feedback, systems-based practice, professionalism, and interpersonal skills. Narrative comments will be required for any response that either does not meet expectations or exceeds expectations. The manner in which the tool will be converted to a numeric grade will continue unchanged.

After approval of the tool by the Curriculum Committee in spring 2021, the clerkship directors then conducted a pilot process whereby all clerkship faculty were trained on the use of the new tool (both via faculty meetings as well as an instructional video created by the clerkship directors that developed the tool). For the remainder of the spring semester, clerkship faculty continued to use the former CBE tool to grade students, but also completed assessment using the new tool (after grades were submitted, so as to avoid any influence of the new tool on students’ grades during the pilot process). Review of the data from the pilot process showed that there was a slight shift of CBE grades downward, which likely reflects an intended goal of the tool to have more specific and actionable feedback. Following review of the pilot process, the Curriculum Committee approved implementation of the new CBE tool for clerkships starting with the 2021-22 academic year.

#### USMLE and NBME performance review

Ongoing performance review of student performance on national standardized tests showed that our students continue to perform on average between the 60th and 70th percentile on M3 clerkship shelf exams. One area of concern was that despite the maintenance of our typical aggregate performance, there was an increased number of shelf exam failures. This was possibly related to all the changes inflicted by the Covid pandemic, but ongoing review will be necessary. There is also the possibility that the delay in the deadline to take Step 1 may have resulted in students focusing more on Step 1 preparation than on end-of-clerkship exams.

Scores on Step 2 CK continue to track several points above the national average.

Step 1 performance remained within standard deviation of recent years’ performance; however, areas identified for attention were evidence-based medicine, immunology, genetics, behavioral sciences, patient care: management, and multisystem disorders. Curricular content will need to be emphasized in these areas as we look toward revising Foundational content in the pre-clerkship years; changes to the Foundations content as well as multisystem disorders and the Neuroscience module (under which behavioral science is housed) are already being addressed for AY 2021-22.

Emphasis on the USMLE content outline for guiding curricular content was reinforced from the Curriculum Committee throughout this academic year.

#### Review of Y2Q and Mission Management Tool data

The Curriculum Committee reviewed the compiled data from the Y2Q Questionnaire; 65% of our



students responded. Ninety-two percent (92%) responded that they are satisfied with the quality of their medical education, which is above the national average of 83%. Our students' responses regarding in-person vs. virtual instruction, utilization of online medical education content, were also either at or better than the national average. With regard to the learning environment, our students' responses for the pre-clerkship years indicated that they are getting adequate sleep, have a reasonable balance of time spent on assignments and studying vs. relaxation/exercise, but Covid obviously adds some uncertainty. The pre-clerkship subcommittee will be taking up the issue of more dedicated tracking of student time requirements for module work. There were no concerns in the arena of student mistreatment.

Emphasis was also placed by the Curriculum Committee on the AAMC's Mission Management Tool and the missions of a medical school prioritized therein. Each of the 6 mission topics were summarized and distributed to the appropriate subcommittees for incorporation into their ongoing goal setting and actions. Specifically, the Primary Care Pathway task force will focus on Mission 1 (graduating a workforce to address the priority health needs of a nation). Mission 3 (foster the advancement of medical discovery) will be a focus of the pre-clerkship and clerkship directors as well as department chairs and will be incorporated into the A&E process for clerkship reviews. Mission 5 (prepare physicians to fulfill the needs of the community) will be a focus for the Office of Diversity and Inclusion.

#### Oversight of restructuring of M1 first semester "Foundational" content

Based on the identification of areas for improvement in basic science foundational content areas on national standardized exams, as well as an institutional goal to continue further vertical integration of content "threads" throughout the four-year curriculum, the pre-clerkship subcommittee developed and the Curriculum Committee adopted a plan to restructure the first semester of the M1 year to a three block "Foundations" semester. Module directors were identified, start and end dates set for the new modules, and content outlines were identified first. Then an *ad hoc* committee was created that was charged with meeting regularly to develop objectives, assessment methods, and session-specific schedules. One major focus is to tie basic science concepts to their clinical applications starting with the very first week of medical school. This will be accomplished by having clinical faculty participate more in the pre-clerkship content development and delivery than has been done in the past. Clinical cases will be developed to help the students understand why the basic science concepts they are learning will be important for them in their clinical practice of medicine.

Another focus will be to incorporate concepts for normal human development over the lifespan, genetics, multisystem disorders, and culturally responsive medicine throughout not only the Foundations semester but also integrated throughout the remainder of the four-year curriculum. This will also allow curricular design to continue to work toward a more long-term goal of shortening the pre-clerkship curriculum and extending the clinical years for our students. Better vertical integration of foundational threads should allow the organ-based modules that follow the Foundations semester, over time, to be shortened.

The three Foundations modules proposed and approved were 1) a review of anatomy with clinical correlation of normal human development and culturally responsive medicine woven throughout; 2) foundational concepts of cell structure, biochemistry, pharmacology; and 3) infectious disease and

immunology/host defense. These broad topics were further developed by the Foundations subcommittee throughout the spring and summer of AY 2021 to be implemented for the class entering USA COM in the fall of 2021.

#### Addition of Heme/Onc module (to replace former “Multisystem Disorders”)

A new module was reviewed and approved for a revised end of M2 module centered on topics in hematology and oncology. This allowed the decompression of some of the material on hematopoiesis and blood disorders that were previously housed in the cardiovascular module, as well as to utilize pediatric and adult cancer as a framework to conceptualize the broader topic of multisystem disorders. Objectives and assessment methods were appropriately reviewed and approved, and the A&E process will help to guide ongoing development around this topic.

#### Approval of new course directors

Dr. Caleb Butts was approved as the new director for the Surgery clerkship after the relocation of the previous director. Dr. Lori Lowthert was approved as the new director for the Psychiatry clerkship after the retirement of the previous director. Dr. Thomas Rich was approved as director of the fourth year Research Selective following the retirement of the former director.

#### Justice Initiative

Dr. Franklin Trimm and the staff of the USA COM Office of Diversity and Inclusion announced the launch of a Justice Initiative following a framework shared by the AAMC. Goals include to embrace antiracism in medical education and to condemn the structures of racism that have allowed inequities in medicine and in medical education to persist. There is a call for leaders in Medical Education to commit to creating policies and changes that will support an anti-racist learning environment and culture. There are immediate, short term, and long-term goals for this initiative, and stakeholders from the Curriculum Committee were asked to be involved at multiple levels. A grading equity task force will also be convened to evaluate areas for improvement and policy change.

### **Executive Committee of Student Assembly**

Meetings were held on the second Wednesday of every month. Meetings were held via Zoom through March 2021 and transitioned to in-person meetings with Zoom attendance available in April 2021 in Mastin 209 with continued adherence to updated social distancing protocols due to COVID-19. Meetings were held at 5:30 pm. Meetings were not held in December 2020 or June and July of 2021.

As set forth in the Student Handbook, Student Assembly addressed issues affecting student life. The officers were:

- President: Kaitlyn Hickman
- Vice President: Priscilla Perez
- Secretary: Cody Roberts
- Treasurer: Madeline Tucker
- SGA Liaison: Sam Hutcheson
- Faculty Advisors: Dr. Kelly Roveda, Dr. Caleb Butts

1. Events funded by Student Assembly
  - a. Halloween Party: cancelled
    - i. \$300 was approved for donation to Penelope House
  - b. Christmas Party: cancelled
    - i. \$300 was approved for donation to Samantha Alison Thomas Memorial Scholarship Endowment Fund
  - c. Gold Humanism Honor Society Solidarity Week – February 15-19, 2021
    - i. Student Assembly approved \$350 that was used to purchase items handed out during Solidarity week
  - d. National Public Health Week: April 5-11, 2021
    - i. Student Assembly approved \$600 to provide incentives for those that participated. Leftover funds were returned to Student Assembly.
  - e. USACOM M3 Case Report Symposium: May 21, 2021
    - i. Student Assembly approved up to \$500 to cover cost of thank you gifts for judges.
  - f. Asclepiam Ball
    - i. Due to Covid-19, the Asclepiam Ball was cancelled for 2021.
2. Dates of Special Events, August 2020 – July 2021 were as follows:
  - a. Match Day ceremony for the Class of 2021 was held at USA campus Student Ballroom on March 19, 2021 at 11 a.m. for students only and a live stream was available for family and friends.
  - b. Honors Convocation for the Class of 2021 was held at USA campus Student Ballroom on May 5, 2021.
  - c. USACOM Graduation for the Class of 2021 was held at the Mitchell Center on May 6, 2021.
  - d. USACOM M3 Case Report Symposium was held on May 21, 2021 via Zoom.
  - e. White Coat Ceremony for the Class of 2023 and Gold Humanism Honor Society Induction for the Class of 2022 was held on June 25, 2021 at the Mitchell Center.
  - f. The Wellness Committee was unable to hold in-person events this year due to COVID-19 restrictions.
3. Changes to Student Assembly
  - a. New Student Assembly officers were elected in April 2021 for the 2021-2022 school year.
    - i. The transitional meeting took place on May 12, 2021.
      - President: Sam Thomas
      - Vice President: Baylee Edwards
      - Secretary/Treasurer: Andy Hu
      - SGA Liaison: Natalie Kidd
    - ii. Faculty Advisor: Dr. Kelly Roveda, Dr. Caleb Butts

**Office of Financial Aid**

	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Total Financial Aid	\$10,749,914	\$10,517,598	\$10,570,736	\$10,720,589	\$11,268,453
Students on Aid	272	256	270	243	253
<b>Loans</b>					
Perkins	423,000	0	0	0	0
Direct Unsubsidized	7,828,125	7,674,811	7,623,544	7,573,878	7,813,881
Direct Grad Plus	783,639	1,025,483	1,021,921	1,001,350	1,062,267
Outside Private Loans	0	0	0	0	0
Total Loans	\$9,034,764	\$8,700,294	\$8,645,465	\$8,575,228	\$8,876,148
<b>Scholarships</b>					
University Sponsored	900,064	972,261	1,276,612	1,113,020	1,158,865
Outside Sponsored	138,201	138,866	58,614	290,094	447,983
Military – Army	153,282	93,654	189,522	258,454	221,298
Military – Navy	206,468	216,613	126,048	157,740	164,268
Military - Air Force	88,791	280,409	189,127	163,092	200,950
Alabama VA Benefits	94,840	61,442	31,440	31,476	31,476
US Federal VA Benefits	0	0	0	32,116	31,677
GI Bill	0	0	0	0	31,860
Faculty Staff Reimbursement	133,504	54,059	53,908	99,369	103,928.50
Total Scholarships	\$1,715,150	\$1,817,304	\$1,925,271	\$2,145,361	\$2,392,305.50
<b>Average Indebtedness of a Graduating Senior</b>					
	\$156,242	\$160,870	\$158,602	\$149,721	\$151,927

An Emergency Loan Fund is available to medical students. Loans of up to \$500 may be obtained by students through a fund administered by the Office of Student Affairs and Medical Education for a period of up to 60 days for the purpose of alleviating an unanticipated financial need. There is no interest charged. During the period August 1, 2020, through July 31, 2021, one (1) emergency loan was approved for a total amount of \$500.00. During that period, one (1) loan payment totaling \$500 was paid back into the loan account.

## Office of Diversity and Inclusion

The Office of Diversity and Inclusion (ODI) within the USA College of Medicine is a mission-driven environment with a commitment to making USA COM a better, safer place for every person within our community. As an office, we continually strive to develop and improve policies, best practices, programming, and interventions directed at the outreach, recruitment and retention of a more diverse and inclusive student body, staff and faculty.

Our mission is led by five core values that inform the efforts of this office within the USA College of Medicine, USA Health, and community at large. Those core values are *diversity, inclusion, belonging, equity, and justice*. The report below is organized around these core values to illustrate the mission-driven nature of our work.

As an operating body, our office is composed of:

- *Associate Dean of Diversity and Inclusion*, Dr. Franklin Trimm
- *Assistant Dean of Diversity and Inclusion*, Dr. Johnson Haynes, Jr.
- *Education and Training Specialist*, Tiquera Hall
- *Administrative Assistant*, Sherry Parnell
- *Diversity Coordinator*, LoRen Modisa

We also benefit from and value the support of the USA COM/USA Health Committee on Diversity and Inclusion (CDI) which is integral in the development and oversight of our programmatic efforts.

It is through the support of and collaboration with departments, committees, and offices throughout USA COM and USA Health that the ODI has been able to strengthen and expand efforts throughout 2020-2021 academic year.

### **Diversity**

One strategy to achieving health equity is to have a medical workforce that looks like the community it serves. In striving towards a diverse medical student body, two pipeline programs are coordinated through the ODI as part of the office's outreach and recruitment initiatives. The Diversity, Recruitment, and Enrichment for Admission into Medicine (DREAM) Program, formally known as the Biomedical Enrichment and Recruitment (BEAR) Program, has been in existence since 1985 and continues to develop each year. The DREAM Program aims to prepare first-time college seniors or non-traditional students for admission into and success within medical school through preparation for the Medical College Admission Test (MCAT), building interview and written communication skills, developing teamwork skills and other elements important for medical school success. Students are recruited from colleges and institutions across the state of Alabama and USA service area. Facilitated over the course of an eight-week summer session, students are immersed in coursework, professional development sessions, and cultural immersion experiences led by faculty members. The current director of the DREAM Program is Dr. Jeff Sosnowski (*USA COM Assistant Dean for Medical Education*).

DREAM Program Progress Chart, 2019-2021

<b>Year Entering DREAM</b>	<b>Entered DREAM</b> (# of participants)	<b>Successfully Completed DREAM</b> (# of participants)	<b>Matriculated to USA COM</b> (# of participants)	<b>Matriculated to Other Professional School</b> (# of participants)	<b>Completed MD Program</b> (# of participants)
<b>2019</b>	<b>12</b>	<b>12</b>	<b>8</b>	<b>1</b>	<b>TBD</b>
<b>2020</b> (Virtual Program)	<b>9</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>TBD</b>
<b>2021</b>	<b>13</b>	<b>13</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>

The second pathway program, the SouthMed Prep Scholars (SMPS) Program, also aims to prepare high-achieving pre-medical students for admission into and success within medical school. SMPS occurs over two summers and recruitment begins during a student’s freshman year. Students in SMPS Phase 1 engage in basic science research under the tutelage of investigators within USA College of Medicine, shadowing experiences within the USA Health System and additional professional development activities. Students in Phase 2 have activities similar to DREAM. Students for this program are recruited from colleges and universities across the state of Alabama and Southeast region with a focus on Alabama residents. The current director of the SouthMed Prep Scholars Program is Dr. Johnson Haynes, Jr.

SouthMed Prep Scholars Program Progress Chart, 2019-2021

<b>Year Entering SMPS</b>	<b>Entered SMPS</b> (Phase I)	<b>Successfully Completed SMPS</b> (# of participants)	<b>Matriculated to USA COM</b> (# of participants)	<b>Matriculated to Other Professional School</b> (# of participants)	<b>Completed MD Program</b> (# of participants)
<b>2019</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>TBD</b>
<b>2020</b>	<b>6</b>	<b>5</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>
<b>2021</b>	<b>2</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>

*\*Within the progress charts above, “To Be Determined, TBD” has been placed in categories where program participants’ participation is still ongoing.*

Our pipeline programs address the need for an increased number of student physicians from marginalized communities by intentional recruitment and support. Access to the field of medicine and exposure to URiM physicians and medical students is also critical for a diversified medical workforce. Through events facilitated by the ODI this year, USA COM expanded its reach and engagement with URiM prospective students across our region. In February 2021, led by Dr.

Johnson Haynes, ODI hosted a documentary viewing and discussion of “Black Men in White Coats”, a film illustrating the need for intentional recruitment and support efforts for Black men in medicine.

Several of USA COM’s Black male students as well as Black male physicians from the greater Mobile area served as panelists during the discussion of the film.

Below is a list of the 2021 “Black Men in White Coats” event contributors and partners:

- Big Brothers Big Sisters of South Alabama
- Light of the Village
- 100 Black Men of Greater Mobile
- Boys & Girls Clubs of Mobile,
- Mobile Kappa League
- Mobile Alpha Elites
- Omega Lamplighter
- Spring Hill College

In April 2021, ODI, in partnership with USA COM Office of Admissions, hosted the first COM Admissions Medical Student Second Look. The purpose of this event was to recruit already-accepted USA COM students by highlighting reasons why USA COM is an attractive place for URiM students to study medicine, showing accepted students the diversity within USA COM/Health, and informing accepted students of support mechanisms and community that await them here if they decide to attend.

### **Inclusion and Belonging**

The creation of an inclusive environment where students feel as if they belong requires collaboration and collectivism. The ODI values its relationships with partners within USA COM, within the larger USA community, and with our external partners throughout our service area and the state of Alabama.

Within USA COM, ODI has the continued privilege of working alongside the offices of Medical Education, Faculty Affairs, Graduate Medical Education, Student Affairs, and Admissions to ensure USA COM is positioned to be responsive to our ever-changing, increasingly diverse communities. The benefits of these relationships are multitudinous and can be seen throughout our institution from curriculum development to faculty recruitment to student admissions processes.

Within the larger university community, the ODI works actively with the following organizations:

- Minority Association of Pre-Health Students (MAPS)
- Alpha Epsilon Delta (AED) Pre-Health Honor Society
- USA Center of Academic Excellence
- USA Office of Academic Advising and Transfer Services
- USA Office of Diversity, Equity and Inclusion
- USA Black Faculty and Staff Association

Together, these alliances are making the path to medical school for URiM students more visible, more accessible, and more navigable.

Partnerships with Historically Black Colleges and Institutions (HBCUs) such as Tuskegee University, Xavier University (New Orleans), and Spelman College (Atlanta, Georgia) and other state-wide institutions such as Auburn University and University of Alabama at Huntsville have given ODI the opportunity to engage with competitive and scholarly URiM Alabama residents throughout the region. GEAR UP Alabama, a grant-funded program for rural high school students in the Black Belt region of Alabama, has afforded ODI the opportunity to build rapport and provide early access and exposure to some of Alabama's future physicians.

As an office, ODI understands that recruitment is only a small piece of the puzzle. Pride is taken to support current medical students by celebrating what makes each student unique and how that uniqueness positively impacts everyone. The ODI supports several student-led groups that not only serve as safe spaces of community for medical students but also as means of peer support, education and community outreach.

Those groups include:

- Student National Medical Association (SNMA)
- American Medical Women's Association (AMWA)
- MedPride and Allies
- Culinary and Lifestyle Medicine Interest Group (CLMIG)
- Muslims in Medicine (MIM)
- Medical Spanish Interest Group (MSIG)

These groups, in partnership with the ODI, develop, host and facilitate Diversity & Inclusion "Lunch and Learn" sessions that are open to all students, faculty, and staff.

Celebrating uniqueness and individual identity are integral to the creation of spaces of belonging. Over the past year, ODI acknowledged several holidays and commemorative celebrations to increase visibility and declare solidarity with our diverse student, staff, and faculty body within USA COM and USA Health. Beginning in January 2021, ODI has acknowledged and celebrated the following holidays:

- Dr. Martin Luther King, Jr. Day
- Black History Month
- Women's History Month
- Asian American and Pacific Islander Month
- Ramadan & Eid al Fitr
- Pride Month

### **Equity and Justice**

The Office of Diversity and Inclusion at the University of South Alabama College of Medicine was tasked with identifying and addressing areas for improvement in the culture and climate of both the USA College of Medicine and USA Health. The Justice Initiative started with a survey, conducted by



the USA Office of Institutional Effectiveness, that was distributed to USA College of Medicine medical and graduate students, faculty and staff.

The themes focus on racial justice such as areas in Underrepresented minority student and faculty representation, anti-racist training and curriculum, and equal access. The information collected from the survey was used to develop plans for improvement goals for the College of Medicine and will be tracked by the Committee on Diversity and Inclusion as part of a COM continuous quality improvement process.

The Office of Diversity and Inclusion added a full-time Diversity and Inclusion Education and Training Specialist to expand reach and breadth of development and training within USA COM and USA Health. This individual is actively contributing to all training and is developing more advanced unconscious bias training and more context specific training to expand the outreach, and faculty and staff development offerings.

- **285** participants trained in unconscious bias, including a majority of USA COM and USA Health leadership, and almost all residency program leaders and selection committee members as well as Primary Care Pathway faculty.
- **13** participants on the USA COM Admissions committees (PhD and MD programs) underwent unconscious bias training in preparation for upcoming admission cycles.
- **246** medical student participants trained in unconscious bias, including M1 students during first year orientation and M4 students during their transition to residency.
- **23** participants amongst USA COM & USA Health received training on “Why Diversity Matters.”
- **71** medical student participants trained in creating safe spaces and patient care approaches for LGBTQ+ members of the healthcare community and the patients we serve.
- **83** participants trained on the Power of Hate, including M3 medical students and graduate students.

Overviews of unconscious bias continued to be included in all leadership selection committee orientations that were initiated during this academic year. A diversity, equity, and inclusion advocate is appointed to all leadership selections committees.

The Primary Care Pathways Program is an educational track that provides 4 years of specialized training in primary care. The goal of the program is to increase primary physicians in underserved communities. The Office of Diversity and Inclusion partners with the Primary Care Pathways Program by providing core faculty & curriculum.

As the year progresses, the ODI looks forward to continued growth and expanded reach for the purpose of impacting healthcare outcomes for the state of Alabama one student, faculty, and staff-person at a time.

## **2020-2021 Office of Admissions**

### Applicant and Acceptance Data

The University of South Alabama College of Medicine participates in the American Medical College Application Service (AMCAS). The period for receiving AMCAS applications to the College of Medicine for the class entering August 2, 2021, opened June 1, 2020, and closed November 1, 2020. The matriculating Class of 2021 represents twenty-two (22) colleges and universities from the United States. Seventy-four percent (74%) of this year's class, however, come from the four (4) largest universities in the state. Additional details of the 2020-2021 admissions cycle are shown in Table 1.

### Recruitment and Retention Efforts

1. Undergraduate campus recruiting visits were done via ZOOM. Sophomore interviews were implemented by "teams" of faculty and administration. These USACOM recruiting teams interviewed and counseled over two hundred (200) premedical students at seven (7) colleges and universities via Zoom.
2. The Director of Admissions served as the admissions counselor and advised prospective students on a daily basis. In addition, selected faculty members advised prospective applicants periodically.
3. Premedical visitation day programs were cancelled in 2021 due the COVID-19 pandemic.
4. The following publication was updated and approved by the Admissions Committee: Policies and Procedure Manual. The website was also updated and maintained by the Admissions Office.
5. Special admissions reports and correspondence were produced and distributed annually to in-state college premedical advisors and selected out-of-state college advisors.
6. A total of sixteen (16) Interview Day programs were conducted from September until February. The interviewers, primarily College of Medicine clinical and basic science faculty, serve as members of the Committee on Admissions and/or *ad hoc* members. These members interviewed two hundred three (203) candidates; each interviewee was interviewed by two committee members, giving a total of four hundred six (406) interviews. These interviews were conducted virtually via ZOOM.
7. The following Admissions Committee subcommittees were active during 2020-2021: Interview Selection Subcommittee, the Scholarships Subcommittee, Wait List Subcommittee, and the Early Assurance Subcommittee.

**Table 1.** University of South Alabama College of Medicine Admissions Report

	2018	2019	2020	2021
<b><u>Total Applicants (Completed Secondary Applications)</u></b>	1604 (767)	1554 (860)	1433 (872)	1830 (1062)
Residence: Alabama	471 (409)	430 (387)	460 (425)	535 (474)
Out-of-State (OOS)	1079 (322)	1059 (426)	928 (410)	1218 (536)
Service Areas (FL & MS)	54 (36)	65 (47)	45 (37)	68 (50)
Rural	101 (99)	67 (62)	89 (89)	103 (80)
Alabama Female	213 (188)	193 (179)	239 (224)	301 (265)
Alabama Black	45 (34)	41 (38)	57 (49)	80 (71)
Out-of-State Black	95 (28)	106 (42)	112 (32)	125 (62)
AL Other Underrepresented Minorities*	28 (26)	22 (22)	23 (13)	28 (20)
OOS Other Underrepresented Minorities	148 (44)	150 (48)	147 (52)	152 (55)
<b><u>Total Applicants Interviewed</u></b>	224	198	238	203
Residence: Alabama	215	182	217	189
Out-of-State	5	7	11	4
Service Areas (FL & MS)	4	9	10	10
Rural	50	28	49	37
Female	102	95	117	112
Black	20	19	26	29
Other Underrepresented Minorities	7	7	7	21
<b><u>Total Applicants Accepted</u></b>	131	141	122	126
Residence: Alabama	123	127	106	118
Out-of-State	6	8	8	3
Service Areas (FL & MS)	2	6	8	5
Rural	31	23	25	21
Female	67	76	66	77
Black	16	17	17	17
Other Underrepresented Minorities	5	6	3	12
<b><u>Total Matriculants</u></b>	74	74	74	74
Average MCAT	508	508	507	509
Average GPA	3.79	3.82	3.80	3.81
Early Decision Program	18	15	12	21
Residence:				
Alabama	69	65	65	69
Out-of-State	3	4	5	2
Service Areas (FL & MS)	2	5	4	3
Rural	18	8	14	15
Female	35	42	43	45
Black	5	8	11	7
Other Underrepresented Minorities	5	4	1	5

\*Other Underrepresented Minority: Hispanic ethnicity, American Indian

**2020-2021**  
**Summary of Activities**  
**Office of Continuing Medical Education**

**I. NATIONAL PROFESSIONAL RECOGNITION**

*Sharrie D'Andrea Cranford*: Editor of the Society for Academic Continuing Medical Education's tri-annual report the INTERCOM, as well as a standing member of the Communications Committee. Continues to serve as a Surveyor for the Accreditation Council for Continuing Medical Education and appointed as a Surveyor for Joint Accreditation. Founder and Chair of the Alabama Continuing Medical Education Coalition which includes members from most continuing medical education providers in Alabama.

**II. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS**

The University of South Alabama (USA) Office of Continuing Medical Education (OCME) received a four-year accreditation as a provider of Interprofessional Continuing Education (IPCE). As a jointly accredited provider, USA OCME can now offer continuing education credits to physicians, nurses, mental health professionals, and pharmacists, together or separately, through the Accreditation Council for Continuing Medical Education, the American Nurses Credentialing Center, and the Accreditation Council for Pharmacy Education.

During 2020-2021, the Office of Continuing Medical Education (OCME) provided numerous educational activities that addressed the ever-changing practice gaps of all healthcare providers including the healthcare team. The OCME coordinated CME activities provided by the clinical and university academic departments, the OCME, and outside agencies. There were approximately 43 regularly scheduled series (Grand Rounds), 18 conferences, 17 disaster preparedness seminars, and 3 online activities, all combining for 916.75 CME hours of instruction and collaboration. In total 7,295 physicians and 3,573 non-physicians were awarded continuing education credits. Activities were jointly provided through the collaboration with the Providence Foundation, Foundation for Sickle Cell Disease Research, Global Partnership for Telehealth, HomeTown Health, Gulf Coast Patient Care Network, Springhill Medical Center, USA College of Business and Department of Education, Veterans Administration, and other organizations in our region.

**III. SIGNIFICANT PROFESSIONAL AND CME ACHIEVEMENTS**

- Added national AAPA, ADA, and BOC credit offerings.

CME Plans for 2022

- Improve offerings of Joint Accreditation criteria for commendations.
- Add AAPA, BOC, and ADA criteria to Policy and Procedure Manual.
- Create committee for renewed five-year strategic plan.

**2020-2021  
Summary of Activities  
Office of Graduate Medical Education**

**I. Organizational Structure**

Dr. Carole Boudreaux served as Associate Dean for Graduate Medical Education (GME), Designated Institutional Official (DIO), and chair of the Graduate Medical Education Committee (GMEC) at the University of South Alabama that together oversee all GME training programs at the institution.

The GME Office implements policies of the GMEC. The ACGME charges the GMEC with monitoring and advising on all aspects of residency education including compliance with ACGME requirements and creating a strong and supportive learning environment for the trainees. The GMEC is composed of program directors, teaching faculty, peer-selected residents and fellows and designated representatives of the major teaching hospitals including representation from USA Health Quality and Safety. The GMEC is responsible for reviewing current issues facing residency and fellowship programs as well as for developing institutional policies and procedures to ensure quality of education and of the clinical learning environment. GMEC activities are reported by the Associate Dean to the Vice President for Medical Affairs/Dean of the College of Medicine.

**II. Overview of GME Programs and Accreditation**

As detailed below, University of South Alabama Health sponsors 12 ACGME accredited residency and 11 ACGME accredited fellowship programs with a combined total of 295 training positions. The ACGME approved permanent complement increases for the Internal Medicine, General Surgery, Pulmonary and Critical Care Medicine and Gastroenterology programs. The institution also sponsors 1 non-ACGME accredited fellowship program. During the 2020 – 2021 academic year, the majority of residency and fellowship positions were filled through the National Resident Matching Program (NRMP) main match and the Medical Subspecialty NRMP Match with 71 physicians completing training during the 2020 – 2021 academic year.

**Residency Programs**

<b>Program Name</b>	<b>Program Director</b>	<b>Program Coordinator</b>
Emergency Medicine	Edward Panacek, M.D.	Nikki Reymundo
Family Medicine	Ehab Molokhia, M.D.	Stacey Hartman Sandra Shaw-Cantrelle
Internal Medicine	Judy Blair-Elortegui, M.D.	Leah Musgrove Kimberly Eardley
Internal Medicine/Pediatrics	Grace Hundley, M.D.	Marley Harris
Neurology	William Kilgo, M.D.	Leigh Rowell
Obstetrics & Gynecology	Tracy Roth, M.D.	Shavella Everett
Orthopedic Surgery	Jeffrey Brewer, M.D.	Rhonda Smith
Pathology	Jacek Polski, M.D.	Farhana Akther
Pediatrics	Richard Whitehurst, M.D.	Latasha Williams

		Jessica Petro
Psychiatry	Luke Engeriser, M.D.	Bayleigh Andrews
Radiology	Samuel McQuiston, M.D.	Shunda Fakaha
General Surgery	Leander Grimm, M.D.	Tyronda Rogers Cynthia Dennis

### Fellowship Programs

<b>Program Name</b>	<b>Program Director</b>	<b>Program Coordinator</b>
Cardiovascular Disease	Bassam Omar, M.D.	Donna Gregory
Child & Adolescent Psychiatry	Edgar Finn, M.D.	Bayleigh Andrews
Clinical Neurophysiology	Juan Ochoa, M.D.	Leigh Rowell
Gastroenterology	Jack Di Palma, M.D.	Tracy Terpening
Medical Oncology	Brian Persing, M.D.	Alana Bell
Pulmonary Disease & Critical Care Medicine	Brian Fouty, M.D.	Ruth Hart
Sports Medicine (FM) - Andrews	Josh Hackel, M.D.	Ashley Mixon
Surgical Critical Care	Christopher Kinnard, M.D.	Tyronda Rogers Cynthia Dennis
Sports Medicine (FM) - USA	Peter Rippey, M.D.	Stacey Hartmann Sandra Shaw-Cantrelle
Addiction Medicine (Psychiatry)	Luke Engeriser, M.D.	Bayleigh Andrews
Gynecologic Oncology	Jennifer Pierce, M.D.	Alana Bell
Renal and Genitourinary Pathology	Guillermo Herrera, M.D.	Farhana Akther

### ACGME Accreditation

USA Health has maintained full accreditation as a sponsoring institution by the Accreditation Council for Graduate Medical Education (ACGME), with its most recent renewal of accreditation on January 27, 2021. All eligible GME programs are accredited by the ACGME.

One new fellowship program, the USA Gynecologic Oncology Fellowship under the Obstetrics and Gynecology core program, received initial accreditation by the ACGME March 31, 2021.

The USA Family Medicine Residency Program and its associated fellowship in Primary Care Sports Medicine, the Obstetrics & Gynecology Residency Program, and the General Surgery Residency Program and its associated fellowship in Surgical Critical Care Program completed their self-studies prior to suspension of in person site visits by the ACGME due to the COVID-19 pandemic. Site visits resumed during the Fall of 2020 using a virtual format. The institution is awaiting rescheduling of the previously mentioned programs' site visits, as well as the site visit for the Emergency Medicine Program which has initial accreditation. The pediatrics program underwent a focused review site visit December 9, 2020. The Gynecologic-Oncology Fellowship Program underwent a virtual site visit as part of its initial accreditation. Our sponsoring institution, USA Health, underwent a virtual ACGME CLER COVID visit July 21 - 22, 2021.

Residency Programs

<b>Program Name</b>	<b>Training Positions</b>	<b>Trained Residents</b>	<b>Accreditation Status</b>
Emergency Medicine	18	15	Initial Accreditation
Family Medicine	18	17	Continued Accreditation
Internal Medicine	48	49	Continued Accreditation
Internal Medicine/Pediatrics	11	8	Continued Accreditation
Neurology	12	12	Continued Accreditation
Obstetrics & Gynecology	16	15	Continued Accreditation
Orthopedic Surgery	15	15	Continued Accreditation
Pathology	15	13	Continued Accreditation
Pediatrics	36	37	Continued Accreditation
Psychiatry	20	18	Continued Accreditation
Radiology-Diagnostic	20	20	Continued Accreditation
Surgery	34	30	Continued Accreditation

Fellowship Programs

<b>Program Name</b>	<b>Training Positions</b>	<b>Trained Fellows</b>	<b>Accreditation Status</b>
Child & Adolescent Psychiatry	4	3	Continued Accreditation
Cardiovascular Disease	6	6	Continued Accreditation
Clinical Neurophysiology	1	0	Continued Accreditation
Gastroenterology	6	6	Continued Accreditation
Pulmonary Disease & Critical Care Medicine	6	6	Continued Accreditation
Medical Oncology	4	4	Continued Accreditation
Sports Medicine (FM) - Andrews	1	2	Continued Accreditation
Surgical Critical Care	1	0	Continued Accreditation
Addiction Medicine (Psychiatry)	1	0	Initial Accreditation
Sports Medicine (FM) - USA	1	0	Initial Accreditation
Gynecologic Oncology	1	0	Initial Accreditation
Renal and Genitourinary Pathology	1	0	No Accreditation Available

### **III. Summary of GME Activities**

The Associate Dean and GME Office communicate with each of the GME programs to maintain awareness of the requirements for the ACGME accreditation and the Clinical Learning Environment Review (CLER). An additional Institutional GME Accreditation Specialist was hired, bringing the filled GME Office staff positions to four. The programs are divided among these GME Accreditation Specialists who serve as GME Office liaisons to improve efficiency, oversight, communication and collaboration. The House Staff Office on the 7th floor of USA Health University Hospital was relocated to the GME Office space in the Mastin Building, allowing space for an additional call room.

#### **Clinical Learning Environment**

USA Health has continued its consulting relationship with HPI Press Ganey to educate all health care providers, including the residents and fellows, in our institution's ongoing efforts to build a high reliability organization. The "Diagnostic Assessment" phase has been completed and shared with stakeholders. Representatives from the GME Community are now engaging in the "Co-design for Education and Training" phase.

The USA Health House staff Quality and Safety Council, mentored by the CMO and other quality and safety representatives, continues to evolve and now includes a resident/fellow representative from each GME program. The council chair presents to the USA Health Performance Improvement Council, GMEC and House Staff Council to ensure ongoing GME collaboration and house staff engagement in USA Health quality and safety initiatives. Kristen Noles, DNP, USA Health Process Improvement Coordinator was appointed USA Health Quality and Safety GME liaison. Under her tutelage, residents and fellows have been directly engaged in interprofessional and interdisciplinary quality and safety initiatives such as the HAC reduction program and others. The chair of the House Staff Council presents monthly updates to the Medical Executive and GME Committees. Resident/fellow engagement also resulted in improved workflows and Cerner usage, extended cafeteria hours, additional lactation space, and changes in GME sick and vacation day policies allowing for more flexibility for leaves of absence.

#### **GMEC Subcommittee on Simulation, Education, and Assessment**

The subcommittee maintains oversight of simulation and skills laboratories and facilities to advance the acquisition and maintenance by house staff of clinical skills with a competency-based method of evaluation. The subcommittee has been engaged in the process of developing the simulation lab at USA Health, University Hospital.

#### **GMEC Diversity, Equity and Inclusion Subcommittee**

The GMEC established this new subcommittee toward the end of the 2020-2021 academic year. Its primary aim is to develop and support initiatives that create a diverse, equitable, inclusive, and safe environment for resident physicians at USA Health. The committee will achieve this aim through a variety of short- and long-term goals involving recruitment of a diverse faculty and resident workforce, promoting a just, safe, and inclusive culture through education of our current workforce, and utilizing community outreach to support future generations of physicians from URIM groups. An additional aim will be to train physicians that will go on to practice and promote



equity in medicine in their future careers. Dr. Franklin Trimm, USA COM Associate Dean for Diversity and Inclusion, will serve as an ad hoc member of the subcommittee. Dr. Trimm has already engaged resident representatives in the USA COM Justice Initiative.

#### GMEC Subcommittee on Well-being

In recognition of the importance of compliance with ACGME requirements, each program is charged with establishing a clinical learning environment that fosters compliance with the ACGME requirements. The GMEC assumes responsibility for the well-being of house staff at USA and supports all GME program efforts toward this purpose. Each program and the institution have developed policies and procedures governing the clinical experience and education. The Well-being Subcommittee of the GMEC developed a GME Well-Being Curriculum available to all programs based on the Substance Abuse and Mental Health Services Administration's Eight Dimensions of Wellness. Resources for Physical and Financial Well-being were distributed to the programs. Other well-being initiatives included a day-long "Caring for the Coordinator" seminar, implementation of policies and procedures for parental, caregiver, and medical leave in line with the new ABMS guidelines, 5 "Fifth Friday" resident/fellow appreciation events, establishment of the GME Pulse Newsletter and participation in the Gold Humanism Society "Thank A Resident Day."

The USA House staff Council, composed of senior fellows and the chief residents from the GME Programs, provides a platform for house staff to address clinical and work-related concerns with USA Health administrators and GME leadership, including patient care issues, improving efficiency in clinical workflow, workplace safety, and the safety of residents and fellows. This year, the House staff Council was engaged to ensure ACGME required resources related to resident and fellow space and safety were met as part of the 10th and 11th floor expansions at University Hospital. The council also championed two events that raised funds and collected donations for Feeding the Gulf Coast and Toys for Tots. Other House Staff Council initiatives included collaboration with USA Health IT in adopting patient list sharing/hand-off tools and HIPAA compliant texting.

#### Faculty, Resident, Program Director, Program Coordinator and GME Program Development and Support

The GME Office, in conjunction with the Director of Healthcare Leadership Initiatives, USA College of Medicine/Mitchell College of Business, initiated a seven-month Academic Medicine Coaching Training Program for an inaugural UME and GME faculty cohort, as well as an eight-week Resiliency Training Program being piloted with the Orthopedic Surgery Residents and Faculty and the Ob-Gyn Faculty.

The GME Office sponsored a Partnering Session between GME stakeholders and USA Health Executive and Administrative Leadership conducted by Dr. Jeanne Maes, Professor of Management, Mitchell College of Business. Action plans for Communication, Quality and Safety, Well-being and Professionalism that aligned with areas being addressed by HPI Press Ganey and USA Health Human Resources were developed.

The GME Office sponsored New Innovations training for the GME Office Staff and the less experienced program coordinator to maximize and standardize the use of this tool. Monthly "GME Action Items" were instituted to ensure programs are on track to complete program accreditation activities in a timely manner. The GME Office also standardized program level work hours monitoring and trainee file organization. The program also coordinators received a competitive salary adjustment.

Liaisons from the USA Health IT Department and Human Resources were appointed to work directly with the GME Office, DIO, GMEC and programs on GME related issues and concerns.

The programs had a successful virtual interview season aided by institutional support for hiring a professional production company to develop institutional and program-specific recruitment videos and purchasing interview management and scheduling software.

A collaborative relationship with Dr. Emily Wilson, Associate Dean for Faculty Affairs and Faculty Development, was established to assist with meeting ACGME-specific requirements for faculty development.

A consulting relationship has been established with the USA Department of Counseling and Instructional Sciences to provide instructional design expertise to ensure the residency/fellowship programs are meeting their accreditation standards and improving their instructional and assessment systems. These individuals will also support the DIO and GMEC in developing an institutional curriculum to meet the ACGME Common Program Requirements.

#### Resident and Fellows Scholarship Exposition

The USA Resident and Fellow Scholarship Exposition was conducted June 17,2021, via a virtual exhibit hall following a hiatus last year due to the COVID-19 pandemic. There were a total of 40 poster entries in the categories of "Clinical Vignettes/Case Reports", "Clinical and Translational Research", and "Quality Improvement and Performance Improvement". Cash awards were presented to the winning posters in the latter two categories.

**2020-2021**  
**Summary of Activities**  
**Medical Student Summer Research Program**

The Forty-Eight Annual Medical Student Research Day was held on Friday, July 23, 2021 hosting over 100 attendees in the Medical Sciences Building for both oral and poster presentations. 54 first and second-year medical students participated in research projects with basic science and clinical faculty in the College of Medicine during the summer. A weekly seminar series introduced students to important research related topics. The program aims to highlight the relation between scientific discoveries and their application in clinical medicine.

Errol Crook, M.D., Abraham A. Mitchell Professor and Chair Department of Medicine, University of South Alabama, was the keynote speaker. Dr. Crook's seminar was entitled, "*From Bench to Bedside to Community: The Path(s) for Medical Research to Effectively Address Health Disparities*".

Culmination of the summer's work was the presentation of 8 oral and 46 poster presentations at the Annual Medical Student Research Day. Student presentations and their faculty sponsors were as follows:

**ORAL PRESENTATIONS**

NEGATIVE IMPACTS OF COVID-19 PANDEMIC ON PHYSICIAN'S WELL-BEING IN UNITED STATES OF AMERICA. **Gabrielle L. Brumfield**, Rising Sophomore. Sponsored by Athira Nair, M.D., F.A.A.P. Department of Pediatric Cardiology.

IMPACT OF UNIVERSAL ELECTRONIC HEALTH RECORDS ON TIME TO TREATMENT INITIATION IN NEWLY DIAGNOSED BREAST CANCER PATIENTS. **Brennan Smith**, Rising Sophomore. Sponsored by Joe S. Liles, M.D., Department of Surgical Oncology.

DEVELOPMENT OF NOVEL FLUORESCENT-LINKED IMMUNOSORBENT ASSAY TO MEASURE ANTIBODY RESPONSES IN VACCINATED INDIVIDUALS. **Ben Kimbell**, Rising Sophomore. Sponsored by Robert Barrington, Ph.D., Department of Microbiology and Immunology & the Center for Lung Biology.

SIDE EFFECTS AFTER COVID-19 VACCINATION IN UNIVERSITY OF SOUTH ALABAMA STUDENTS AND EMPLOYEES. **Arcole Brandon**, Rising Sophomore. Sponsored by Brian Fouty, M.D., Department of Internal Medicine and Pharmacology.

PERICYTE DYSFUNCTION IN AGING AND ALZHEIMER'S DISEASE. **Ryleigh Randall**, Incoming Freshman. Sponsored by Dr. Amy Nelson, Ph.D., Department of Physiology And Cell Biology.

A NOVEL METHOD FOR THE QUANTIFICATION AND CHARACTERIZATION OF MTDNA DAMPS IN CELL FREE PLASMA OF ACUTE RESPIRATORY FAILURE PATIENTS. **Emily Hartsell**, Incoming Freshman. Sponsored by Raymond J. Langley, Grant Daly, Viktor Pastukh, Mark N. Gillespie, Department of Pharmacology.

VECTOR COMPETENCE OF THE INVASIVE ASIAN LONGHORNED TICK, HAEMAPHYSALIS LONGICORNIS, FOR DEER TICK VIRUS UNDER LABORATORY CONDITIONS. **Erik Herslebs**, Rising Sophomore. Sponsored by Meghan Hermance, Ph.D., Department of Microbiology & Immunology, Laboratory Of Infectious Disease.

TRANSFUSION OF FRESH FROZEN PLASMA CONTAINING MTDNA DAMPS ADVERSELY IMPACTS CLINICAL OUTCOMES IN MODERATELY INJURED HUMAN PATIENTS. **Jessica Moore**, Rising Sophomore. Sponsored by Mark N. Gillespie, Viktor Pastukh, Grant Daly, Raymond J. Langley, Emily Hartsell, Yanni-Leei Lee, Jon D. Simmons, Matthew E. Kutcher, Departments of Pharmacology and University Of Mississippi School Of Medicine, Department Of Surgery.

### **POSTER PRESENTATIONS**

COMPARISON OF ADULT AND PEDIATRIC INFLAMMATORY BOWEL DISEASE IN CAUCASIAN AND AFRICAN AMERICAN POPULATIONS IN LOWER ALABAMA. **Krishna V. Amin**, Incoming Freshman. Sponsored by Carlos A. Galliani, M.D. and Pallavi A. Patil, MBBS, M.D., USA Department of Pathology.

COMPREHENSIVE CHARACTERIZATION OF THE SMALL RNAS EXPRESSED BY SARS-COV-2. **Brianna Watters**, Incoming Freshman. Sponsored by Glen Borchert, Ph.D., Department of Pharmacology, Center for Lung Biology.

MEASURING THE EFFECTS OF TRANSFUSION WITH FLUIDS CONTAINING CELLULAR DEBRIS ON PLASMA DNASE IN A PORCINE MODEL OF HEMORRHAGIC SHOCK. **Luke Harris**, Rising Sophomore. Sponsored by Jon Simmons, M.D., Department of Surgery, and Jonathon Audia, Ph.D., Department of Microbiology and Immunology.

ASSESSMENT OF CARDIOVASCULAR DISEASE RISK FACTOR CONTROL IN TRIPLE NEGATIVE BREAST CANCER PATIENTS. **Saad Awan**, Rising Sophomore. Sponsored by Christopher Malozzi, D.O., Department of Internal Medicine, Cardiology.

UNDERSTANDING SURGICAL VOLUME AND ACADEMIC PRODUCTIVITY OF PEDIATRIC SPINAL DEFORMITY. **Robert Rella**, Rising Sophomore. Sponsored by Amy Nelson, Ph.D., Department of Physiology.

COMPARING PFIZER/BIONTECH'S BNT162B2 VACCINE EFFICACY AMONGST DIFFERENT AGE GROUPS. **Brandon Webb**, Rising Sophomore. Sponsored by Jonathon P. Audia, Ph.D., Department of Microbiology and Immunology.

PERICYTE DYSFUNCTION IN ALZHEIMER'S DISEASE. **Hanna Bobinger**, Incoming Freshman. Sponsored by Amy Nelson, Ph.D., Department of Physiology & Cell Biology.

SOCIOECONOMIC STATUS AND POPULATION DENSITY AS PREDICTORS OF OPERATIVE OUTCOMES IN DEFINITIVE SURGICAL TREATMENT OF RECTAL CANCER. **Brandon Rosser**, Rising Sophomore. Sponsored by Leander Grimm, M.D., Department of Surgery.

WOUND REPAIR IN HYPER-IGE SYNDROME: FORMYL PEPTIDE RECEPTORS AS A NOVEL THERAPEUTIC TARGET. **Rachael Motamed**. Incoming Freshman. Sponsored by Robert Barrington, Ph.D., Department of Microbiology and Immunology.

MELANOMA CARE DURING THE COVID-19 PANDEMIC: PERCEPTION VS. REALITY. **Madeleine Boudreaux**, Rising Sophomore. Sponsored by J. Harrison Howard, MD FACS, Department of Surgery.

EVALUATION OF EARLY TREATMENT OF TIBIA PLAFOND FRACTURES. **David Salchert**, Rising Sophomore. Sponsored by Jeffrey Brewer, M.D., Department of Orthopaedic Surgery.

DEFINING NOVEL SDRNA CONTRIBUTIONS TO PROSTATE CANCER. **Yulong Huang**, Incoming Freshman. Sponsored by Glen Borchert, Ph.D., Department of Pharmacology.

A BIOLOGICAL LINK FOR BREAST CANCER DISPARITIES: THE INTERPLAY OF INFLAMMATORY CYTOKINES. **Kiley Brady**, Rising Sophomore. Sponsored by Seema Singh, Ph.D., Department of Pathology.

A REVIEW OF OUTCOMES OF LOW VERSUS STANDARD PRESSURE PNEUMOPERITONEUM IN LAPAROSCOPIC COLORECTAL AND GASTROINTESTINAL SURGERIES. **John Paul Saway**, Rising Sophomore. Sponsored by William Richards, M.D., Department of Surgery.

EXCITATION SCAN-BASED HYPERSPECTRAL IMAGING OF CALCIUM SIGNALS IN HUMAN AIRWAY SMOOTH MUSCLE CELLS. **Zara Ijaz**, Rising Sophomore. Sponsored by Thomas Rich, Ph.D., Department of Pharmacology and the Center for Lung Biology.

FACTORS INFLUENCING RECRUITMENT AND RETENTION OF CLINICAL PRECEPTORS IN MEDICAL EDUCATION. **Lauren Mussell**, Rising Sophomore. Sponsored by Elizabeth Minto, M.D., Department of Medical Education.

EVALUATING THE EFFECTIVENESS OF ALLOGENEIC MICRONIZED AMNIOTIC MEMBRANE PRODUCT FOR THE TREATMENT OF HIDRADENITIS SUPPURATIVA. **Minye Seok**, Rising Sophomore. Sponsored by Daniel McMahon, M.D., Department of Surgery.

FACTORS PREDICTING 30-DAY READMISSION FOLLOWING TRANSCATHETER AORTIC VALVE REPLACEMENT (TAVR). **John (Jack) Galla**, Rising Sophomore. Sponsored by: Amod Amritphale, M.D., Department of Internal Medicine, Cardiology.

IMPACT OF COVID-19 PANDEMIC ON THE MENTAL WELLBEING OF ADOLESCENTS IN THE USA. **Justin Penninger**, Rising Sophomore. Sponsored by Dr. Athira Nair, M.D., Department of Pediatrics, Cardiology.

METABOLIC BIOMARKERS MEASURED AT PATIENT DISCHARGE PREDICT LONG-TERM PHYSICAL FUNCTION IN SURVIVORS OF ACUTE RESPIRATORY FAILURE. **Trentyn Shaw**, Rising Sophomore. Sponsored by Raymond Langley, Ph.D., Department of Pharmacology.

INACTIVATION OF TYPE 4 CYCLIC-AMP PHOSPHODIESTERASE SUBTYPES 4B AND 4D INDUCE WEIGHT LOSS AND IMPROVE GLUCOSE HANDLING IN MICE. **Daniel Ireland**, Rising Sophomore. Sponsored by Wito Richter, Ph.D., Department of Biochemistry and Molecular Biology, Center for Lung Biology.

LGBTQ+ HEALTH EDUCATION AT THE UNIVERSITY OF SOUTH ALABAMA COLLEGE OF MEDICINE. **Taran S. Carrasco**, Rising Sophomore. Sponsored by Franklin Trimm, M.D., Office of Diversity and Inclusion.

ANALYZING CONFORMATION-SENSITIVE ANTI-P53 ANTIBODIES IN TRIPLE-NEGATIVE BREAST CANCER. **Cade Smelley**, Incoming Freshman. Sponsored by Luis del Pozo-Yauner, M.D., Ph.D., Elba Turbat-Herrera, M.D., Veronica Ramirez-Alcantara, Ph.D., Sara Avalos, M.D., Terry Pierce, HT, and Pamela Campbell, P.A., HTL, Department of Pathology.

QUANTIFICATION OF POST-ACUTE SEQUELAE OF COVID-19 AND IMPLICATIONS FOR COVID-19 VACCINATION. **Sela Renee Ivy**, Rising Sophomore. Sponsored by Casey L. Daniel, Ph.D., MPH, Department of Family Medicine.

AMBIGUITY IN CT REPORTING FOR PEDIATRIC APPENDICITIS. **Rachel Emig**, Rising Sophomore. Sponsored by Charles Hartin, Jr., M.D., Department of Pediatric Surgery.

BARRIERS TO THE RETENTION OF HUMAN MITOCHONDRIAL DNA IN HUMAN-MOUSE HYBRIDS. **Anthony Fant**, Incoming Freshman. Sponsored by Dr. Mikhail Alexeyev, Ph.D., Department of Physiology and Cell Biology.

EFFICACY OF A NOVEL RESISTANCE EXERCISE STRATEGY AT PREVENTING COGNITIVE DECLINE VIA VASCULAR ENHANCEMENTS IN AFRICAN AMERICANS. **Joshua J. Smith**, Rising Sophomore. Sponsored by Amy R. Nelson, Ph.D., Department of Physiology and Cell Biology and Joshua L. Keller, Ph.D., Department of Health, Kinesiology, and Sport.

A CRISPR/Cas9 GENETIC MODEL TO STUDY TUMOR INDUCED NEUROGENESIS. **Brenna Katz**, Rising Sophomore. Sponsored by Simon Grelet, Ph.D., Department of Biochemistry and Molecular Biology.

ESTABLISHING MESANGIAL STEM CELL LINES CAPABLE OF EXPRESSING MMP7 TO TREAT GLOMERULOSCLEROSIS. **William Farley**, Rising Sophomore. Sponsored by Jiamin Teng, M.D., Ph.D., Department of Pathology.

CT SCAN RADIATION FOR APPENDICITIS AT REFERRING HOSPITALS COMPARED TO A TERTIARY CENTER. **Elizabeth Statham**, Rising Sophomore. Sponsored by Dr. Charles Hartin, M.D., Department of Pediatric Surgery.

DEVELOPMENT OF A CELL FUSION ASSAY TO EVALUATE NEUTRALIZING CAPACITY OF SARS-COV-2 VACCINE PRODUCED ANTIBODIES. **Peter Whitehurst**, Incoming Freshman. Sponsored by Brian Fouty M.D., Department of Pharmacology and the Center for Lung Biology.

USE OF LATERAL FEMORAL CUTANEOUS NERVE BLOCKS BY LANDMARK TECHNIQUE IS INEFFECTIVE IN DECREASING NARCOTIC USAGE AFTER SKIN GRAFT PROCEDURES. **Jordan Ingram**, Rising Sophomore. Sponsored by Dr. Caleb Butts, M.D., Department of Surgery.

RACIALLY DISPARATE LEVELS OF HORMONES AND CYTOKINES IN BREAST CANCER PATIENTS. **Claudia Stephens**, Rising Sophomore. Sponsored by Seema Singh, Ph.D., Department of Pathology.

ASSESSMENT OF THE CLINICAL UTILITY OF LARGE COMPREHENSIVE NEXT-GENERATION SEQUENCING DIAGNOSTIC PANELS IN MELANOMA, COLORECTAL AND LUNG CANCER. **Christian Manganti**, Rising Sophomore. Sponsored by Thuy Phung, M.D., Ph.D., Department of Pathology.

IMPACT OF COVID-19 ON LIVER TRANSPLANT PATIENTS. **Troupe Grimes**, Rising Sophomore. Sponsored by Pallavi Patil, M.D., Department of Pathology.

ZO-1 EXPRESSION IN MICROVASCULAR ENDOTHELIAL CELLS WITH LOW DOSE ASPIRIN TREATMENT. **Shane Stephenson**, Rising Sophomore. Sponsored by Dr. Abu-Bakr Al-Mehdi M.D., Ph.D. Department of Pharmacology.

PROXIMITY-DEPENDENT BIOTINYLATION (BIO-ID) IDENTIFIES HISTONE CHAPERONE NAP-2 AS A DNA DAMAGE DEPENDENT METHYLPURINE DNA GLYCOSYLASE BINDING PROTEIN. **Bailey Manning**, Rising Sophomore. Sponsored by Robert W. Sobol, Ph.D., Department of Pharmacology.

UNUSUAL PATTERN OF OXIDATIVE BASE DAMAGE IN CANCER RELATED GENES IN ESOPHAGEAL BIOPSIES FROM PATIENTS WITH BARRETT'S ESOPHAGUS. **Matthew Handley**, Rising Sophomore. Sponsored by William Richards, M.D.; Viktor Pastukh, Kate Ledbetter, Mark N. Gillespie, Ph.D., Departments of Surgery and Pharmacology.

EVALUATING THE PFIZER/BIONTECH BNT162B2 VACCINE EFFICACY ON SARS-COV-2 WUHAN AND D614G SPIKE PROTEIN VARIANTS UTILIZING A PSEUDOTYPED LENTIVIRUS. **Andrew Long Stokes**, Incoming Freshman. Sponsored by Jonathon P. Audia, Ph.D., Department of Microbiology and Immunology.

SENTINEL SURVEILLANCE TO MONITOR HEALTH STATUS AND ACCESS TO CARE IN AN UNDERSERVED POPULATION. **Shubha McClelland**, Rising Sophomore. Sponsored by Dr. Martha Arrieta, MD, MPH, PhD, Center for Healthy Communities.

SCREENING COMPOUNDS TO IDENTIFY NOVEL TREATMENTS OF PPP2R5D-RELATED DEVELOPMENTAL DISORDER, JORDAN'S SYNDROME. **Walker Phillips**, Incoming Freshman. Sponsored by Richard Honkanen, Ph.D., Department of Biochemistry and Molecular Biology.

CHARACTERIZING THE DYNAMIC CA<sup>2+</sup> SIGNATURE OF THE LUNG MICROVASCULAR ENDOTHELIUM **Alex Templin**, Rising Sophomore. Sponsored by Mark S. Taylor, Ph.D., Chung-Sik Choi, Mike Lin, Ph.D., Department of Physiology and Cell Biology.

THE EFFECT OF LAPAROSCOPIC-ASSISTED RESECTION VERSUS ROBOTIC RESECTION VERSUS OPEN RESECTION ON PATHOLOGIC OUTCOMES ON STAGE II-IV RECTAL CANCERS. **Kimberly Waggener**, Rising Sophomore. Sponsored by John Hunter, M.D., Department of Surgery, Colon & Rectal Surgery.

CD34 EXPRESSION AND IMMUNE MICROENVIRONMENT IN CUTANEOUS MELANOMAS. **Alexander Polski**, Rising Sophomore. Sponsored by Dr. Pallavi A Patil, M.D., Department of Pathology.

The Clyde G. "Sid" Huggins Medical Student Research Awards were presented to the following: Ben Kimbell, rising sophomore medical student, received the best oral presentation award. Four medical students were presented awards for best poster presentations: Anthony Fant, incoming freshman; Daniel Irelan, Bailey Manning, and Claudia Stephens, all rising sophomores. Each winner was presented with a plaque of recognition and cash award.

**2020-2021  
Summary of Activities  
Graduate Program in Basic Medical Sciences**

**Administration**

Administration of the graduate program falls under the purview of the Office of Research Education and Training, co-directed by Drs. Tom Rich and Mark Taylor. Dr. Mark Taylor also serves as the Director of the Basic Medical Sciences Graduate Program.

**Admissions**

The BMS Graduate Program Office continued using the UniCAS admissions application program for the 2020-21 Academic Year. Prospective student applications were accessed and processed within the Office of Research Education and Training. An Admissions Committee was composed of representation from all 6 tracks. Committee members reviewed all applications to determine who would be invited to interview, and then participated in the interviews. Interviews with eligible students were hosted via Zoom video conferencing by the Office of Research Education and Training.

The Basic Medical Sciences Graduate Program interviewed applicants for the Fall 2021 class between February and June 2021. A total of 22 applicants were interviewed. A summary is provided below.

**Admissions – BMS Graduate Program**

		2021 Cohort
Applications	US/Perm. Res.	11
	International	14
Acceptances	US/Perm Res.	9
	International	4
Matriculants	US/Perm. Res.	9
	International	1
		Average GRE V=149; Q=151
		Avg. UG GPA 3.52
		Avg. GR GPA 3.46

**Curriculum**

1. The 2020 COM Research Forum was held virtually on December 11, 2020 and included 53 poster presentations. Rachel Rodenberg won first place in the graduate student category for her poster presentation on herpes stromal keratitis. Abigail Boyd won second place in the graduate student category, and third place went to Jennifer Knighten. First place in the postdoctoral category went to James Murphy, a postdoctoral fellow in Steve Lim’s lab and Basic Medical Sciences alumnus.



2. The BMS Graduate Program presented its fourteenth Edwin R. Hughes Memorial Award to Chelsie Carpenter on August 12, 2021. The Award honors the first-year student with the best academic performance in the Basic Medical Sciences Graduate Program's core curriculum (IDL 580 and IDL 581).

### **Financial Support for Graduate Training**

1. Due to the COVID-19 pandemic and related travel restrictions, the Samuel J. Strada Career Enhancement Travel Award was not awarded in the 2020-21 academic year.
2. In 2017, a COM Dean's Pre-doctoral Fellowship program was established. The program provides up to three one-year \$30,000 fellowships through an annual competition. The awardees of the fellowship for 2021 were Lina Abou Saleh, Jenny Hewes, and Yelitza Rodriguez.

### **Graduates**

5 students officially completed all requirements during the academic year (August 2020 – July 2021):

#### **Lina Abou Saleh**

DISSERTATION TITLE: "Ablation of PDE4B protects from *P. aeruginosa*-induced acute lung injury in mice by ameliorating the cytostorm and associated hypothermia"

MAJOR PROFESSOR: Wito Richter, Ph.D.

TRACK: Lung Biology

#### **Kierra Hardy**

DISSERTATION TITLE: "*Pseudomonas aeruginosa* Type III Secretion System Effector ExoU Induces Transient Paralysis of Mitochondria-associated NLRC4 Inflammasome"

MAJOR PROFESSOR: Jonathon Audia, Ph.D.

TRACK: Infectious Disease and Host Defense

#### **Cinta Maria Papke**

DISSERTATION TITLE: "Signaling Alterations in PPP2R5D-Variant Disorder"

MAJOR PROFESSOR: Richard Honkanen, Ph.D.

TRACK: Cell and Molecular Biology

#### **Alexander Richard**

DISSERTATION TITLE: "The Function of the Long Noncoding RNA Growth Arrest Specific 5 in Hematopoietic Stem and Progenitor Cells"

MAJOR PROFESSOR: Richard Honkanen, Ph.D.

TRACK: Cell and Molecular Biology

#### **Sarah Voth**

DISSERTATION TITLE: "Endothelial Amyloids in Acute Lung Infection"

MAJOR PROFESSOR: Troy Stevens, Ph.D.

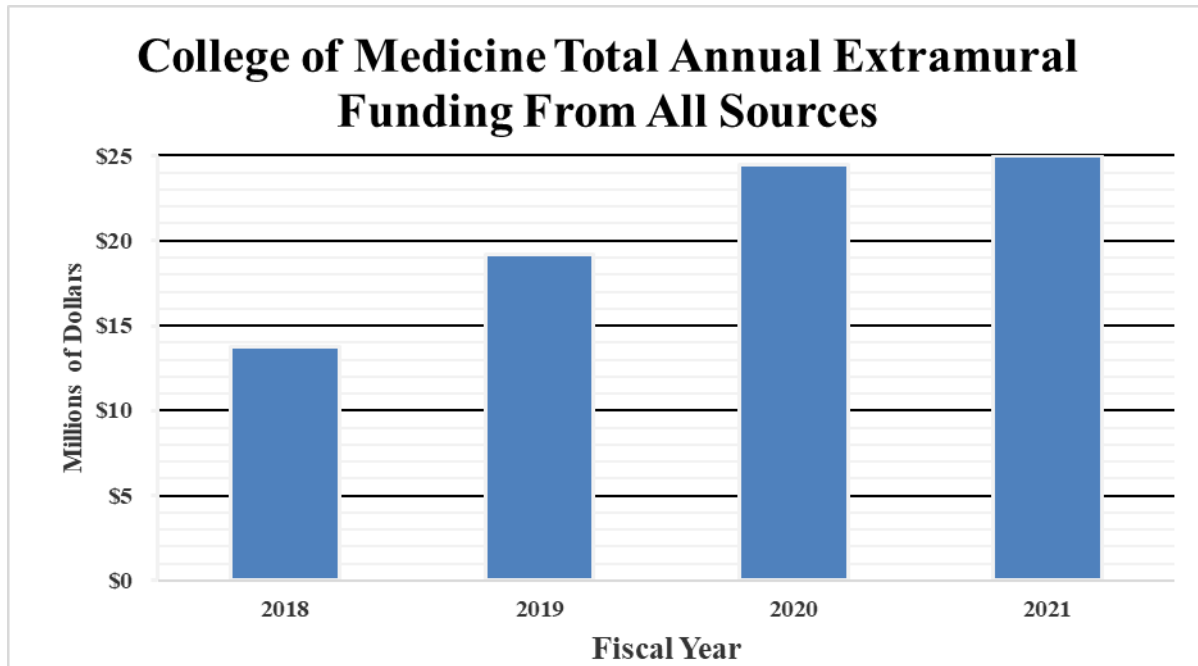
TRACK: Lung Biology

## Summary of Extramural Support

Funding for the 2020-2021 academic year includes \$24,511,322 and \$499,487 in awards and revenue administered through the Office of Sponsored Programs and the South Alabama Medical Science Foundation, respectively. Note that MPI awards (awards with multiple principal investigators) are only counted once in the extramural fund totals.

### Extramural Funds Totals for Last 4 Years

2018	\$13,790,910
2019	\$19,159,860
2020	\$24,462,635
2021	\$25,010,809*



\*Note that the University of South Alabama Office of Sponsored Projects Administration reports extramural funding of \$26.6M to the College of Medicine for FY21. This is because a different cut-off for the period of performance of awards is applied.

**EXTRAMURAL FUNDING**  
**October 1, 2020- September 30, 2021**

**Biochemistry and Molecular Biology**

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
DAVIES, CHRISTOPHER	VENATORX PHARMACEUTICALS	21-0293 Work Order 1	Oral Non-beta-lactam PBP Inhibitors for 3rd Generation Cephalosporin-resistant Gonorrhea Infections	48,051.00
DAVIES, CHRISTOPHER	VENATORX PHARMACEUTICALS	21-0294 Work Order 2	Structure-guided Lead Optimization of Novel Non beta-lactam Penicillin-binding Protein Inhibitors with Potent Activity Against Both Wild-type and PBP2 Variants Responsible for Clinical Resistance to Ceftriaxone in Neisseria Gonorrhoeae	209,720.00
LIM, STEVE	NATIONAL INSTITUTES OF HEALTH	1 R01 HL158875-01	FAK Regulation of Cholesterol Influx and Efflux in Foam Cells	\$385,000
PRAKASH, AISHWARYA	NATIONAL INSTITUTES OF HEALTH	5 R01 ES030084-03	Repair of Environmentally Induced Mitochondrial DNA Damage	\$462,000
RICHTER, WITO CO-INVESTIGATORS AUDIA, JONATHAN ALEXEYEV, MIKHAIL	NATIONAL INSTITUTES OF HEALTH	5 R01 HL141473-04	Regulation of Phosphodiesterases and cAMP Signaling During the Host-pathogen Interaction in the Pulmonary Endothelium	\$378,245
Total				\$1,483,016

**Center for Disaster Healthcare Preparedness**

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
WALLACE, DAVID	ALABAMA DEPARTMENT OF PUBLIC HEALTH	C00119195 (GC-20-376) SUPPLEMENT	CDHP 2020 Fiscal Agent for Alabama Healthcare Coalitions Program	\$164,239
WALLACE, DAVID	ALABAMA DEPARTMENT OF PUBLIC HEALTH	GC-20-424 (C00119228) SUPPLEMENT	CDHP 2020 Alabama Healthcare Coalition Coordination Program	\$51,030
WALLACE, DAVID	ALABAMA DEPARTMENT OF PUBLIC HEALTH	C10114172	Aims Enhancement ELC 282	\$860,000
WALLACE, DAVID	ALABAMA DEPARTMENT OF PUBLIC HEALTH	C10114152 (GC-21-262)	CDHP AIMS Enhancement Program	\$141,750
WALLACE, DAVID	ALABAMA DEPARTMENT OF PUBLIC HEALTH	C10114248 (GC-21-426)	Fiscal Agent for Alabama Healthcare Coalitions Program	\$588,736
WALLACE, DAVID	ALABAMA HOSPITAL ASSOCIATION	A21-0124-001	Alabama Hospital Association COVID-19 After-Action Review	\$60,000
WALLACE, DAVID CO-INVESTIGATORS JACOBS, MICHAEL B.	ALABAMA DEPARTMENT OF PUBLIC HEALTH	C10114230 (GC-21-406)	Alabama Healthcare Coalition Coordination Program	\$1,072,548
Total				\$2,938,303

**Center for Healthy Communities**

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
ARRIETA, MARTHA	UNIVERSITY OF ALABAMA AT BIRMINGHAM	000529541-SC002-Arr	Alabama Community-Engagement Research Alliance Against COVID-19 in Disproportionately Affected Communities (Alabama CEAL)	50,000.00
Total				\$50,000

**Family Medicine**

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
DANIEL, CASEY	ALABAMA DEPARTMENT OF PUBLIC HEALTH	C10114059 (GC-21-122)	Alabamian's Intentions to Receive Influenza Vaccination and Assessing Alabamian's Knowledge, Attitudes, and Perceptions of COVID-19 and Their Willingness to Receive COVID-19 Vaccination	\$55,870
PERKINS, ALLEN	HEALTH RESOURCES AND SERVICES ADMINISTRATION	1 T34HP42151-01-01	Partnering to Improve Maternal Outcomes	\$622,490
PERKINS, ALLEN	ALABAMA FAMILY PRACTICE RURAL HEALTH BOARD	A21-0029	Resident Curriculum in Rural Family Medicine	\$45,000
PERKINS, ALLEN	ALABAMA FAMILY PRACTICE RURAL HEALTH BOARD	A21-0025	Student Preceptorship FY21	\$20,000
PERKINS, ALLEN <i>CO-INVESTIGATORS</i> ESTRADA, BENJAMIN DANIEL, CASEY TRIMMIER, MARIROSE HUNDLEY, TERRY PETTY, MELODY ESTIS, JULIE	HEALTH RESOURCES AND SERVICES ADMINISTRATION	6 T99HP33560-03-01	Partnering to Improve Population Care- Supplement 2	\$4,810,113
PERKINS, ALLEN <i>CO-INVESTIGATORS</i> ESTRADA, BENJAMIN DANIEL, CASEY TRIMMIER, MARIROSE HUNDLEY, TERRY PETTY, MELODY ESTIS, JULIE	HEALTH RESOURCES AND SERVICES ADMINISTRATION	5 T99HP33560-03-00	Partnering to Improve Population Care	\$1,030,561
<b>Total</b>				<b>\$6,584,034</b>

**Internal Medicine**

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
ARRIETA, MARTHA	NATIONAL INSTITUTES OF HEALTH	5 U01 ES029518-04 SUBFUND	Measuring Genomic DNA Damage and DNA Repair Capacity in Longitudinal Population Samples - A Step Towards Precision Prevention	\$191,789
CROOK, ERROL <i>CO-INVESTIGATORS</i> ARRIETA, MARTHA HANKS, ROMA	MOBILE COUNTY HEALTH DEPARTMENT	A21-0208	Mobile County Community Health Worker Coalition Sub-Award	\$409,392
CROOK, ERROL <i>CO-INVESTIGATORS</i> PERKINS, ALLEN ARRIETA, MARTHA	UNIVERSITY OF ALABAMA AT BIRMINGHAM	30T2OD026548-01S4	Alabama Precision Medicine Initiative	\$650,000

CROOK, ERROL CO-INVESTIGATORS PERKINS, ALLEN ARRIETA, MARTHA DIPALMA, J	UNIVERSITY OF ALABAMA AT BIRMINGHAM	30T2OD026548-01S3A	Alabama Precision Medicine Initiative	\$12,925
	PUMA BIOTECHNOLOGY, INC.	63878	An Open Label Phase 2 Study to Characterize Colon Pathology in Patients with HER2 Amplified Breast Cancer Treated with Neratinib (PUMA-NER-6203)	\$42,900
FAGAN, K	ACTELION PHARMACEUTICALS US, INC.	63824	Upravi (Selexipag): the usErs dRug rEgistry (Actelion AC-065A402 Sphere Registry)	\$6,500
FOUTY, B	ACERTA PHARMA B.V. (ASTRAZENECA)	63896	A Phase 2, Open Label, Randomized Study of the Efficacy and Safety of Acalabrutinib with Best Supportive Care Versus Best Supportive Care in Subjects Hospitalized with COVID19 (AstraZeneca CALAVI D822FC00003)	\$15,281
HAYNES, JOHNSON	CAROLINAS HEALTHCARE SYSTEM	A18-0056-S005	Comparative Effectiveness of Enhanced Peer Navigation versus Structured Education Based Programming for the Management of Care Transitions in Emerging Adults with Sickle Cell	\$41,297
HAYNES, JOHNSON	NOVARTIS PHARMACEUTICALS	SEG101A2203-5008	A Phase II, Multicenter, Randomized, Open Label Two Arm Study Comparing the Effect of Crizanlizumab + Standard of Care to Standard of Care Alone on Renal Runction in Sickle Cell Disease Patients	\$12,400
HAYNES, JOHNSON	UNIVERSITY OF ALABAMA AT BIRMINGHAM	A21-0058	ADVANCING ALSTATE (Alabama Lifespan Sickle Cell Tracking Access Towards Equality) Network	\$35,475
MALOZZI, CHRISTOPHER	LUITPOLD PHARMACEUTICALS, INC.	63842	A Randomized, Double-Blind, Placebo-Controlled Study to Investigate the Efficacy and Safety of Injectafer (Ferric Carboxymaltose) as Treatment for Heart Failure with Iron Deficiency (HEART-FID) (Luitpold - 1VIT15043)	\$15,598
MALOZZI, CHRISTOPHER	AMERICAN ACADEMY OF PEDIATRICS	5 R21EB028063-03 SUB FUND	Automated MRI-based 3D Contractility (Strain) Analysis for Detecting Subclinical Cardiotoxicity in Breast Cancer Patients Undergoing Chemotherapy	\$42,134
SONNIER, W	CORRONA, LLC	63891	Corrona Inflammatory Bowel Disease (IBD) Registry (IBD-600 Registry)	\$7,600
VANDE WAA, JOHN	HEALTH RESOURCES AND SERVICES ADMINISTRATION	5 H12HA24771-09-00	University of South Alabama Family Specialty Clinic	\$381,260
VANDE WAA, JOHN	UNITED WAY OF CENTRAL ALABAMA	RW-USAF-2122	United Way Part B	\$50,000
			Total	\$1,914,551

## Microbiology and Immunology

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
BARRINGTON, ROBERT	MOWYCAL, LLC	A19-0046-supp	Pre-clinical Studies to Determine the Efficacy of N-formyl0methionyl-leucyl-phenylalanine (N-f-MLF) Peptide Prevention of Most Cell Degranuation	\$15,190
BARRINGTON, ROBERT	MOWYCAL, LLC	A19-0046-supp2	Pre-clinical Studies to Determine the Efficacy of N-formyl0methionyl-leucyl-phenylalanine (N-f-MLF) Peptide Prevention of Most Cell Degranuation	\$70,015
HERMANCE, MEGHAN	NATIONAL INSTITUTES OF HEALTH	1 R21 AI16393-01	Evaluating the Ability of the Invasive Asian Longhorned Tick, Haemaphysalis longicornis, to Maintain and Transmit North American Tick-borne Viruses	\$231,000

KIM, J	BLUE WILLOW BIOLOGICS	63893	The acquisition and characterization of two recent genetic variants of SARS-CoV-2 virus. (Blue Willow SARS-CoV-2)	\$11,987
MACALUSO, KEVIN	UNIVERSITY OF TEXAS MEDICAL BRANCH	19-84813-03	Novel Bacterial Small RNAs as Determinants of Rickettsial Virulence and Transmission	\$77,796
MACALUSO, KEVIN	LOUISIANA STATE UNIVERSITY	1 R01AI153155-01A1	Rickettsial Influence on Host Membrane Physiology in Arthropod Vectors	\$81,900
RAYNER, JONATHAN	ALABAMA STUDY COMMISSION ON TICK BORNE ILLNESS	A21-0090SUB FUND	The Current State of the Ticks of Human Importance and Tick-Borne Diseases in Alabama	\$44,040
RAYNER, JONATHAN	MOBILE COUNTY HEALTH DEPARTMENT	A20-0083-002	Mobile County Public Health Department Mosquito-borne Infectious Disease Surveillance - 2020	\$48,968
RAYNER, JONATHAN	HILLSTREAM BIOPHARMA, INC.	63883	Evaluation of Nanoparticle Formulations of Antiviral Drugs Against SARS-CoV-2 (Hillstream Bio SARS-CoV-2)	\$9,041
RAYNER, JONATHAN	AQUA RESOURCES CORP	63884	Aqua Resources Kill Curve for SARS-CoV-2 Virus (Aqua Resources SARS-CoV-2)	\$4,454
RAYNER, JONATHAN	HILLSTREAM BIOPHARMA, INC.	63892	Evaluation of HCB-1218 in a Hamster Model of SARS-CoV-2 (Hillstream Bio HCB-1218)	\$22,897
RAYNER, JONATHAN	BLUE WILLOW BIOLOGICS	63900	The preparatin of 2 SARS-CoV-2 vaccines using nanoemulsion adjuvant and testing the efficacy of those vaccines against challenge with up to two SARS-CoV-2 strains in a hamster model. (Blue Willow Hamster Study)	\$78,019
<b>Total</b>				<b>\$695,307</b>

## Neurology

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
CORDINA,	RAPID MEDICAL	63898	Success in Comaneci-assist Coils Embolization Surveillance Study (Rapid Medical Postmarket Surveillance)	\$8,250
DEES, D	ABBVIE, INC.	63888	A Randomized, Double-Blind, Double-Dummy, Active-Controlled Study Comparing the Efficacy, Safety and Tolerability of ABBV-951 to Oral Carbidopa/Levodopa in Advanced Parkinson's Disease Patients (AbbVie M15-736)	\$40,877
DEES, D	ABBVIE, INC.	63894	Advanced Parkinson's Disease: An Open-Label Extension Study of M15-736 Evaluating the Safety and Tolerability of ABBV-951 (AbbVie M20-098)	\$14,150
DEES, DANIEL	UNIVERSITY OF ALABAMA AT BIRMINGHAM	180111-04	Centers of Excellence	\$10,088
KILGO, W	EMD SERONO, INC.	63868	CLadribine tablets: Observational evaluation of effectiveness and patient-reported outcomes (PROs) in suboptimally Controlled patients previously taKing injectable disease-modifying drugs (DMDs) for relapsing forms of Multiple Sclerosis (RMS) (CLICK-MS) (EMD Serono MS700568_0078)	\$2,000
KILGO, W	EMD SERONO, INC.	63885	A Phase III, Multicenter, Randomized, Parallel Group, Double Blind, Double Dummy, Active Controlled Study of Evobrutinib Compared with Teriflunomide, in Participants with Relapsing Multiple Sclerosis to Evaluate Efficacy and Safety (EMD Serono Ms200527_0080)	\$8,700

KILGO, W	CELGENE INTERNATIONAL II SARL	63886	A Multicenter, Longitudinal, Open-label, Single-arm Study Describing Cognitive Processing Speed Changes in Relapsing Multiple Sclerosis Subjects Treated With Ozanimod (Celgene RPC-1063-MS-001)	\$20,460
KILGO, W	ALEXION PHARMACEUTICALS, INC.	63897	A Phase 3, External Placebo-Controlled, Open-Label, Multicenter Study to Evaluate the Efficacy and Safety of Ravulizumab in Adult Patients with Neuromyelitis Optica Spectrum Disorder (NMOSD) (Alexion ALXN1210-NMO-307)	\$11,800
MINTO, E	NOVARTIS	63785	Long-term, prospective, multinational, parallel-cohort study monitoring safety in patients with MS newly started on fingolimod once daily or treated with another approved disease-modifying therapy (Novartis FTY720D 2403)	\$5,230
SUGG, REBECCA	THE NEUROLOGICAL INSTITUTE OF NEW YORK	010785-138674-01	ARCADIA Clinical Trial through the NIH StrokeNet	\$1,200
Total				\$122,755

### Obstetrics and Gynecology

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
BAKER, SUSAN	UNIVERSITY OF ALABAMA AT BIRMINGHAM	000503570-SC039-A03	Chronic Hypertension and Pregnancy	\$22,495
BAKER, SUSAN	UNIVERSITY OF ALABAMA AT BIRMINGHAM	000517555-001B	Regional Partnership Grants to Increase the Well-Being of, and to Improve the Permanency Outcomes for, Children Affected by Substance Abuse	\$10,000
BAKER, SUSAN	UNIVERSITY OF ALABAMA AT BIRMINGHAM	000517555-001A	Regional Partnership Grants to Increase the Well-Being of, and to Improve the Permanency Outcomes for, Children Affected by Substance Abuse	\$10,000
MUNN, MARY	ALABAMA DEPARTMENT OF PUBLIC HEALTH	C10114041 (GC-21-081)	Perinatal Coordinator Grant	\$11,500
ROTH, T	PFIZER	63887	A Phase 3, Randomized, Double- or Observer-Blinded, Placebo-Controlled Trial to Evaluate The Efficacy and Safety of a Respiratory Syncytial Virus (RSV) Perfusion FSubunit Vaccine in Infants Born to Women Vaccinated During Pregnancy Investigational (Pfizer C3671008)	\$17,879
Total				\$71,874

### Pathology

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
SARKAR, CHANDRANI	NATIONAL INSTITUTES OF HEALTH	7 R21 CA2166763-03	Development of a Novel Antiangiogenic Drug for Colon Cancer by Targeting Neuropeptide Y Receptors.	\$90,098
SINGH, AJAY CO-INVESTIGATORS SINGH, SEEMA CARTER, ELLIOT	NATIONAL INSTITUTES OF HEALTH	5 R01 CA224306-04	A Novel Molecular Cross-talk Driving Pancreatic Cancer Progression	\$346,556

SINGH, SEEMA CO-INVESTIGATORS SINGH, AJAY DANIEL, CASEY HANKS, ROMA ARRIETA, MARTHA	NATIONAL INSTITUTES OF HEALTH	5 R01 CA231925-03	Impact of Social Factors on Breast Cancer Biology in African-American Women	\$603,591
Total				\$1,040,245

### Pediatrics

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
ANDERSON, STEPHANIE	ALABAMA DEPARTMENT OF MENTAL HEALTH/MENTAL RE	MP2021-10-05	Regional Autism Network (RAN)	\$75,000
ESTRADA, BENJAMIN CO-INVESTIGATOR CUSTODIO, HAIDEE	UNIVERSITY OF ALABAMA AT BIRMINGHAM	000522211-SC002b	Congenital and Perinatal Infections Rare Diseases Clinical Research Consortium	\$3,640
ESTRADA, BENJAMIN CO-INVESTIGATOR CUSTODIO, HAIDEE	UNIVERSITY OF ALABAMA AT BIRMINGHAM	000522211-SC002a	Study of the Natural History of Acute Flaccid Myelitis	\$13,098
EYAL, F	PROLACTA BIOSCIENCE	63876	Effects of an Exclusive Human Milk Diet on Enteral Feeding Outcomes of Neonates with Congenital Gastrointestinal Disorders (Prolacta CGD)	\$9,327
IMRAN, HAMAYAN	CHILDREN'S HOSPITAL OF PHILADELPHIA	9400120212 - ST. BALDRICKS SIX	Children's Oncology Group Grant - Non-Industry Funded Work Order	\$7,500
IMRAN, HAMAYAN	CHILDREN'S HOSPITAL OF PHILADELPHIA	FP00030519_SUB105_02	CHOP Mater Subaward Agreement Project: One Time EOY, Integrated BIQSFP AAML1031- Echocardiogram Reports and Images.	\$175
IMRAN, HAMAYAN	CHILDREN'S HOSPITAL OF PHILADELPHIA	FP00026528_SYB364-03	Per Case Reimbursement - NIH National Clinical Trials Network (NCTN) Grant (2U10CA180886) Successor to NIH National Clinical Trials Network (NCTN Grant (U10CA180886)	\$24,200
IMRAN, HAMAYAN	CHILDREN'S HOSPITAL OF PHILADELPHIA	FP00028127_SUB125_02	Master Subaward agreement for Non-Industry funding Per Case Reimbursement NCORP Research Base	\$1,000
IMRAN, HAMAYAN	CHILDREN'S HOSPITAL OF PHILADELPHIA	9400710617-04	Project: Every Child (APEC14B1) Non-Industry	\$15,950
IMRAN, HAMAYAN	CHILDREN'S HOSPITAL OF PHILADELPHIA	FP00033922_SUB35_01	Supplement to APEC14B1 COG NCTN Network Group Operations Center	\$1,200
KAULFERS, ANNE-MARIE WHITEHURST, R	ALABAMA DEPARTMENT OF PUBLIC HEALTH CHIESI FARMACEUTICI	C10114020 (GC-21-043) 63895	Endocrinology Clinic for Newborn Screening A Phase II, multicenter, double blind, double dummy, randomized, 2 arms parallel study to evaluate the efficacy, safety and pharmacokinetics of CHF6563 in babies with Neonatal Opioid Withdrawal Syndrome (Chiesi CLI-06563AA1-02)	\$22,000 \$12,385
WILSON, FELICIA	ALABAMA DEPARTMENT OF PUBLIC HEALTH	C10114039 (GC-21-079)	Comprehensive Sickle Cell Center for the State Newborn Screening Program	\$22,000
Total				\$207,475

### Pharmacology

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
BORCHERT, GLENN	NATIONAL SCIENCE FOUNDATION	2030080-001	RAPID: Exosomal tRNA Fragments Constitute an Innate Viral Defense (RAHSS Supplement)	\$5,860



BORCHERT, GLENN <i>CO-INVESTIGATORS</i> BROWN, CANA	NATIONAL SCIENCE FOUNDATION	2030080-002	RAPID: Exosomal tRNA Fragments Constitute an Innate Viral Defense (REPS Supplement)	\$25,350
BORCHERT, GLENN <i>CO-INVESTIGATORS</i> DEMARIS, JEFFREY	ALABAMA COMISSION ON HIGHER EDUCATION	21-0471	Graduate Research Scholars Program (GRSP) Awards (Round 16)	\$25,000
GILLESPIE, MARK <i>CO-INVESTIGATORS</i> DALY, GRANT	AMERICAN HEART ASSOCIATION	830166	Oxidative Mitochondrial DNA Damage in the Propagation of Ischemia-Reperfusion Injury and its Long-term Consequences	\$31,520
GILLESPIE, MARK <i>CO-INVESTIGATORS</i> BORCHERT, GLENN WILSON, EMILY MULEKAR, MADHURI FRUH, SHARON ARRIETA, MARTHA ROCCONI, RODNEY	UNIVERSITY OF ALABAMA BIRMINGHAM	000520679-SC010-A03	University of South Alabama Translational Research Service Center	\$193,978
GILLESPIE, MARK <i>CO-INVESTIGATORS</i> PASTUKH, VICTOR MULEKAR, MADHURI	NATIONAL INSTITUTES OF HEALTH	5 R01 GM127823-03	mtDNA Damage and DAMPS in Multiple Organ Dysfunction Syndrome	\$438,552
GILLESPIE, MARK <i>CO-INVESTIGATORS</i> LANGLEY, RAYMOND PASTUKH, VICTOR MULEKAR, MADHURI	NATIONAL INSTITUTES OF HEALTH	5 R01 HL113614-09	mtDNA Repair: An Isolated Pharmacologic Target in Acute Lung Injury	\$418,430
GILLESPIE, MARK	UNIVERSITY OF ALABAMA AT BIRMINGHAM	000528823-SC001	Mitigation of Chlorine Injury to Mitochondria	\$15,000
GILLESPIE, MARK	UNIVERSITY OF ALABAMA AT BIRMINGHAM	A21-0121	USA CCTS Fee for Service Agreement to Fund Voucher Awards	\$15,000
LANGLEY, RAYMOND	UNIVERSITY OF ALABAMA AT BIRMINGHAM	000520695-SC002-A01	Metabolic Energy Crisis Signature Predict Quality of Life in Survivors of Acute Respiratory Failure	\$93,231
LANGLEY, RAYMOND <i>CO-INVESTIGATORS</i> BENTON, RYAN	NATIONAL INSTITUTES OF HEALTH	1 R21 NR019338-01A1	Metabolic Energy Crisis Signature Predicts Quality of Life in Survivors of Acute Respiratory Failure	\$249,683
MIGAUD, MARIE	UNIVERSITY OF PENNSYLVANIA	576028-03	Targeting NAD Metabolism to Improve Glucose Homeostasis in Obesity and Aging	\$29,303
PIAZZA, GARY	UNIVERSITY OF ALABAMA AT BIRMINGHAM	20-0166	RAS Inhibitor Therapy of Pancreatic Cancer	\$20,000
RICH, THOMAS <i>CO-INVESTIGATORS</i> LEAVESLEY, SILAS	THOMAS JEFFERSON UNIVERSITY	080-18007-S11203-3	G Protein-Coupled Receptor Regulation in Airway Myocytes	\$103,950
RICH, THOMAS <i>CO-INVESTIGATOR</i> LEAVESLEY, SILAS	THOMAS JEFFERSON UNIVERSITY	080-18007-S28201-2supp	Functional Diversity of Compartmentalized Calcium Signaling in Airway Smooth Muscle	\$7,386
RICH, THOMAS <i>CO-INVESTIGATOR</i> LEAVESLEY, SILAS	THOMAS JEFFERSON UNIVERSITY	080-18007-S28201-4	Functional Diversity of Compartmentalized Calcium Signaling in Airway Smooth Muscle	\$131,491
SOBOL, ROBERT	FLORIDA GULF COAST UNIVERSITY	17056-NIH-MCI-04	To Assess and Minimize the Risk of Human Exposure to Ciguatoxins in a Changing Climate	\$127,660
SOBOL, ROBERT	FLORIDA GULF COAST UNIVERSITY	17056-NSF-USA-MCI-04	To Assess and Minimize the Risk of Human Exposure to Ciguatoxins in a Changing Climate	\$243,261

SOBOL, ROBERT <i>CO-INVESTIGATORS</i> KOCZOR, CHRISTOPHER FANG, QINGMING	NATIONAL INSTITUTES OF HEALTH	5 R01 CA148629-11	Novel Approaches to Enhance Tumor Cell Cytotoxicity of Alkylating Agents	\$359,813
SOBOL, ROBERT <i>CO-INVESTIGATOR</i> LI, JIANFENG	NATIONAL INSTITUTES OF HEALTH	5 U01 ES029518-04	Measuring Genomic DNA Damage and DNA Repair Capacity on Longitudinal Population Samples - a Step Towards Precision Prevention	\$357,454
SOBOL, ROBERT <i>CO-INVESTIGATORS</i> KOCZOR, CHRISTOPHER FANG, QINGMING	FOX CHASE CANCER CENTER	FCCC15137-03	Investigating Genetic Ancestry Influences on Oral Cavity and Laryngeal Cancer Survival Disparities	\$277,414
SOBOL, ROBERT <i>CO-INVESTIGATORS</i> KOCZOR, CHRISTOPHER FANG, QINGMING	AMELIA TECHNOLOGIES	1 R44 ES032522-01	Barcoded Human Cells Engineered with Heterozygous Genetic Diversity to Uncover Toxicodynamic Variability	\$86,135
SOBOL, ROBERT <i>CO-INVESTIGATORS</i> LI, JIANFENG KEETON, ADAM	BREAST CANCER RESEARCH FOUNDATION OF ALABAMA	A21-0047-001	Exploiting a Novel, Live-Cell, Real-Time Poly-ADP-Ribose Probe for Discovery of PARG Inhibitors	\$25,000
SOBOL, ROBERT	UNIVERSITY OF ALABAMA AT BIRMINGHAM	000528128-SC001-A01	SON- Mediated RNA Splicing in Glioblastoma	\$16,771
SOBOL, ROBERT	UNIVERSITY OF TEXAS HEALTH AT SAN ANTONIO	168700-168699-1	The Paternal Age Effect - Enhanced Germ Cell Mutagenesis modulated by the TRP53/APE1/MDM2 Tumor Suppressor Axis	\$95,303
<b>Total</b>				<b>\$3,392,545</b>

### Physiology and Cell Biology

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
ALEXEYEV, MIKHAIL	DEPARTMENT OF DEFENSE	W81XWH2110669	Towards Humanized Mouse Models of Mitochondrial Disease	\$769,998
ALEXEYEV, MIKHAIL	DEPARTMENT OF DEFENSE	W81XWH2110161	Defining the Molecular Composition of the Interspecies Barrier for Mitochondrial DNA Replication	\$308,000
ALEXEYEV, MIKHAIL	NATIONAL INSTITUTES OF HEALTH	5 P01 HL066299-19 CORE C	Lung Endothelial Cell Phenotypes - Core C: Gene Delivery	\$289,411
COHEN, MICHAEL	BOEHRINGER INGELHEIM PHARMACEUTICALS, INC.	A20-0072-02	Cluster-randomized Clinical Trial to Test the Effectiveness of an Innovative,	\$9,660
FRANCIS, MICHAEL <i>CO-INVESTIGATOR</i>	NATIONAL INSTITUTES OF HEALTH	5 K25 HL136869-05	TRPC4-Mediated Calcium Signals Accelerate Vascular Remodeling In Pulmonary Arterial Hypertension	\$159,548
STEVENS, TROY GASSMAN, NATALIE <i>CO-INVESTIGATORS</i>	BREAST CANCER RESEARCH FOUNDATION OF ALABAMA	A21-0046-001	Targeted Nanoparticle Delivery to Reduce STAT3 and Improve Cell Killing in Triple Negative Breast Cancer	\$50,000
SCHULER, ANNE MIGAUD, MARIE GASSMAN, NATALIE	DEPARTMENT OF DEFENSE	W81XWH2110596	DNA Damage as a Predictive Biomarker for Immunotherapy Response in Ovarian Cancer	\$670,729
GASSMAN, NATALIE <i>CO-INVESTIGATORS</i> MIGAUD, MARIE SWINGLE, MARK	NATIONAL INSTITUTES OF HEALTH	1 R01 ES032450-01	Dihydroxyacetone Induces Metabolic Reprogramming	\$346,500
GASSMAN, NATALIE <i>CO-INVESTIGATOR</i> WRIGHT, GRIFFIN	NATIONAL INSTITUTES OF HEALTH	5TL1TR003106-03	Dysregulation of Base Excision Repair Proteins in Triple Negative Breast Cancer	\$47,683

LEAVESLEY, SILAS	NATIONAL INSTITUTES OF HEALTH	5 P01 HL066299-19 CORE D	Lung Endothelial Cell Phenotypes - Core A: Administrative Core	\$220,166
LEE, JI YOUNG	NATIONAL INSTITUTES OF HEALTH	1 K08 HL153958-01A1	Carbonic Anhydrase IX and Pulmonary Endothelial Cell Acidosis During Infection	\$160,067
LIN, MIKE <i>CO-INVESTIGATORS</i> BALCZON, RONALD ZHA, XIANGMING STEVENS, TROY	NATIONAL INSTITUTES OF HEALTH	5 R01 HL140182-04	Nosocomial Pneumonias Impair Cognitive Function	\$441,118
NELSON, AMY R.	NATIONAL INSTITUTES OF HEALTH	5 R00 AG058780-04	Brain Pericyte Contractility, Cerebral Blood Flow and Blood-brain Barrier Integrity are Impaired by Normal Aging and Alzheimer's Disease Amyloid-beta and are Dependent on p75NTR	\$249,000
RICH, THOMAS <i>CO-INVESTIGATORS</i> RICHTER, WITO LEAVESLEY, SILAS SAYNER, SARAH	NATIONAL INSTITUTES OF HEALTH	5 P01 HL066299-19 PROJ 2	Lung Endothelial Cell Phenotypes - Project 2: Cyclic Nucleotide Gradients Regulate the Balance of Mechanical Forces Underlying Endothelial Barrier Integrity	\$350,168
STEVENS, TROY	NATIONAL INSTITUTES OF HEALTH	5 P01 HL066299-19 CORE A	Lung Endothelial Cell Phenotypes - Core A: Administrative Core	\$210,381
STEVENS, TROY <i>CO-INVESTIGATORS</i> BALCZON, RONALD SAYNER, SARAH	NATIONAL INSTITUTES OF HEALTH	5 P01 HL066299-19 PROJ 1	Lung Endothelial Cell Phenotypes - Project 1: Soluble Adenylyl Cyclases in Lung Endothelial Permeability	\$315,786
STEVENS, TROY <i>CO-INVESTIGATORS</i> ALEXEYEV, MIKHAIL BALCZON, RONALD	NATIONAL INSTITUTES OF HEALTH	5 R01 HL148069-02	Lung Endothelial A $\beta$ in Infectious Proteinopathy	\$385,000
LEE, JI YOUNG	NATIONAL INSTITUTES OF HEALTH	5 P01 HL066299-19 Admin Sup	Administrative Supplement: Soluble Adenylyl Cyclases in Pulmonary Endothelial Permeability	\$43,120
STEVENS, TROY <i>FELLOW</i> DEWEEVER, ALTHEA	NATIONAL INSTITUTES OF HEALTH	5 P01 HL066299-19 CORE B	Lung Endothelial Cell Phenotypes - Core B: Cell Culture & Small Animal	\$266,708
TAMBE, DHANANJAY	NATIONAL INSTITUTES OF HEALTH	5 P01 HL066299-19 CORE B	Lung Endothelial Cell Phenotypes - Core B: Cell Culture & Small Animal	\$266,708
TAYLOR, MARK	NATIONAL INSTITUTES OF HEALTH	5 P01 HL066299-19 PROJ 3	Lung Endothelial Cell Phenotypes - Project 3: Functional Calcium Microdomains in Lung Microvascular Endothelium	\$334,768
TAYLOR, MARK	NATIONAL INSTITUTES OF HEALTH	1 R01 HL155288-01A1	Network Signature of Low-Flow Endothelial Dysfunction	\$385,000
ZHA, XIANGMING <i>CO-INVESTIGATOR</i> RICH, THOMAS	NATIONAL INSTITUTES OF HEALTH	5 R01 NS102495-05	Neuroprotective Role of OGR1 in Brain Ischemia	\$361,518
			Total	\$6,374,329

### Surgery

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
BRIGHT, A	MEDIWOUND	63879	Use of Nexobrid for Treatment of Acute Deep Partial and Full Thickness Burn Injuries	\$71,396
FONSECA, ANNABELLE	ECOG-ACRIN CANCER RESEARCH GROUP	20-0520	(MediWound MW2018-06-21) Comparing the Clinical Impact of Pancreatic Cyst Surveillance Programs	\$2,225

HUNTER, J	SHIONOGI, INC.	63889	A Phase 2, multicenter, randomized, double-blind, placebo-controlled study of naldemedine in patients undergoing surgeries that include a bowel resection or bowel transection	\$10,700
RIDER, P	MILLENNIUM PHARMACEUTICALS / TAKEDA	63857	TAK-954-2004: A Randomized, Double-Blind, Placebo-Controlled, Phase 2 Dose Ranging Study to Evaluate the Efficacy and Safety of 2 Dose Regimens of Intravenous TAK-954 for the Prophylaxis and Treatment of Postoperative Gastrointestinal Dysfunction in Patients Undergoing Large- and Small-bowel Resection (Millennium TAK-954-2004)	\$41,341
Total				\$125,662

**Mitchell Cancer Institute (SAMSF PROJECTS ONLY)**

Principal Investigator	Agency	Grant ID#	Title	Fiscal Year Funding
HESLIN, M	Alliance Foundation Trials, LLC (Pfizer)	63799	PALLAS Palbocicib Collaborative Adjuvant Study: A randomized phase III trial of Palbociclib with standard adjuvant endocrine therapy versus standard adjuvant endocrine therapy alone for hormone receptor 2 (HER2) negative early breast cancer (Alpha PrE0109 - PALLAS)	\$7,100
ROCCONI, RODNEY	Gradalis, Inc.	63752	A Randomized, Double-Blind, Placebo-Controlled Phase 3 Trial of Vigil Engineered Autologous Tumor Cell Immunotherapy in Subjects with Stage IIIb-IV Ovarian Cancer in Clinical Complete Response following Surgery and Primary Chemotherapy (VITAL) - (CL-PTL-119) (Gradalis CL-PTL-119)	\$3,615
Total				\$10,715