

ACADEMIC YEAR 2016-2017



Distinction Track Program
UNDERGRADUATE MEDICAL EDUCATION OFFICE
UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE

The Distinction Track Program provides students the opportunity for academic exploration and scholarly productivity in an area of medicine for which they have a passion.

Business & Leadership

Global Health

Medical Education

Research

This program is designed to increase the number of students choosing careers in academic medicine.

**UNDERGRADUATE MEDICAL EDUCATION
DISTINCTION TRACK PROGRAM
ANNUAL REPORT**

UNDERGRADUATE MEDICAL EDUCATION, SCHOOL OF MEDICINE

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VICE DEAN FOR UNDERGRADUATE MEDICAL EDUCATION

CHAIR, DISTINCTION TRACK ADVISORY COMMITTEE

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INTRODUCTION

The Undergraduate Medical Education Distinction Track (DT) Program began in 2010 with the Distinction in Research Track. The other three tracks – Business and Leadership, Global Health, and Medical Education – started in 2013. **Distinction in Research Track** prepares students for his/her role as a clinician-researcher and the methods of basic and translational research. **Distinction in Business and Leadership Track** provides a fundamental knowledge base that explores the intersection of business and medicine, and arms trainees with a vital skill set to succeed in our health economy. **Distinction in Global Health Track** introduces students to various perspectives of global health through the lenses of clinical, social, political, and epidemiological study. **Distinction in Medical Education Track** develops skills in multiple teaching modes pertinent to medical education, as well as skills in medical education research. Students are overwhelmingly positive about their distinction track experience and their faculty mentors. They feel the Distinction Track Program added substantially to their medical school experience.

DISTINCTION TRACK PROGRAM

Distinction Track Advisory Committee (DTAC) Members

DTAC meets quarterly to discuss issues pertinent to the DT Program and to share updates on individual track and research results.

- | | |
|---|---------------------------------------|
| • M. Ann Shaw, MD, MA, FACP (Chair) | • Toni Ganzel, MD, MBA, FACS |
| • Robert C.G. Martin, MD, PhD | • Sam Miller, PhD, MEd |
| • Michael Ostapchuk, MD, MEd | • Russell A. Prough, PhD |
| • Mary Jo White, MEd | • Susan Sawning, MSSW |
| • Shelley Gibson, MA | • Anne Noe |
| • Elayna Dush, DIME, Class of 2017 | • Ryan Eid, DIGH, Class of 2017 |
| • Travis Spaulding, DIBL, Class of 2017 | • Anna N. Thamann, DIR, Class of 2017 |

Individual Distinction Track Directors*

**Also members of Distinction Track Advisory Committee*

- | | |
|--|---|
| Distinction in Business and Leadership (DIBL) <ul style="list-style-type: none"> • Brad Sutton, MD, MBA • In K. Kim, MD, MBA | Distinction in Global Health (DIGH) <ul style="list-style-type: none"> • Bethany Hodge, MD, MPH • Mary Carter, MD, PhD |
| Distinction in Medical Education (DIME) <ul style="list-style-type: none"> • Jennifer Bruckner-Collins, PhD • Charles M. Kodner, MD • Pradip Patel, MD | Distinction in Research (DIR) <ul style="list-style-type: none"> • Dale Schuschke, PhD • Russ Prough, PhD |

STUDENT PARTICIPANTS

Class of 2017 (n = 37)

DIBL: Ashley N. Lee, Travis Paul Spaulding, Sarah Amtul Musawir Tariq, Nathan Scott Wiedemann

DIGH: Marlowe Gates Dieckmann, Ryan Christopher Eid, Tyler DeWitt Haffler, Ryan M. Kaufman, McNore Gashaw Lake, Allison Nicole Joann Lyle, Courtney Bourne Spensley

DIME: Diane Marie Carden Buckley, Elayna H. Dush-Bryant, Paul Brandon McGeorge, Kimberly D. Staudt, Samuel Clinton Walling

DIR: Danielle C. Berera, Mitchell James Buller, Hannah Elizabeth Canter, James Kyle Damron, Mark Anthony Eid, Tyler Edward Geers, Vincent Patrick Hancock, Evan Marcus Henricks, Elvis Joseph, Woihwan Kim, Dillon S. Pender, Vikram Gopal Ramjee, Michael Paul Rogers, Sara Ashley Sadeghi, Travis Allen Shutt, Andrew Birton Smith, Anna Hellmann Thamann, Govind Warriar, Matthew Nathaniel Williams, Matthew Alan Wilson, Ramakanth Reddy Yakkanti

Class of 2018 (n = 36)

DIBL: Taylor Hodge, Kristin Nosova, Michael Parsons, Shelby Schweinhart, Natalie Spiller

DIGH: Elena Brown, Jessica Nelson Eaton, Mackenzie Flynn, Margaret Means, Lucy Schuhmann

DIME: Wade Barton, Alissa Doll, Rhiannon Ledgerwod, Adam Neff, Melinda Ruberg, Katherine Yared

DIR: Oluwasayo Akinyosoye, Elizabeth Brooke, Angela Cao, Kevin Connolly, Tyler Fields, Jacob Fuqua, Gwynneth Horner, Samantha Jenkins, Smriti Kumar, Collin McKenzie, Adam Miller, Bailey Nelson, Thomas Neyer, David Patterson, Zaheen Rabbani, Henry Roberts, Jaime Shoup, Jennifer Sidey, Vanessa States, Keith Zoeller

Class of 2019 (n = 49)

DIBL: Samantha Edwards, Anne Geller, Jordan Jones, Carlos Lynes, Justin Penny, Brett Riedinger

DIGH: Randall Beaupre, Camila Calderon, John Deis, Rekha Gupta, Madison Kommor, Rina Perlin

DIME: Andrew Braun, Sabine Eid, Virginia Ferguson, J Alexander Gross, Joe Nash, Madelyn Oliver, Tali Pomerantz

DIR: Logan Bond, Alyssa Brown, Daniel Canby, Erika Chandler, Cynthia Duck, Wesley Field, Daniela Havens-Lastarria, Jamie Heimroth, Paul Henley, Collin Henry, Christina Kapsalis, Corey Ketchem, Maryam Khan, Austin King, Stephen Manek, Grant McKenzie, Ian McKinley, Megan Mercer, Ross Micciche, Corey Moran, Sahas Narain, James Newton, Brent Oxford, Will Risinger, James Rossman, Miranda Schmidt, Divyansh Sharma, Albert Shu, Richard Sims, Scott Warner

Class of 2020

DIBL: Mason English, Anne Ewing, Trevor Fain, Kevin Kwan, Jamaal Richie, Crystal Valadon

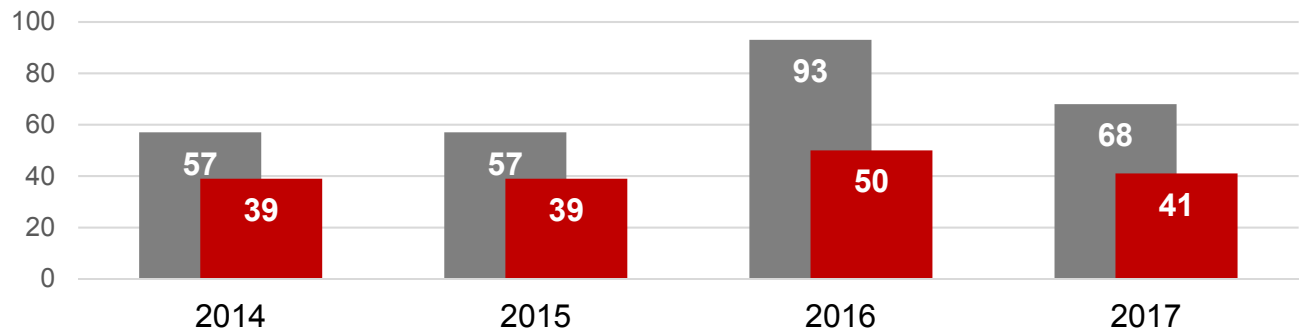
DIGH: Anna Downs, Barbara Ekeh, Emily Furnish, Cecily Kennedy, Collin Russell, David Thomas, Alison Woods

DIME: Destiny Duvall, La-Tisha Frazier, Faiha Hill, Shawn Jones, Steffanie Nelson, Jennifer Overfield, Lydia Prevost, Audrey Summers

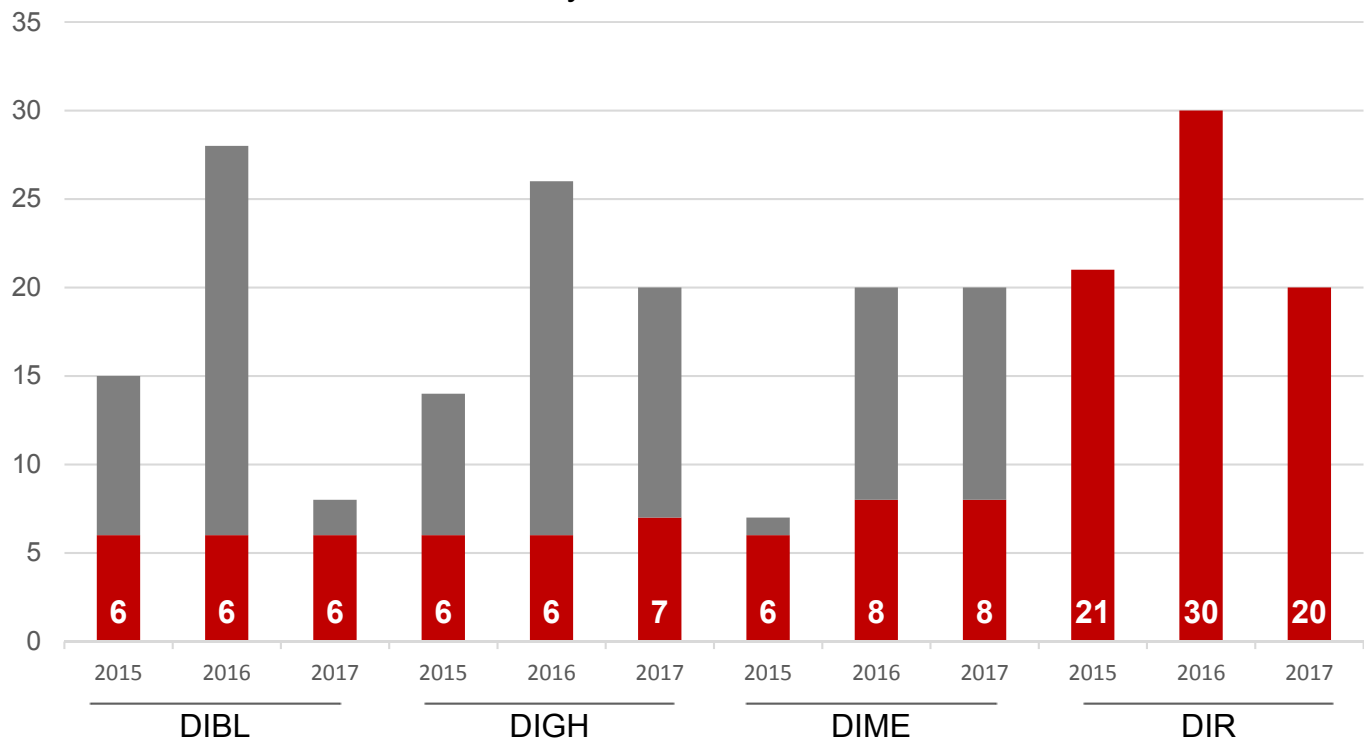
Applications and Accepted Students



By Year



By Track and Year



Graduates

	<i>Class of 2013</i>	<i>Class of 2014</i>	<i>Class of 2015</i>	<i>Class of 2016</i>	<i>Class of 2017</i>
<i>DIBL</i>	-	-	4	5	4
<i>DIGH</i>	-	-	4	4	7
<i>DIME</i>	-	-	-	5	5
<i>DIR</i>	16	19	22	32	21
<i>Total</i>	16	19	30	46	37

M1 = Class of 2020, M2 = Class of 2019, M3 = Class of 2018, M4 = Class of 2017

Students in the DT Program for AY 2016-17

	<i>M1 (N=153)</i>	<i>M2 (N=151)</i>	<i>M3 (N=152)</i>	<i>M4 (N=162)</i>	<i>Total</i>
<i>DIBL</i>	6	6	5	4	21
<i>DIGH</i>	7	6	5	7	25
<i>DIME</i>	8	8	6	5	27
<i>DIR</i>	0*	30	20	21	71*
<i>Total</i>	21	50	36	37	144

**DIR does not accept students until beginning of M2 after Summer Research Scholar Program*

ACHIEVEMENTS

The following DT Program outcomes were achieved during AY 2016-17:

- 2017 Graduates
 - **37 students graduated with a certificate from the program:**
 - 4 from DIBL, 7 from DIGH, 5 from DIME, and 21 from DIR
- DTAC Presentations
 - Teaching the Business of Medicine to Future Healthcare Leaders. Sutton, B., Miller, S., Kim, I.K. Platform Presentation at the Stanford X Meeting, Palo Alto, CA. September 15, 2016.
 - Shaw, M.A., Sawning, S., Gibson, S.B., Carr, E., Carter, M. The Distinction Track Program at the University of Louisville School of Medicine: An Evaluation of Mentor Perceptions. Association of American Medical Colleges, Southern Group on Educational Affairs Joint Regional Conference, April 2017.
- DT Poster Template
 - Mary Carter and Shelley Gibson created a PowerPoint research poster template for DT students to use for presentations.
- Research!Louisville DT Student Grouping
 - DT students presented their posters in a section of the poster hall designated to the DT program.



- DTAC meetings
 - DTAC met quarterly in AY 2016-2017
 - September 6, 2016; December 6, 2016; March 7, 2017; June 6, 2017
- Lunch and Learn for M1 Medical Students
 - 92 students were in attendance on January 4, 2017.
- Mentor Appreciation Reception on February 28, 2017
 - Dean Ganzel hosted an event to honor and thank DT mentors for their time and devotion to the DT Program.
 - Estimate of 50 in attendance.

- Celebration of Student Distinction on March 6, 2017
 - Students were invited to present posters showcasing their DT scholarship.
 - Estimate of 50 in attendance.

PROGRAMMATIC EVALUATION

The following DT Program evaluation outcomes are in progress for AY 2016-17:

- DT Program Graduating Students Survey (4th year students)
 - 25 (68%) of 37 graduating DT Program students completed an exit survey in April, 2017
 - A summary of 4th year DT student exit survey data will be presented at the December 5, 2017 DTAC meeting
- Faculty/Mentor Survey on DT Program Graduating Students
 - 64 (71%) of 90 faculty/mentors of graduating DT Program students completed an exit survey June – August, 2016
 - A summary of faculty/mentor survey data will be presented at the December 5, 2017 DTAC meeting
- End of Year Evaluation Survey (2nd and 3rd year students)
 - 42 (86%) of 49 2nd year and 28 (78%) of 36 3rd year DT Program students completed an end of year evaluation survey in May-June, 2017
 - A summary of 2nd and 3rd year DT student survey data will be presented at the December 5, 2017 DTAC meeting
- Continued IRB approval was achieved for a Longitudinal DT Program Evaluation/Research Study
 - To explore DT Program student outcomes in greater depth
 - To compare DT Program student outcomes (match results and scholarship) to non-DT student outcomes using MCAT, class rank, and Step scores as covariates

STUDENT AWARDS

The following DT students were recognized for their work in the DT Program:

- **Alyssa Brown** (DIR, Class of 2019) The Effects of Esophageal Distension on the Pharyngeal Phase of Swallow. Norton Healthcare Medical Student Award, 2nd Place. Poster presentation at Research!Louisville, October 2016. (Mentor: Teresa Pitts)
- **Erika Chandler** (DIR, Class of 2019) Cardiovascular Function Following Spinal Cord Injury is Intensified by Limiting Activity. Norton Healthcare Medical Student Award, 1st Place. Poster presentation at Research!Louisville, October 2016. (Mentor: Michelle Barati)
- **Alissa Doll** and **Katherine Yared** (DIME, Class of 2018) Clinical Skills Examination-3: Anxiety, Confidence, and Preparation Versus Performance on the Physical Exam. Greenberg Award for Medical Education. Poster presentation at Research!Louisville, October 2016. (Mentor: Mary Carter)
- **Jessica Eaton** and **Mackenzie Flynn** (DIGH, Class of 2018) received Fulbright-Fogarty Fellowships during the 2015-16 academic year. Each student spent AY 2016-17 doing research in sub-Saharan Africa. Eaton was in Malawi (Epidemiology, Management, and Functional Outcomes of Traumatic Brain and Spinal Cord Injury in a Low-Resource Setting) and Flynn was in Kenya (Determinants of Contraceptive Desires and Practices Among Postpartum Kenyan Adolescents). (Mentor: Mary Carter)
- **Austin King** (DIR, Class of 2019) Two Nrf2 Inducing Compounds Regulate Renal Tubule Cell Signaling Differently. Norton Healthcare Medical Student Award, 1st Place. Poster presentation at Research!Louisville, October 2016. (Mentor: Michelle Barati)
- **Sam Walling** (DIME, Class of 2017) National Achievement Award. American Cancer Society & National Colorectal Cancer Roundtable's "80% by 2018". The award included a \$1,000 donation to Surgery on Sunday Louisville, May 2017. (Mentor: Erica Sutton)

STUDENT SCHOLARSHIP

Student names in **bold**. Mentor names in **red** for AY 2016-17

	DIBL	DIGH	DIME	DIR	TOTAL
Manuscripts	1	5	1	32	39
<i>Accepted</i>	1	3	1	14	19
<i>Under Review</i>	0	3	0	18	21
Presentations	2	12*	15*	45	70
<i>Oral</i>	2	3	5	2	12
<i>Poster</i>	1	9*	10*	40	61
<i>Other</i>	0	0	0	3	3

*Students from each track worked cooperatively on the same presentation. Marked by a gray box.

Manuscripts

Distinction in Business and Leadership

1. **Lee, A.**, Johnson, B., Happee, L., **Sutton, B.** Outcomes at Bariatric Surgery Centers of Excellence and Non-Designated Centers: A Retrospective Cohort Study in a TRICARE Population. *The American Surgeon*. (Accepted)

Distinction in Global Health

2. **Eaton, J.**, Grudziak, J., Hanif, A.B., Chisenga, W.C., Hadar, E., **Charles, A.** The Effect of Anatomic Location of Injury on Mortality Risk in Sub-Saharan Africa: The Role of Head Injury. *Injury*, February 2017. (Under Review)
3. **Eaton, J.**, Hanif, A.B., Mulima, G., Kajombo, C., **Charles, A.** Outcomes Following Exploratory Burr Holes for Traumatic Brain Injury in a Resource-Poor Setting. *World Neurosurgery*, March 2017. (Under Review)
4. Udelsman, B.V., **Eaton, J.**, **Munniapan, A.**, Morse, C.R., Wright, C.D., Mathisen, D.J. Repair of Large Airway Defects with Bioprosthetic Materials. *The Journal of Thoracic and Cardiovascular Surgery*. 2016 Nov 30; 152(5):1388-97.
5. **Eaton, J.**, Grudziak, J., Hanif, A.B., Chisenga, W.C., Hadar, E., **Charles, A.** The Effect of Anatomic Location of Injury on Mortality Risk in Sub-Saharan Africa: The Role of Head Injury. *Injury*. May 2017. (Accepted)
6. **Eid, R.C.**, Knittle, E.M., Belknap, B., **Carter, M.B.** HIV Medication Adherence in Rural Southern Tanzania. *Tanzania Journal of Global Health*, February 2017. (In press)

Distinction in Medical Education

7. **Neff, A.**, **Kingery, S.** Complete Androgen Insensitivity Syndrome: A Problem-based Learning Case. *MedEdPORTAL Publications*, 2016; 12:10522.

Distinction in Research

8. **Berera, D.B., Lenneman, C.A.** Predicting Adverse Cardiac Events in Breast Cancer-PACE: An Examination of the Physical Activity and the Development of Cardiovascular Dysfunction During Chemotherapy. (In progress, not counted in DIR manuscript total.)
9. **Buller, M.J.,** Heiman, A.J., Davis, J.M., Lee, T.J., **Ajkay, N., Wilhelmi, B.J.** Immediate Breast Reconstruction of a Nipple Areolar Lumpectomy Defect with the L-flap Skin Paddle Breast Reduction Design and Contralateral Reduction Mammoplasty Symmetry Procedure: Optimizing the Oncoplastic Surgery Multispecialty Approach. *ePlasty*, August 2016. (Accepted)
10. **Buller, M.J.,** Lee, T.J., Davis, J. M., **Wilhelmi, B.J.** Bolstering Skin Grafts with a Surgical Scrub Brush: A Cost Effective Solution. *ePlasty*, August 2016. (Accepted)
11. **Buller, M.J.,** Schulz, S.A., Kasdan, M.L., **Wilhelmi, B.J.** The Incidence of Complex Regional Pain Syndrome in Simultaneous Surgical Treatment of Carpal Tunnel Syndrome and Dupuytren's Contracture. *Hand*, July 2016. (Accepted)
12. Fassbender, J., Ozkok, A., **Canter, H., Schaal, S.** A Comparison of Immediate and Delayed Vitrectomy for the Management of Vitreous Hemorrhage due to Proliferative Diabetic Retinopathy. *Ophthalmic Surgery, Lasers and Imaging Retina*, 2016, 47(1), 35-41.
13. Raque, J.L., **Matheson, P.J., Connolly, K.,** Shepherd, J.A., Stamper, E.A., et al. Unexpected Macrophage Activity Alters the Inflammatory Process in Necrotizing Enterocolitis. *J Cytokine Biology* 2:115, 2017.
14. Zhou, N., Masterson, S.P., **Damron, J.K.,** Guido, W., **Bickford, M.E.** Optogenetic Investigation of Thalamocortical Circuits for Active Vision: The Lateral Posterior Nucleus Links the Extrastriate Cortex, Striatum, and Amygdala. *Journal of Neuroscience*, March 2017. (Under Review)
15. Capello, Z.J., **Eid, M.A., Cash, E.,** Wilson, L., Tennant, P., Bumpous, J., **Potts, K.L.** Prognostic Indications of p16 and Smoking Status in Predicting the Need for Post Treatment Neck Dissection After Chemoradiation Therapy in Head and Neck Squamous Cell Carcinoma. *International Journal of Radiation Oncology, Biology, Physics*, 94(4), 908-909.
16. **Eid, M.A., Sutton, E.** A Case of Afferent Limb Syndrome after Roux-en-Y Gastric Bypass. Case study. *The American Surgeon*. (Accepted)
17. **Eid, M.A., Sutton, E.** A Case of Afferent Limb Syndrome after Roux-en-Y Gastric Bypass. Case study. *The American Surgeon*. (Under Review)
18. **Eid, M.A., Matheson, P.J., Downard, C.D.,** Garrison, R.N., **Smith, J.W.** DPR Decreases TLR4 and MYD88 Express in the Lung of After Resuscitated Hemorrhagic Shock. *Journal of Surgical Research*. (Under Review)
19. **Geers, T.,** Burrus, J., Malone, J., **Schadt, C.** Cutaneous Sarcoidosis Presenting as Pyoderma Gangrenosum-like Ulcers. *Clinical & Experimental Dermatology and Therapies*. (Under Review)

20. **Geers, T.**, Tidwell, J., **Schadt, C.** Graph-versus-Host Disease Presenting as Eosinophilic Fasciitis. *Cutis*. (Under Review)
21. Vence, L., **Geers, T.**, **Schadt, C.** Quality Improvement Survey Regarding Topical Medication Prescribing Practices. *Cutis*. (Under Review)
22. **McKenzie, G.**, **Martin, R.C.G.** Fitness Assessment and Optimization for Hepatopancreatobiliary Surgery, 2017. Optimizing Outcomes for Liver and Pancreas Surgery, Springer Sciences, book chapter. (Accepted)
23. **Pender, D.S.**, Gurka, M.K., Chuong, P., Fouts, B.L., Sobelov, A., McNally, M.W., Mezera, M., Woo, S.Y., **McNally, L.R.** Identification of Pancreatic Tumors in Vivo with Ligand-Targeted, pH Responsive Mesoporous silica Nanoparticles by Multispectral Optoacoustic Tomography. *Journal of Controlled Release*. 2016, Jun; 231(231):60-67.
24. **Roberts, H.**, Burton, J., Bishop, C., Rice, J., Carter, J., Pan, J., Rai, S., **Galandiuk, S.** The Influence of Microsatellite Instability and miR-99a on the mTOR Pathway in Colon Cancer Cell Lines. *Journal of Surgical Research*, 2017. (Under Review)
25. Schumer, E.M., Black, M.C., **Rogers, M.P.**, Trivedi, J.R., Birks, E.J., Lenneman, A.J., **Cheng, A.**, **Slaughter, M.S.** Donor Undersizing Results in Worse Post-Transplantation Survival in Left Ventricular Assist Device Patients: A UNOS Database Analysis. *ASAIO Journal*. 2016, Aug; 62(5): 571-577
26. Black, M.C., Schumer, E.M., **Rogers, M.P.**, Trivedi, J., **Slaughter, M.S.** Sunshine Heart CPulse: Device for NYHA Class III Heart Failure. *Future Cardiol*. 2016 Sep; 12(5):521- 531 3.
27. Whited, M., Trivedi, J.R., **Rogers, M.P.**, **Slaughter, M.S.** Emerging Outcomes of Left Ventricular Assist Device Therapies on Heart Transplant. *World Journal of Transplantation* *Invited Review*. (Under Review)
28. **Rogers, M.P.**, Reskin, S.M., Ubert, A., Black, M.C., **Grubb, K.J.** Hybrid Endovascular Aortic Arch Reconstruction for Acute Aortic Dissection: An Endovascular Bridge Technique for Complex Anatomy. *Vascular and Endovascular Surgery*. (Under Review)
29. **Rogers, M.P.**, Schumer, E.M., Guillory, R., Adkins, K., **Cheng, A.**, **Grubb, K.J.** Extracorporeal Membrane Oxygenation: A Case for Salvage Treatment in Influenza Induced Acute Respiratory Distress Syndrome Complicated by Heart Failure. *Cardiovascular Surgery - Clinics in Surgery Journal*. (Under Review)
30. Schumer, E.M., Gallo, M., **Rogers, M.P.**, Trivedi, J.R., Black, M.C., Massey, H.T., **Slaughter, M.S.** The Development of Pulmonary Hypertension Results in Decreased Post-Transplant Survival in LVAD Patients. *Annals of Thoracic Surgery*. (Under Review)
31. Huang, J., Trivedi, J., **Rogers, M.P.**, Romero, J., Bhatia, A., **Cheng, A.**, **Slaughter, M.S.** Impact of Left Ventricular Assist Device Support on Regional Cerebral Oxygen Saturation. *Anesthesia and Analgesia*. (Under Review)

32. **Rogers, M.P.**, Sobieski, M.A., Schumer, E.M., Lederer, E.D., **Slaughter, M.S.** Magnesium Handling in Patients with Impaired Renal Function Supported with a Continuous Flow Left Ventricular Assist Device. *Perfusion*. (Under Review)
33. **Sadeghi, S.A.**, **Cheng, A.** Alterations in Carbohydrate and Lipid Metabolism in Mice Lacking STBD1. *International Journal of Endocrinology*. (Under Review)
34. **Sadeghi, S.A.**, Miller, A; **Cheng, A.** Glycogen Storage Diseases: A Review. *International Journal of Endocrinology*. (Under Review)
35. **Sadeghi, S.**, **Miller, A.**, Biochemical and Clinical Aspects of Glycogen Storage Diseases. *Journal of Molecular Endocrinology*. (Under Review)
36. **Cheng, A.**, Zhu, Y., **Sadeghi, S.** Alterations in Carbohydrate and Lipid Metabolism in Mice Lacking STBD. *Journal of Molecular Endocrinology*. (Under Review)
37. **Shutt, T.A.**, Philips, P., Scoggins, C.R., McMasters, K.M., **Martin, R.C.** Permanent Loss of Preoperative Independence in Elderly Patients Undergoing Hepatectomy: Key Factor in the Informed Consent Process. *Journal of Gastrointestinal Surgery*, 2016. 20(5), 936-944.
38. Protyniak, B., **Shutt, T.A.**, **Farmer, R.W.** The Development of Squamous Cell Carcinoma in a Chronic Sinus Tract in Crohn's Disease: A Case Report. *Journal of Gastrointestinal Cancer*. (Under Review)
39. Keeney, J.T., Ren, X., **Warrier, G.**, Noel, T., Powell, D., Brelsfoard, J., Saatman, K., Sultana, R., St. Clair, D., **Butterfield, D.A.** Doxorubicin-Induced Elevated Oxidative Stress in Brain and Cognitive Decline: Protection by MESNA and Insights into Mechanisms of Chemotherapy-Induced Cognitive Impairment. (In progress, not counted in DIR manuscript total.)
40. Swomley, A.M., Triplett, J.C., Keeney, J.T., **Warrier, G.**, Pearson, K.J., Mattison, J.A., de Cabo, R., Cai, J., Klein, J.B., **Butterfield, D.A.** Comparative Proteomic Analyses of the Parietal Lobe from Rhesus Monkeys Fed a High Fat/Sugar Diet with and without Resveratrol Supplementation, Relative to a Healthy Diet: Insights into the Roles of Unhealthy Diets and Resveratrol on Function. *Journal of Nutritional Biochemistry*. 2017 Jan; 39:169-179.
41. **Yakkanti, R.**, **Onyekwelu, I.**, Carreon, L., Dimar, J. Solitary Osteochondroma of the Spine – A Case Series: Review of Solitary Osteochondroma with Myelopathic Symptoms. *Global Spine Journal*. 2017 Jun 1:2192568217701096.

Poster and Oral Presentations

Distinction in Business and Leadership

1. Hancock, M., **Spiller, N.**, **Kim, I.K.**, **Liu, G.** Strategy to Increase Patient Throughput in Two Large Urban Academic General Pediatric Teaching Practices. American Academy of Pediatrics Meeting, Council on Quality Improvement & Patient Safety, San Francisco, CA, October 2016. (Oral presentation)

2. **Wiedemann, N.**, Horowitz, R., Harris, Z., **Ruppe, M.**, Thai, A., **Sutton, B.**, Kim, C., Southard, G., Foster, B., **Kim, I.K.** A Financial Model for Point-of-Care Ultrasound in a Pediatric Intensive Care Unit. Critical Care Congress, Honolulu, HI, January 2017. (Oral presentation)

Distinction in Global Health

3. **Beaupre, R.**, Parker, B., Parker, R., **Platt, M.** Emergency Department Usage and Health Literacy in Spanish-Speaking Patients: A Literature Review. Research!Louisville, October 2016. (Poster presentation)
4. **Calderon, C.**, Alqaisi, A., Stephens, J., Ford, R., Carrico, R., **Bosson, R.** An Initial Profile of Syrian Refugees Newly Arriving to Kentucky: University of Louisville Global Health Center. Research!Louisville, October 2016. (Poster presentation)
5. Dush, E., **Dieckmann, M.**, & **Hodge, B.** Studying for the USMLE Step 1 Exam: Textbooks Versus Electronic Resources. Research!Louisville, October 2016. (Poster presentation)
6. **Eaton, J.**, Grudziak, J., Hanif, A.B., Chisenga, W.C., Hadar, E., **Charles, A.** The Effect of Anatomic Location of Injury on Mortality Risk in sub-Saharan Africa: the Role of Head Injury. College of Surgeons of East, Central, and Southern Africa, Mombasa, Kenya, December 2016. (Oral presentation)
7. **Eaton, J.**, Hanif, A.B., Mulima, G., Kajombo, C.A., **Charles, A.** Outcomes Following Exploratory Burr Holes for Traumatic Brain Injury in a Resource-Poor Setting. Congress of Neurological Surgeons Annual Meeting, Boston, MA, October 2017. (Oral presentation)
8. **Eaton, J.**, Bilal Hanif, A., Grudziak, J., **Charles, A.** Epidemiology, Management, and Outcomes of Traumatic Brain Injury in sub-Saharan Africa. National Neurotrauma Symposium and AANS/CNS Joint Section on Neurotrauma and Critical Care, Snowbird, UT, July 2017. (Poster presentation)
9. **Eaton, J.**, Mukuzunga, C., Grudziak, J., **Charles, A.** Characteristics and Outcomes of Traumatic Spine Injury in sub-Saharan Africa. Congress of Neurological Surgeons Annual Meeting, Boston, MA, October 2017. (Poster presentation)
10. **Flynn, M.**, Kinuthia, J., Matemo, D., John-Stewart, G., Unger, J., **Drake, A.** Determinants of Postpartum Adolescent Contraceptive Use in Western Kenya. University of Nairobi STD/HIV/SRH Collaborative Annual Meeting, January 2017. (Oral presentation)
11. **Haffler, T.**, Freeman, C., Platt, M., **Carter, M.** Patient Health Literacy and Use of Various Health Care Services. Research!Louisville, October 2016. (Poster presentation)
12. **Lyle, A.**, **Hodge B.**, **Stewart, D.** Ethical Considerations in Pre-Departure Training of Western Pediatricians Performing New Baby Discharge in Low-Resource Settings: A Literature Review. Research!Louisville, October 2016. (Poster presentation)
13. **Means, M.**, **Boling, W.** Quality of Life and Stigma in Chinese Pediatric Patients with Epilepsy: A Literature Review, Research!Louisville, October 2016. (Poster presentation)
14. **Spensley, C.**, Dholakia, J., Kingery, F., **Brothers, K.**, **Patel, P.**, **Carter, M.** Adolescent Reproductive Health Counseling by Outpatient Pediatric Providers: Results of a Cross-Sectional Survey, Research!Louisville, October 2016. (Poster presentation)

Distinction in Medical Education

15. **Buckley, D.C., Turcu, R.** Active Learning: Clinical Human Embryology Practice Question Bank and Exam Constructed by First Year Medical Students. Research!Louisville, October 2016. (Oral presentation)
16. **Buckley, D.C., Turcu, R.** Active Learning: Clinical Human Embryology Practice Question Bank and Exam Constructed by First Year Medical Students. Annual Pediatric Academic Societies (PAS) Meetings in San Francisco, CA, May 2017. (Poster presentation)
17. **Buckley, D.C., Turcu, R.** Active Learning: Clinical Human Embryology Practice Question Bank and Exam Constructed by First Year Medical Students. Annual Southern Regional Meetings as a Part of the Southern Society for Pediatric Research (SSPR) in New Orleans, LA, February 2017. (Oral presentation)
18. **Doll, A., Yared, K., Bohnert, C., Carter, M.** Clinical Skills Exam 3: Anxiety, Confidence, and Preparation Versus Performance on the Physical Exam. Research!Louisville, October 2016 (Poster presentation)
19. **Dush, E., Dieckmann, M., Hodge, B.** Studying for the USMLE Step 1 Exam: Textbooks Versus Electronic Resources. Research!Louisville, October 2016. (Poster presentation)
20. **Eid S., Brueckner, J.** Burnout and First Year Medical Students. Research!Louisville, October 2016. (Poster presentation)
21. **Ledgerwood, R., Neff, A., Steinbock, S., Sawning, S.** Addressing the Gap: Developing an LGBT-Inclusive Sexuality Module for Second-Year Medical Students. 4th Annual BNGAP LGBT Workforce Conference, New York, NY, April 2017. (Oral presentation)
22. **Neff, A., Kingery, S., Sawning, S., Steinbock, S.** Teaching 1st Year Medical Students about Complete Androgen Insensitivity Syndrome: Curriculum Methods to Teach About Differences in Sex Development (DSD). Association of American Medical Colleges, Southern Group on Educational Affairs (SGEA) Regional Conference, Charlottesville, VA, April 2017. (Poster presentation)
23. **Neff, A., Kingery, S., Ledgerwood, R., Steinbock, S., Sawning, S.** Teaching 1st Year Medical Students about Complete Androgen Insensitivity Syndrome: Curriculum Methods to Teach About Differences in Sex Development (DSD). Gay and Lesbian Medical Association Annual Conference, St. Louis, Missouri, September 2016. (Poster presentation)
24. **Neff, A., Kingery, S., Ledgerwood, R., Steinbock, S., Sawning, S.** Evaluation of First Year Medical Students' Knowledge and Attitudes Regarding Differences in Sexual Development Using a Problem-Based Case Learning on Complete Androgen Insensitivity Syndrome. 34th Annual GLMA Conference on LGBT Health, St. Louis, MO, September 2016. (Poster presentation)
25. **Walling, S., Sutton, E.** Surgery on Sunday Louisville: A Model for Providing Access to Outpatient Surgery for the Underinsured. Research!Louisville, October 2016. (Poster presentation)

26. **Walling, S., Patel, P.D., Sutton, E.** Development of a Longitudinal Service Learning Experience in an Ambulatory Surgery Clinic. Association of Surgical Education, April 2017. (Oral presentation)
27. **Warner, S., Sutton, E.,** Roussel, T., Sharm, M.K., **Pantalos, G.** Preparation for Endoscopic Surgical Procedures During Exploration Space Missions. Research!Louisville, October 2016. (Poster presentation)
28. **Wilson, M., Matheson, P.,** Weaver, J., **Downard, C.,** Garrison, R., **Smith, J.** Damage-Associated Molecular Patterns Are Mitigated by DPR in Resuscitated Hemorrhagic Shock. Research!Louisville, October 2016. (Poster presentation)
29. **Yared, K., Doll, A.,** Bohnert, C., **Carter, M.** Do Anxiety, Confidence, Preparation, and Test Familiarity Matter? Evaluating Medical Student Performance on High-Stakes In-House Clinical Skills Exams. Southern Group on Educational Affairs Conference, April 2017. (Oral presentation)

Distinction in Research

30. **Bond, L., Matheson, P.,** Graham, V., **Eid, M., Kapsalis, C., Matheson, P., Downard, C., Smith, J.** Fresh Frozen Plasma (FFP) Resuscitation of Hemorrhagic Shock Restores Liver Blood Flow and Prevents Lung ICAM-1 Expression. Research!Louisville, October 2016. (Poster presentation)
31. **Bond, L., Matheson, P.,** Graham, V., **Eid, M., Kapsalis, C.,** Matheson, A., **Downard, C., Smith, J.** Resuscitation of Hemorrhagic Shock Using Fresh Frozen Plasma Prevents Lung ICAM-1 Expression. Research!Louisville, Louisville, KY, October 2016. (Poster presentation)
32. **Bond, L., Matheson, P.,** Graham, V., **Eid, M., Kapsalis, C.,** Matheson, A., **Downard, C., Smith, J.** Resuscitation of Hemorrhagic Shock Using Fresh Frozen Plasma Prevents Lung ICAM-1 Expression. Academic Surgical Congress, Las Vegas, Nevada. 2017. (Quick Shot Session presentation)
33. **Brown, A.,** King, S., **Pitts, T.** The Effects of Esophageal Distension on the Pharyngeal Phase of Swallow. Research!Louisville, October 2016. (Poster presentation)
34. **Canby, D.,** May, P., Compton, K., DiGiorgio, C., Sexton, K., Hood, H., Mokshagundam, S., **Winters, S.** Obesity, Glycemic Status and Periodontal Disease in Adults with Intellectual and Developmental Disabilities. Research!Louisville, October 2016. (Poster presentation)
35. **Chandler, E.,** Wood, D., **Magnuson, D.,** DeVeau, K., Hamilton, G., Hainline, C. Cardiovascular Function Following Spinal Cord Injury is Intensified by Limiting Activity. Research!Louisville, October 2016. (Poster presentation)
36. Zhou, N., Masterson, S.P., **Damron, J.K.,** Guido, W., **Bickford, M.E.** Optogenetic Investigation of Thalamocortical Circuits for Active Vision: The Lateral Posterior Nucleus Links the Extrastriate Cortex, Striatum, and Amygdala. Society for Neuroscience International Conference, San Diego, November 2016. (Poster presentation)

37. **Duck, C., Cash, E.,** Brinkman, C., Albert, C., Chilton, P., Mitchell, T., Sephton, S. Depression and Its Relationship to IL-6, VEGF and Quality of Life in Head and Neck Cancer. Research!Louisville, October 2016. (Poster presentation)
38. **Eid, M.A., Matheson, P.J., Downard, C.D.,** Garrison, R.N., **Smith, J.W.** DPR Decreases Lung ICAM-1 and MPO after Resuscitated Hemorrhagic Shock. Academic Surgical Congress, Las Vegas, NV, 2017. (Quick Shot Session presentation)
39. **Field, W.,** Rostas, J., Schlegel, M., Scoggins, C., Philips, P., McMasters, K., **Martin, R.C.G.** Quality of Life Assessment for Patients Undergoing Irreversible Electroporation for Treatment of Locally Advanced Pancreatic Cancer. Research!Louisville, October 2016. (Poster presentation)
40. Hong, Y., Rostas, J., **Hancock, V.,** McMasters, K., Philips, P., Davis, E., **Martin, R.C.G.,** Scoggins, C. The Impact of Falciform Pedicle Wrap After Pancreaticoduodenectomy on Post-Operative Pancreatic Fistula. Southwestern Surgical Congress, April 2017. (Poster presentation)
41. **Havens-Lastarra, D., Caperell, K.** Predictors Of Disposition For Children With Severe Asthma Exacerbation. Research!Louisville, October 2016. (Poster presentation)
42. **Heimroth, J.,** Matzke, J., Crawford, S., **Sutton, B., Sutton, E.** Automated External Defibrillator Functionality in the Community. Research!Louisville, October 2016. (Poster presentation)
43. **Henley, P.,** Trivedi, J., **Slaughter, M.** Intra-aortic Balloon Pump Use in High Risk Coronary Artery Bypass Grafting. Research!Louisville, October 2016. (Poster presentation)
44. **Henry, C., Borchman, D.** Influence of Saturation on Tear Meibum Lipid Structure. Research!Louisville, October 2016. (Poster presentation)
45. **Kapsalis, C., Matheson, P.,** Shepherd, J., **Bond, L., Smith, J., Downard, C.,** Hata, J. Human Necrotizing Enterocolitis (NEC) Genome Analysis Shows Relaxin Family Gene Changes. Research!Louisville, October 2016. (Poster presentation)
46. **Ketchum, C.,** Barve, A., **Beverly, L.** Novel Drug Combinations Sensitize Leukemia Cells to a Bcl-2 Inhibitor. Research!Louisville, October 2016. (Poster presentation)
47. **Khan, M.,** Dassanayaka, S., Bradley, J., Long, B., Guo, Y., Bolli, R., Wysoczynski, M., **Jones, S.** Characterization of Heart Failure-Derived Cardiac Mesenchymal Cells for Autologous Transfer. Research!Louisville, October 2016. (Poster presentation)
48. **Kim, W., Stevenson, M.** Temporal Trends in Testing for Respiratory Pathogens Among Infants ≤ 60 Days of Age Who Undergo Lumbar Puncture in the Emergency Department. American Academy of Pediatrics National Conference & Exhibition, San Francisco, California, 2016. (Poster presentation)
49. **King, A., Barati, M.,** Isaacs, S. Two Nrf2 Inducing Compounds Regulate Renal Tubule Cell Signaling Differently. Research!Louisville, October 2016. (Poster presentation)
50. **Manek, S.,** Galbraith, N., Walker, S., Gardner, S., Carter, J., **Galandiuk, S., Polk, H.C.** Patients with Deep Surgical Site Infection Have Suppressed Monocyte Function and Increased IRAK-M Expression. Research!Louisville, October 2016. (Poster presentation)

51. **McKenzie, G.M., Martin, R.C.G.** Comprehensive Geriatric Assessment for Hepatopancreatobiliary Surgical Patients – A Systematic Review. Research!Louisville, October 2016. (Poster presentation)
52. **McKinley, I.,** Kelleher, A., Lipinski, A., **Conklin, D.** Vascular Effects of Electronic Cigarette Exposure: Role of Formaldehyde. Research!Louisville, October 2016. (Poster presentation)
53. **Mercer, M.,** Donaldson, M., Rostas, J., **Ajkay, N.,** Bhandari, B. Estimated Percentage of Breast Volume Excision and Its Relationship with Quality of Life and Satisfaction after Breast Conservation Therapy for Breast Cancer. Research!Louisville, October 2016. (Poster presentation)
54. **Mercer, M.,** Donaldson, M., Bhandari, B., Rostas J., **Ajkay N.** Estimated Percentage of Breast Volume Excision and Its Relationship with Quality of Life and Satisfaction after Breast Conservation Therapy for Breast Cancer. American Society of Breast Surgeons 18th Annual Meeting, April 2017. (Poster presentation)
55. **Micciche, R., Grubb, K.** Evaluating Quality of Life Metrics for Patients Undergoing TAVR. Research!Louisville, October 2016. (Poster presentation)
56. **Miller, A., Malkani, A.,** Smith, L., Ulrich, S. Cementless TKA Using a Highly Porous Titanium Tibial Baseplate. Research!Louisville, October 2016. (Poster presentation)
57. **Moran, C., Bothers, K.** A Cross-Disciplinary Defense of Protecting the Financial Viability of Rural Hospitals. Research!Louisville, October 2016. (Poster presentation)
58. **Narain, S.,** Abhari, S., Pushpakumar, S., **Sen, U.** Adult Resident Progenitor Cells Repair Acute Glomerular Injury. Research!Louisville, October 2016. (Poster presentation)
59. **Newton, J.,** Howard, R., Siladi, A., Myers, S., Ohri, S.S., Hetman, M., Shoupe, J., **Whittemore, S.** Repurposing FDA-approved Drugs as Novel Therapeutics to Treat ER Stress After SCI. Research!Louisville, October 2016. (Poster presentation)
60. **Oxford, B.,** Carter, J., Burton, J., Eichenberger, M., Gardner, S., **Galandiuk, S.** Determining the Effect of miR-200 Family on K-Ras Expression in Normal Colon Epithelium and Dukes' C Colorectal Cancer Cell Lines. Research!Louisville, October 2016. (Poster presentation)
61. **Risinger, W., Merchant, M.,** Wilkey, D., Li, M., Isaacs, S., Crider, J. Associations of Response to High Dose Erythropoiesis Stimulating Agents (ESAs) and Lipoproteins in End-stage Renal Disease (ESRD) . Research!Louisville, October 2016. (Poster presentation)
62. **Roberts, H.,** McClain, M., Rice, J., Carter, J., Burton, J., **Galandiuk, S.** Can Cancer Cell Lines Clarify Molecular Mechanisms of Hereditary Non-Polyposis Colorectal Cancer (HNPCC)? Academic Surgical Congress, Jacksonville, FL, February 2016. (Oral presentation)
63. **Rossmann, J.,** Speer, R., Wise, S.S., **Wise, J.P.** Cytotoxic and Genotoxic Effects of Hexavalent Chromate on Alligator Skin and Bronchial Fibroblasts. Research!Louisville, October 2016. (Poster presentation)
64. **Schmidt, M., Appakalai, B.N.,** Narayanan, S., Hughes, M.J., Tweed, B., Dhanasekaran, M., Loganathan, G., Hoying, J.B., Williams, S.K., Ramakrishnan, V.M. Bioengineered Human Pancreatic Islets for the Treatment of Type-I Diabetes: Stimulation of Intra-islet Endothelial

Cells to Form Peri-islet Capillaries for Improving Islet Cell Survival and Function.
Research!Louisville, October 2016. (Poster presentation)

65. **Sharma, D., Martin, R.C.G.** Analysis of Local Therapy in Oligometastatic Pancreatic Cancer. Research!Louisville, October 2016. (Poster presentation)
66. **Shu, A.,** Onyekwelu, I., Dimar, J., Carreon, L., Smith, L., **Malkani, A.** Outcomes of Primary THA Following Lumbar Spine Fusion. Research!Louisville, October 2016. (Poster presentation)
67. Rostas, J. Mbah, N., **Shutt, T.,** Philips, P., Scoggins, C.R., **Martin, R.C.G.** Clinical Effect of Enoxaparin on International Normalized Ratio after Partial Hepatectomy. Western Surgical Association Meeting, 2016. (Poster presentation)
68. Worthen M., **Shutt, T.A.,** **Higgins, T.** Outcomes and Complications of Endoscopic Septoplasty Without Intranasal Packing or Splint Placement. Combined Otolaryngology Spring Meetings, April 2017. (Poster presentation)
69. **Sims, A.,** Sherwood, A., Conklin, C., **Barati, M.,** Gagnon, K., Lederer, E. Differential Regulation of NPT2a and NHERF1 Expression by Changes in Extracellular Phosphate Concentration. Research!Louisville, October 2016. (Poster presentation)
70. **Smith, A.,** Isaacs, S., Madhavi, R., Klein, J., **Merchant, M., Barati, M.** Minichromo Maintenance Protein 3 Regulates Renal Tubule Cell Signaling Associated with Nrf2 Activation. American Society of Nephrology, Chicago, IL, November 2016. (Poster presentation)
71. Greschel, S., **Warrier, G.,** Seabrook, N., **Bishop, L.** IgA Nephropathy: A Rare Renal Complication of Hepatitis C Infection. American College of Physicians – Kentucky Chapter, Lexington, KY, October 2016. (Poster presentation)
72. **Warrier, G.,** Guardiola-Bright, J., Seabrook, N., **Bishop, L.** Very Long Chain Acyl-Coenzyme A Dehydrogenase Deficiency (VLCADD): A Rare Adult-Onset Variant. American College of Physicians – Kentucky Chapter, Lexington, KY, October 2016. (Abstract accepted)
73. **Onyekwelu, I., Yakkanti, R.,** Protzer, L. Orthopaedic Surgical Site Infection and The Surgical Wound Classification System. Research!Louisville, October 2016. (Poster presentation)
74. **Onyekwelu, I., Yakkanti, R.** Surgical Wound Classification and Surgical Site Infections in Orthopaedic Patients. Mid-America Orthopaedic Association, Amelia Island, Florida, April 2017. (Oral presentation)

DT PROGRAM STUDENT PROJECTS

The following is a list of DIBL, DIGH, DIME, and DIR longitudinal projects (students work on these projects over the length of their DT Program experience):

Student names in **bold**. Mentor names in **red**.

Distinction in Business and Leadership

Class of 2017

1. Deploying Mobile Check-In to Optimize Outpatient Clinic Workflow. **Sarah Tariq**, **Brad Sutton**, MD, MBA.
2. Effectiveness of Bariatric Surgery Referrals to Centers of Excellence. **Ashley Lee**, Bob Johnson MD, **Laura Happe**, MD, PharmD, MPH, **Brad Sutton**, MD, MBA.
3. Cost Effectiveness Analysis of Point of Care Ultrasound Implementation in the Pediatric ICU. **Nathan Wiedemann**, **Alex Thai**, Russ Horowitz, MD, Leah Zena, MD, **Michael Ruppe**, MD, **Brad Sutton**, MD, MBA, Dave McLario, MD, Fred Warkentine, MD, Keith Cross, MD, MSc, MS, Ben Foster, PhD, **In K. Kim** MD, MBA.
4. Cost Effectiveness Analysis of Implementation a Satellite Office for Learning Disability Evaluations. **Travis Spaulding**, **Alex Thai**, Scott Tomchek, PhD, **Brad Sutton**, MD, MBA, **In K. Kim** MD, MBA.

Class of 2018

1. Cost Modeling of MRSA Precautions for Inpatient Pediatric Surgery Patients. **Taylor Hodge**, Zaria Murriell, MD, **Mary Fallat**, MD.
2. Medtronic SEEQ Mobile Cardiac Telemetry Economic Analysis. **Kristin Nosova**, Jessica Lopatto, John Orozco, MD, **Brad Sutton**, MD, MBA.
3. Cost Effectiveness Analysis of Point of Care Ultrasound to Reduce Ionizing Radiation Exposure from CT Scans in Pediatric Trauma Patients. **Michael Parsons**, **Katy Flynn**, MD, **Mary Fallat**, MD.
4. Cost Effectiveness Analysis of Establishing a Statewide Telemedicine Network. **Shelbye Schweinhart**, **Brad Sutton**, MD, MBA, **In Kim**, MD, MBA, Smitha Bulloch MD, MBA.
5. Strategy to Increase Patient Throughput in a Large Urban Academic General Pediatrics Teaching Practice. **Natalie Spiller**, Melissa Hancock, MD, **Brad Sutton**, MD, MBA, **In Kim**, MD, MBA, **Gil Liu** MD.

Class of 2019

1. Poorly Controlled Hemoglobin A1Cs in Type 2 Diabetics as Related to New MACRA Quality Measures. **Samantha Edwards**, **Brad Sutton**, MD, MBA.

2. (No project at date of report finalization) **Anne Geller**.
3. Systematic Review of the Literature Surrounding the Use of tPA in DCD Liver Transplants and the cost of tPA Versus the Cost Associated with Post-Transplant Biliary Complications. **Jordan Jones**, Robert Cannon, MD, Christopher Jones, MD.
4. (No project at date of report finalization) **Carlos Lynes**.
5. (No project at date of report finalization) **Justin Penny**.
6. (No project at date of report finalization) **Brett Riedinger**.

Distinction in Global Health

Class of 2017

1. Use of a Mobile Decision Support Software Tool vs Other Information Sources by Pre-clinical Medical Students in a Low-resource Setting. **Marlowe Dieckmann**, Bethany Hodge MD MPH, Michael Keibler.
2. CTC Mdabulo: A Retrospective Analysis of Pre-Existing Quality Evaluation Survey Data of HIV Medication Adherence in a Highly Endemic District of Rural Tanzania. **Ryan Eid**, Emily M. Knittle, Benjamin Belknap, Mary Carter MD PhD.
3. Patient Health Literacy and Use of Various Health Care Services. **Tyler Haffler**, Clifford Freeman, Melissa Platt, MD, Mary Carter MD PhD.
4. Global Utilitarianism: A Different Way of Looking at the Same Information. **Ryan Kaufman**, Kyle Brothers, MD, Jack Furlong, PhD.
5. Assessing the Three Delays in Maternal Health Care: A Comparison of Sierra Leone and Bangladesh in the MDG Era. **MeNore G. Lake**, Navjyot K. Vidwan, MD.
6. What Do We Need to Unlearn: Western Pediatricians Teaching Newborn Discharge in Low-Resource Settings. **Allison Lyle**, Bethany Hodge MD MPH, Dan Stewart, MD.
7. Establishing Trends in Adolescent Sexual and Reproductive Health Counseling by Outpatient Pediatric Providers: Results of a Cross-Sectional Survey. **Courtney Spensley**, Jhalak Dholakia, Francesca Kingery, Kyle Brothers, MD, Pradip Patel, MD, Mary Carter, MD PhD.

Class of 2018

1. Quality of Life of the Undocumented Hispanic Women Immigrant Workers of the Churchill Downs Backstretch. **Elena Brown**, Sara Robertson DNP, APRN, FNP, Kristen Connors BA, Mary Carter MD., PhD.
2. Epidemiology, Management, and Functional Outcomes of Traumatic Brain and Spinal Cord Injury in a Low-Resource Setting. **Jessica Eaton**, Zaria Murrell, MD.

3. Determinants of Contraceptive Desires and Practices Among Postpartum Kenyan Adolescents. **Mackenzie Flynn**, **Alison Drake**, MD.
4. Evaluation of Quality of Life and Stigma in Patients with Epilepsy at Beijing Children's Hospital. **Margaret Means**, **Warren Boling**, MD.
5. Retrospective Evaluation of CD4 Counts and Changes in ART Regimen at the Mdabulo CTC in Mufindi, Tanzania. **Lucy Schuhmann**, **Bethany Hodge MD MPH**, **Mary Carter MD.**, PhD.

Class of 2019

1. Emergency Department Usage and Health Literacy in Spanish-Speaking Patients. **Randall Beaupre**, BS, **Melissa Platt**, MD.
2. Study of the Impact Medical Interpreters Have on Patient Care and Physician Interactions. **Camila Calderon**, **Rahel Bosson**, MD.
3. Service Trip Logistics: Correlation of Trip Logistics to Number of Patients Served in Tanzania. **John Deis**, **Bethany Hodge**, MD, **Mary Carter**, MD, PhD.
4. Screening Mental Health and Trauma in Children of Latino Immigrant Parents Based on Immigration Status. **Rekha Gupta**, **Maria Nota**, MD, **Sheridan Langford**, MD.
5. Disaster Medicine Certificate Series. **Madison Kommor**, **Bethany Hodge**, MD, **Laura Voegelé**, MD.
6. Barriers to Contraception Access: A Narrative Study. **Rina Perlin**, **Ashlee Bergin**, MD.

Distinction in Medical Education

Class of 2017

1. Active Learning: A Human Embryology Question Bank and Practice Exam Constructed By First Year Medical Students. **Diane Carden**, **Rodica Turcu**, MD.
2. Survey of the Referencing Habits of Third Year Medical Students Before and After Exposure to a Novel Pediatric Decision Support Software Mobile Application (PEMSoft™). **Elayna Dush**, Marlowe Diekmann, **Bethany Hodge**, MD.
3. Surgical Skills Self-Study Online Module. **Brandon McGeorge**, **Charles Kodner**, MD.
4. Tutoring Via Clinical Cases in MS2 Pharmacology. **Kim Staudt**, **Charles Kodner**, MD.
5. A Replicable Model for Online, Case-Based Learning in Medical Anatomy and Physical Exam Education. **Sam Walling**, **Pradip Patel**, MD, **Jennifer Brueckner-Collins**, MD, Craig Ziegler, PhD.
6. Surgery on Sundays. **Sam Walling**, **Erica Sutton**, MD, **Pradip Patel**, MD.

Class of 2018

1. Identifying and Addressing Knowledge Gaps with Medical Students on Managing Non-Critically Ill Patients with Impatient Hyperglycemia. **Wade Barton**, Charles Kodner, MD.
2. Evaluation of a New Teaching Strategy for CSE-3 History, Physical Exam, and Note Writing Skills. **Alissa Doll**, Katherine Yared, Mary Carter, MD, PhD, Charles Kodner, MD, Rodica Turcu, MD.
3. Beyond the Problems: Educating Medical Students in LGBT Inclusive Human Sexuality and Lifespan Development. **Rhiannon Ledgerwood**, Pradip Patel, MD, Stacie Steinbock, MEd.
4. Human Sexuality Across the Lifespan. **Rhiannon Ledgerwood** and Adam Neff, Stacie, Steinbock, MEd.
5. Evaluation of First Year Medical Students' Knowledge and Attitudes Regarding Differences in Sexual Development Using a Problem-Based Learning Case on Complete Androgen Insensitivity Syndrome. **Adam Neff**, Stacie Steinbock, MEd, Susan Sawning, MSSW, Suzanne Kingery, MD.

Class of 2019

1. A Comparison of Well-Being: Signs of Burnout, Stress, and Academic Performance in Medical Students Using Group Exercise as Compared to Individual Exercise. **Andrew Braun**, Pradip Patel, MD, Karen Hughes Miller, MD, Craig Zeigler, PhD.
2. Yoga Anatomy. **Sabine Eid**, Jennifer Brueckner-Colliuns, MD.
3. Opioid Knowledge Assessment for Rural High School Juniors and Seniors. **Virginia Ferguson**, Charles Kodner, MD.
4. Student Wellness in Correlation with Shelf Exam Performance. **J. Alexander Gross**, Rodica Turcu, MD, Charles Kodner, MD.
5. Surgical Dissections: A Novel Approach to Clinical Anatomy in Medical Gross Anatomy. **Joe Nash**, Jennifer Brueckner-Collins, MD.
6. (No project at date of report finalization) **Madelyn Oliver**
7. Use of Problem-Based Learning as a Tool to Evaluate and Enhance Medical Student Knowledge of Abortion. **Tali Pomerantz**, Pradip Patel, MD, Ashlee Bergin, MD.

Distinction in Research

Class of 2017

1. Regulation of Nrf2 by Minichromosome Maintenance Proteins in Renal Tubule Cells. **Andrew Smith**, Michelle Barati, PhD.

2. DPR Up-Regulates VEGF-A and Reduces Edema and Acute Lung Injury in Resuscitated Hemorrhagic Shock. **Matthew Wilson**, Jason Smith, PhD.
3. A Novel Experimental Model to Investigate the Role of Microglial Cells in Retinal Edema. **Hannah Canter**, Schlomit Schaal, PhD.
4. PACE in Breast Cancer: Predicting Adverse Cardiac Events in Breast Cancer. **Danielle Berera**, Carrie Lenneman, PhD.
5. Ketamine Coadministration and Sedation Related Outcomes During Dexmedetomidine Sedation for Pediatric MRI. **Ramakanth Yakkanti**, John Berkenbosch, PhD.
6. Parabolic Flight Evaluation of an Aqueous Immersion Surgical System for Reduced Gravity. **Elvis Joseph**, George Pantalos, PhD.
7. Curcumin and GI Cancer. **Tyler Geers**, Robert C.G. Martin, MD, PhD.
8. Targeting Cytosolic Aspartate Aminotransferase in Human Pancreatic and Lung Carcinoma Using a Novel Inhibitor In Vitro. **Govind Warriar**. Jason Chesney, MD, PhD.
9. Demographic Differences in Severe vs. Non-Severe Asthma Exacerbations in a Pediatric Emergency Department. **Evan Henricks**, Kerry Caperell, MD, MS.
10. An Ex Vivo Perfusion System for Animal Vessels. **Mitchell Buller**, Kevin Soucy, PhD.
11. Development of Theranostic Mesoporous Silica Nanoparticles for Pancreatic Cancer. **Dillon Pender**, Lacey McNally, PhD.
12. Magnesium Handling in Patients with Impaired Renal Function Supported with a Continuous Flow Left Ventricular Assist Device. **Michael Rogers**, Mark Slaughter, MD.
13. Investigating the Role of STBD1 in Lipid Metabolism. **Sara Sadeghi**, Alan Cheng, PhD.
14. Permanent Loss of Preoperative Independence in Elderly Patients Undergoing Hepatectomy: Key Factor in the Informed Consent Process. **Travis Shutt**, Robert C.G. Martin, MD, PhD.
15. Tuberous Sclerosis Complex: Special Populations and Better Treatment. **Anna Hellmann Thamann**, David Samuelson, PhD.
16. The Role of MicroRNA-21 in the Macrophage Response to Peritonitis. **Vikram Ramjee**, William Cheadle, PhD.
17. Electrocortical Biomarkers of Premotor Preparation Abnormality in Autism. **Vincent Hancock**, Tato Sokhadze, PhD.
18. Respiratory Pathogens in Febrile Infants Less than 60 Days Old. **Woi Kim**, Michelle Stevenson, MD, MS.

Class of 2018

1. Stereotactic Ablative Radiotherapy (SABR) as Salvage for Parenchymal Lung Recurrences Following Initial Curative Surgery. **Mary Hatch**, Nicola Garbett, PhD.

2. Lipid-Derived Acrolein Disrupts Intestinal Barrier Function. **Oluwasayo Akinyosoye**, **Swati Joshi-Barve PhD**.
3. The Concordance Between SPT and IgEs in Older Adults with Asthma. **Elizabeth Brooke**, **Barbara Polivka PhD**.
4. Low-Dose Radiation: A Novel Approach to Prevent and Treat Diabetic Nephropathy. **Angela Cao**, **Lu Cai PhD**.
5. Ileal CCL3 and IL-12 Expression in Inflammatory Events Associated with Nectrotizing Enterocolitis. **Kevin Connolly**, **Cynthia Downard, PhD**.
6. The Effect of Formal Trauma Choreography Training on Vital Sign Documentation. **Tyler Fields**, **Annie Rominger, MD, MPH, MSc**, and **Megan Laniewicz, MD**.
7. Characterization of Potential Calibration Standards for IVD Assays: Biotechnology Pathways to Commercialization. **Jacob Fuqua**, **Stephen Carrithers, PhD**.
8. Using siRNA Nanoparticles to Modulate CCR5 Host Cell Receptor Expression as an HIV Prevention Strategy. **Gwynneth Horner**, **Jill Steinbach, PhD**.
9. Chronic Low Level Arsenite Exposure Induces Matrix Remodeling Pathways in Human Keratinocytes. **Samantha Jenkins**, **J. Christopher States, PhD**.
10. Exploring the Use of Albumin Affinity Chromatography for Elucidating the Origin of Differential Scanning Calorimetry Thermogram Changes in Disease. **Smriti Kumar**, **Nichola Garbett, PhD**.
11. Enhancement of NAFLD Risk by Vinyl Chloride: Role of Adipose Tissue in a Mouse Model. **Collin McKenzie**, **Julianne Beier, PhD**.
12. Genetic Polymorphisms in 5-FU Related Enzymes Predict Complete Pathologic Response in Rectal Cancer. **Bailey Nelson**, **Susan Galanduik, PhD**.
13. Determining the Functional Significance Between a Novel Glycogen Binding Protein STBD1 and Acid α -Glucosidase. **Adam Miller**, **Alan Cheng, PhD**.
14. A Novel Method for Distinguishing Normal Retinal Layers Based on SD-OCT Imaging. **Thomas Neyer**, **Schlomit Schaal, PhD**.
15. Can Cancer Cell Lines Clarify Molecular Mechanisms of Hereditary Non-Polyposis Colorectal Cancer? **Henry Roberts**, **Susan Galanduik, PhD**.
16. Drug Screen for Endoplasmic Reticulum Stress Response in Oligodendrocyte Progenitor Cells. **Jaime Shoup**, **Scott Whittemore, PhD**.
17. Development of a Primary Hepatocyte Model for TCE and PCE toxicity. **Jennifer Sidey**, **Matt Cave, MD, PhD**.
18. Development of a Plasma miRNA Panel in Detecting Response to Treatment of Colorectal Adenoma and Colorectal Cancer. **Vanessa States**, **Susan Galanduik, PhD**.

19. Evaluation of Survival Prediction Algorithms for Adult Severe Respiratory Failure Patients Treated with Veno-Venous Extracorporeal Membrane Oxygenation. **Keith Zoeller**, **Zhongjun Wu**, **PhD**.

Class of 2019

DIR projects are established by 3rd year presentations at the end of the spring semester (April 2018); these will be available in the 2017-18 Annual Report.