**Brian W. Gray, MD**

**EDUCATION:**

**Post-graduate**

Department of Surgery

University of Michigan Hospitals Resident, General Surgery 2007 – 2014

Department of Surgery Fellow, Pediatric Surgery 2014 – 2016

Section of Pediatric Surgery

Indiana University

School of Medicine (IUSM)

**Graduate**

Vanderbilt University Doctor of Medicine 2002 – 2007

School of Medicine

**Undergraduate**

University of Notre Dame Bachelor of Science 1998 – 2002

 Japanese Language

 Summa Cum Laude

**APPOINTMENTS:**

**Academic**

IUSM Assistant Professor of Surgery 2016 – present

IUSM General Surgery Pediatric Surgery Rotation Director 2017 – present

Residency Program

IUSM Pediatric Surgery Associate Fellowship Program Director 2018 –present

Fellowship

**Non-academic**

Oakwood Hospital, Dearborn, MI Moonlighting ICU Resident 2010 – 2012

Riley Hospital for Children Attending Surgeon 2016 – present

At IU Health (IUH)

Indianapolis, IN

IUH North Hospital, Carmel, IN Attending Surgeon 2016 – present

Peyton Manning Children’s Attending Surgeon 2016 – present

Hospital at St. Vincent Hospital

at Ascension Health

Indianapolis, IN

Community North Hospital Attending Surgeon 2018 – present

Indianapolis, IN

**LICENSURE, CERTIFICATION, SPECIALTY BOARD STATUS:**

Advanced Cardiac Life Support (ACLS) Certification 2007 – 2014

National Board of Medical Examiners 2008 – present

Advanced Trauma Life Support (ATLS) Certification 2008 – present

Pediatric Advanced Life Support (PALS) Certification 2010 – present

ATLS Instructor 2010 – 2012

Michigan State Medical License, #4301089810 2010 – 2017

Michigan Controlled Substance Registration, #5315044507 2010 – 2017

American College of Surgeons/Society of American Gastrointestinal 2014 - present

and Endoscopic Surgeons Fundamentals of

Laparoscopic Surgery (FLS) Certificate

Indiana State Medical License, #01074108A 2014 – present

Indiana Controlled Substance Registration, #01074108B 2014 – present

DEA License, number available on request 2010 – present

American Board of Surgery, General Surgery, #059939 2015 – present

American Board of Surgery, Pediatric Surgery, #001399 2017 – present

**PROFESSIONAL ORGANIZATION MEMBERSHIPS:**

American College of Surgeons fellow 2007 – present

American Pediatric Surgical member 2010 – present

Association

American Society for Artificial resident member 2010 – 2014

Internal Organs

American Academy of Pediatrics fellow 2011 – present

American College of Surgeons member 2016 – present

Indiana Chapter

Extracorporeal Life Support member 2016 – present

Organization

Association for Academic Surgery member 2016 – present

International Pediatric member 2016 – present

Endosurgery Group

**PROFESSIONAL HONORS AND AWARDS:**

**Teaching**

Surgery Clerkship Teaching Award 2009

University of Michigan Surgery Clerkship

Golden Beeper Medical Student Teaching Award 2014

University of Michigan Medical Students

Robert Barlett Chief Resident Teaching Award 2014

University of Michigan General Surgery Residency

Junior Faculty Educator of the Year 2016 – 2017

IUSM General Surgery Residency

Excellence of Teaching of Residents and Fellows 2017 – 2018

IUSM General Surgery Residency

**Research**

Medical Scholar Research Fellowship 2005 – 2006

Vanderbilt School of Medicine Medical Scholars Program

Resident Research Competition Award 2011

Michigan Chapter of the American College of Surgeons

Young Innovator Fellowship Award 2011

American Society for Artificial Internal Organs

**Service**

Elected Administrative Chief Resident 2013 – 2014

University of Michigan General Surgery Residency

Red Shoes Award for Patient Care 2015, 2016,

Riley Hospital for Children at IUH 2017

**Other**

Traveling Fellowship Award 2014

Frederick A. Coller Society of the University of Michigan

**PROFESSIONAL DEVELOPMENT:**

Junior Faculty Professional Development Series 2016 – 2017

Department of Surgery, IUSM

* Promotion and Tenure Guidance
* How to Build and Academic Career
* Effective Clinical Teaching
* Conducting Effective Clinical Outcomes Research
* How to Build a Clinical Practice
* Leadership in Academic Medicine

Faculty Development in Simulation Nov 2016

IUSM Simulation Center

Leadership in Academic Medicine Program 2017 – 2018

Office of Faculty and Professional Development, IUSM

AAS/SUS Surgical Investigators’ Course: The Grant Writing Workshop Jan 2018

**TEACHING:**

**Courses**

*Graduate*

IUSM #93SK700 **Pediatric Surgery Clinical Elective**  2016 - Present

 **Third and Fourth Year Medical Students**

 Year round facilitating the exposure of third and fourth year medical students to perioperative and intraoperative care of general pediatric surgery patients. Students rotating on the service attend clinic, round on the wards, and participate in various laparoscopic and open operations. I also provide mid and end of rotation feedback to students. There are one to four students per rotation and ten rotations per year. Instruction length is dependent on clinical load, but averages 6 hours per week.

IUSM #93SG860 **Pediatric Surgery Research Elective**  Dec 2017

 I mentored a senior medical student through a clinical research project that culminated with a one-month research elective. I aided the student in conception, design, data collection, analysis, abstract production, presentation at a national meeting, and manuscript submission. Direct student interaction was 2 hours per week, including weekly meetings.

*Post-graduate*

Residency **Resident Rotation in Pediatric Surgery**  2016 – present

As a faculty member on this service, I have IU general surgery residents participate in all aspects of the care of my patients and provide assistance to me in outpatient surgical clinic, ward rounds, and surgical procedures in the operating room. There are 12 rotations each year (one month in length), and I directly interact with over 40 residents annually. I also serve as the director of the resident rotation. This involves monthly orientation sessions, mid and end of rotation feedback, and management of human relations issues. Direct resident teaching occurs approximately 15-20 hours per week each year, subject to clinical load.

Fellowship **Fellowship in Pediatric Surgery** 2016 – present

As a faculty member on this service, I have IU pediatric surgery fellows participate in all aspects of the care of my patients and provide assistance to me in outpatient surgical clinic, ward rounds, and surgical procedures in the operating room. Direct teaching occurs 15-20 hours per week subject to clinical load. I also began to serve as the associate program director of the fellowship in 2018. In this role, I assist with program administration on a local level and participate in national pediatric surgery fellowship program directors meetings. Technical and overall evaluations are required for appropriate supervision.

**Didactic Teaching**

Resident Education **Mock Oral Boards** 2016 – present

A four hour session annually for residents in their PGY-3, 4, and 5 years. Sessions are based on the American Board of Surgery Certifying Examination style and topics. Given to 8 residents per year.

Resident/Student **Pediatric Surgery Rotation Lectures** 2016 – present

Education

Group based discussions and lectures for residents and students on the pediatric surgery service: Congenital diaphragmatic hernia and ECMO (one hour), Fluids/electrolytes/nutrition (one hour), Radiology clinical correlation (one hour). Lectures each given 3 times each academic year to over 50 residents and students in total.

Fellow Education **Extracorporeal membrane oxygenation (ECMO)** 2016 – present

 **Fellow Lecture Series**

Group based discussions and lectures with fellows, residents, and faculty regarding ECMO related topics: Cannulation and decannulation (one hour), Congenital diaphragmatic hernia (one hour), Operating on ECMO (half hour), Mechanical complications (half hour). Lectures given once each academic year to 20 attendees on average.

Faculty Education **Teach the Teacher** Oct 2017

A one hour session educating fellow pediatric surgeons in my practice on

current safe techniques for central venous line placement. Seven attendees.

Nurse Education **ECMO Technician Training** June 2017

A four hour workshop to educate nurses who have decided to become ECMO technicians about the surgical aspects of ECMO care and managing the ECMO circuit. Ten attendees.

**Mentoring**

Natalie Drucker Resident Research Advisor 2016 – present

Josh Manghelli Resident Research Advisor 2016 – 2017

David Blitzer Resident Research Advisor 2016 – 2018

Kyle Carpenter Resident Research Advisor 2016 – present

Paul Salazar Medical Student Research Advisor 2017 – 2018

Sina Khaneki Graduate Student Advisor 2017 – 2018

Chelsea Hunter Medical Student Advisor 2017 – present

Eric Groh Resident Research and Career Advisor 2017 – present

Alicia Menchaca Resident Career Advisor 2017 – present

Joshua Brown Undergraduate Student Research Advisor 2017 – 2018

Zoe Saenz Medical Student Research Advisor 2017 – present

Zachary Holowell Medical Student Research Advisor 2017 – present

Supriya Shah Medical Student Research Advisor 2018 – present

Samantha Andersen Undergraduate Student Research Advisor 2018 – present

Michelle Kitsis Medical Student Research Advisor 2018 – present

**Teaching Administration and Curriculum Development**

ECMO circuit management simulation program 2015 – present

I have worked with the Riley EMCO Simulation Team (REST) to develop a curriculum of simulation education for ECMO technicians and clinicians who manage the ECMO circuit on a minute-to-minute basis. We have focused on development of content expert-validated checklists for emergency situations using the Delphi method to guide simulation education. We will continue to develop and evaluate a robust simulation curriculum to assist in training the ECMO team for standard and emergency situations. *I have contributed to the conception, development process, and analysis of this program.*

ECPR (emergency ECMO) simulation program 2015 – present

I have worked with REST to develop an ECPR simulation program to serve as a multidisciplinary real-time, high fidelity simulation to take a simulation mannequin from cardiac arrest through placement on ECMO support with an actual ECMO circuit. This program involves all members of ICU, surgical, and ECMO teams and can include 20 people for each simulation. I *have contributed to the conception, development process, simulations, debriefing sessions, and analysis for this program.*

ECMO Fellow Lecture Series2016 – present

As Surgical Director of ECMO, I have and continue to collaborate with the medical director to develop and deliver a curriculum of didactic ECMO related lectures and simulation sessions. There are 16 lectures over the course of the academic year at one hour each, and there are typically 20 attendees.

Pediatric Surgery Fellowship Associate Program Director 2018 – present

 As the associate program director for the Pediatric Surgery fellowship, I

help to administer and guide the development of the fellowship. I also attend national committee meetings to help mold the future of Pediatric Surgery training in the United States.

**Invited Presentations/Faculty - Teaching**

1. Music in the Operating Room: to rock or not to rock? University of Michigan Department of Surgery Grand Rounds. June 2014, Ann Arbor, MI.

2. Fetal Surgery – Past and Present. Neonatal-Surgery management conference. Riley Hospital for Children. November 2014, Indianapolis, IN.

3. Pediatric Surgery in the Primary Care Setting. Indiana chapter of the National Association of Pediatric Nurse Practitioners (NAPNAP) yearly meeting. August 2016, Carmel, IN.

4. Keys to Resident Wellness. IU Department of Surgery general surgery resident orientation. June 2017, Indianapolis, IN.

5. Intussusception. IU Department of Surgery general surgery resident education hour. March 2018, Indianapolis, IN.

6. Pediatric Surgery for the High School Student. Carmel High School pathophysiology class lecture. March 2018, Carmel, IN.

7. Emergency ECMO for operating room staff. Riley Hospital operating room staff general education hour. August 2018. Indianapolis, IN.

8. The Latest and Greatest in Congenital Diaphragmatic Hernia Care. Neonatal-Surgery management conference and Neonatology education hour. Riley Hospital for Children. January 2019, Indianapolis, IN.

**RESEARCH/CREATIVE ACTIVITY:**

**Grants/Fellowships in Research**

*Completed*

**Development of a Veno-Venous Artificial Placenta** 2010 – 2012

The Hartwell Foundation. Resident biomedical research fellowship

100% effort, $50,000 yearly

*Application submitted but not funded*

**Enhancing Precision for Fetal Diagnosis and Surgical Planning in**  2017

**Congenital Diaphragmatic Hernia: Novel Quantitative Scoring through Advanced MRI**

Edward Mallinckrodt Jr Foundation Research Grants

Co-PI with Brandon Brown, MD, Pediatric Radiologist, Indiana University School of Medicine

**Invited Presentations in Research**

*Oral Local*

1.Tissue ischemia and cell signaling biomarkers in melanoma: does ischemic time matter? Department of Surgery Grand Rounds. Vanderbilt University Medical Center. April 28, 2006, Nashville, TN.

2. Development of an Artificial Placenta: Can fetal circulation be maintained using a veno-venous extracorporeal life support model?Moses Gunn Research Conference. May 2011, University of Michigan, Ann Arbor, MI.

3. Development of an Artificial Placenta V: 70 hour veno-venous extracorporeal life support after Ventilatory Failure in Premature Lambs. Moses Gunn Research Conference. May 2012. University of Michigan, Ann Arbor, MI.

4. \*Fetal magnetic resonance imaging biomarkers predict adverse outcomes

among high-risk congenital diaphragmatic hernia patients. Riley Surgical Research Day. May 2018, Indianapolis, IN.

*Oral Regional*

1. Development of an Artificial Placenta: 24 hour veno-venous extracorporeal life support in premature lambs. Michigan Chapter of the American College of Surgeons Annual Meeting Resident Surgeons Competition. May 2011, Grand Rapids, MI.

2. Development of an Artificial Placenta: Measurement of fetal blood flow using invasive and non-invasive means. Michigan Chapter of the American College of Surgeons Annual Meeting Resident Surgeons Competition. May 2012, Traverse City, MI.

*Oral National*

1. Development of an Artificial Placenta: 24 hour veno-venous extracorporeal life support in premature lambs. American Society of Artificial Internal Organs Annual Conference. June 2011, Washington, D.C.

2. Development of an Artificial Placenta V: 70 hour veno-venous extracorporeal life support after ventilatory failure in premature lambs. American Pediatric Surgical Association Annual Meeting. May 2012, San Antonio, TX.

3. Survival to discharge in a prematurAe lamb after 3 days of VV-ECLS artificial placenta support. Extracorporeal Life Support Organization Annual Conference. September 2012, Seattle, WA.

4. Inter-rater reliability of a grading system for congenital diaphragmatic hernia defect size is fair. Academic Surgical Congress. January 2018, Jacksonville, FL**.**

*Poster*

1. Tissue ischemia does not alter immunohistochemical staining of MAPK and PI3K/AKT pathway phosphoproteins in a human melanoma xenograft model. Society of Surgical Oncology Annual Meeting. March 2006, San Diego, CA.

2. Prolonged ex-vivo warm perfusion of kidneys in a porcine model. Moses Gunn Research Conference. May 2012, University of Michigan, Ann Arbor, MI.

3. Development of an artificial placenta for support of premature infants. Academic Surgical Congress. February 2012, Las Vegas, NV.

4. Inter-rater Reliability of a Grading System for Congenital Diaphragmatic Hernia Defect

Size. Riley Surgical Research Day. May 2018, Indianapolis, IN.

**SERVICE:**

**Grants/Fellowships in Service**

*Application submitted but not funded*

**Application and Dissemination of an Evidence-based** 2017

**Surgical Wellness Bundle**

AHRQ Grant

Co-Investigator with Alyssa Farjardo, MD, Adult Colorectal Surgeon, Indiana University Department of Surgery

**University Service**

*Department*

General Surgery Residency Member 2016 – present

Review Committee

General Surgery Resident Member 2016 – present

Selection Committee

Pediatric Surgery Fellow Member 2016 – present

Selection Committee

General Surgery Resident Wellness Ombudsman 2017 – present

*I work with the department chairperson, residency program director, and resident leaders to develop and implement a wellness program for residents. I also help residents decide if their wellness and mistreatment concerns should be elevated to the program director and department chairperson.*

*School*

IUSM Wellness Initiative Member 2017

IUSM Institutional Review Board Member 2017 – present

**Professional Service**

*Local*

Specialist Education in ECMO Member 2017 – 2018

Annual Conference Planning Committee

Rapid Improvement Event Participant Dec 2018

Riley Hospital for Children

*I participated in a rapid improvement event to help increase the efficiency of operating room and supply chain interplay. This was a one week forty hour experience.*

*National*

American Society for Artificial Internal Member 2011 – 2012

Organs Young Innovators Committee

*Journal of Pediatric Surgery* Ad hoc manuscript reviewer 2015 – present

American Pediatric Surgical Member 2017 – 2018

Association Membership Committee

Extracorporeal Life Support Organization 2017 – 2018

Guidelines for Neonatal Respiratory Failure

*I worked in a two-person team to revise the online guidelines for neonatal ECMO that are posted by the national organization for ECMO care. The work was peer-reviewed before publication online.*

*Journal of Surgical Research* Ad hoc manuscript reviewer 2017 – present

*European Journal of Pediatric Surgery* Ad hoc manuscript reviewer 2018

*Reproductive Medicine, Gynaecology &* Ad hoc manuscript reviewer 2018

*Obstetrics*

**Patient Care/Clinical Service**

Riley Safety and Quality Council Member 2015 – 2018

Riley Bronchopulmonary Member 2015 – present

Dysplasia Working Group

Riley Hospital for Children at IU Health Pediatric Surgeon 2016 – present

IU Health North Hospital Pediatric Surgeon 2016 – present

Peyton Manning Children’s Hospital Pediatric Surgeon 2016 – present

at St. Vincent Hospital

Riley ECMO Chair Committee Member 2016 – present

Surgical Director of ECMO at Riley 2016 – present

*I work closely with the medical director of ECMO and the ECMO team manager to oversee a busy ECMO program, including patient care and specialist team management. I am in charge of all issues related to placement and removal of large catheters (cannulas) for ECMO care and mechanical complications that arise during ECMO support.*

Riley Cardiac Cath Lab Emergency ECMO Protocol Development 2016

*I developed a clinical care protocol for emergency ECMO activation in the cardiac cath lab at Riley in response to a situation resulting in a patient death.*

Riley emergency ECMO (ECPR) Clinical Program Development 2016 – 2017

*I lead a team to develop and implement a care pathway for emergency ECMO initiation at Riley.*

Electronic Medical Record Blood Transfusion Orders Development 2017

*I worked in a small team to development standardized order sets for blood transfusion and blood for ECMO and Riley Hospital for Children.*

Riley Spontaneous Pneumothorax Care Management Protocol Development 2017

*I worked with an expert from Pulmonology to develop a care protocol for spontaneous pneumothorax to be used by Surgery, Pulmonology, and Pediatric Intensive Care. This was reviewed by all groups and accepted into practice.*

Riley Congenital Diaphragmatic Hernia (CDH) Care Protocol Development 2017 – present

*I lead a team to develop guidelines for CDH care at Riley. This set of recommendations will be continually updated in conjunction with advances in local and national knowledge.*

Riley CDH Prenatal Consultation Guidelines Development 2017

*I led a team to develop guidelines for prenatal consultations for families expecting a baby with CDH. This involved assembling national and institutional data on patient outcomes and prenatal prognostication. I also created a generalized script for those consultations.*

Riley Maternal and Neonatal Health Member 2017 – present

Fetal Center Steering Committee

Riley Maternal and Neonatal Health Member 2017 – present

Research Steering Committee

Community North Hospital Pediatric Surgeon 2018 – present

**Invited Presentations - Service**

*Oral Local*

1. Extracorporeal life support: Experience with 2000 patients. Frederick A. Coller Society Meeting. October 2013, Ann Arbor, MI.

*Oral National*

1. Restorative proctocolectomy without diverting ileostomy in children with ulcerative colitis.

 American Pediatric Surgical Association Annual Meeting. May 2011, Palm Desert, CA.

2. Characterization of central venous catheter-associated deep venous thrombosis in

infants. American Academy of Pediatrics National Conference. October 2011, Boston,

MA.

3. Echocardiographic guidance during neonatal and pediatric ECMO cannulation is not necessary in all patients.Academic Surgical Congress. January 2018, Jacksonville, FL.

*Oral International*

1. Laparoscopic-assisted restorative proctocolectomy in children with ulcerative colitis: is diverting ileostomy necessary? International Pediatric Endosurgery Group Annual Congress. May 2011, Prague, Czech Republic.

*Poster*

1. Outcomes in patients with congenital diaphragmatic hernia and major cardiac anomalies: A 15-year experience. American Academy of Pediatrics National Conference. October 2011, Boston, MA.

2. Extracorporeal life support: Experience with 2000 patients. Extracorporeal Life Support Organization Annual Conference. September 2012, Seattle, WA.

3. Emergent VV-V ECMO for intraoperative pulmonary hemorrhage in a teenager. ECMO and the Advanced Therapies for Respiratory Failure. March 2016, Keystone, CO.

4. Echocardiographic guidance during neonatal and pediatric ECMO cannulation. Extracorporeal Life Support Organization Annual Conference. September 2017, Baltimore MD.

5. Pediatric ECMO cannula complications: An under-reported source of ECMO morbidity. Extracorporeal Life Support Organization Annual Conference. September 2018, Scottsdale, AZ.

6. Implementation of a pediatric ECPR program: Overcoming challenges and recognition of safety threats. Extracorporeal Life Support Organization Annual Conference. September 2018, Scottsdale, AZ.

**PUBLICATIONS:**

**Teaching**

*Refereed Manuscripts*

1. \*Abulebda K, Hocutt G, **Gray BW**, Wetzel EA, Medsker B, Byrne BJ. Development of

 validated checklists to evaluate clinical specialists in pediatric ECMO emergencies using delphi methods. Accepted to *ASAIO J*.

 *I assisted in project development, experimental design, conduct of research, and*

 *manuscript revision.*

**Research/Creative Activity**

*Refereed Manuscripts*

1. **Gray BW**, El-Sabbagh A, Rojas-Pena A, Kim AC, Gadepalli S, Koch KL, Capizzani TR, Bartlett RH, Mychaliska GB. Development of an Artificial Placenta IV: 24 hour veno-venous extracorporeal life support in premature lambs. *ASAIO J*. 2012 Mar;8(2):148-54.

*I directed the experimental design, conduct of experiments, data collection, data analysis, and manuscript drafting and revision.*

2. **Gray BW**, El-Sabbagh A, Zakem SJ, Koch KL, Rojas-Pena A, Owens GE, Bocks ML, Rabah R, Bartlett RH, Mychaliska GB. Development of an Artificial Placenta V: 70 hour veno-venous extracorporeal life support after ventilatory failure in premature lambs. *J Pediatr Surg*. 2013 Jan;48(1):145-53.

*I directed the experimental design, conduct of experiments, data collection, data analysis, and manuscript drafting and revision.*

3. Demos DS, Iyengar A, Bryner BS, **Gray BW**, Hoffman HR, Cornell MS, Wilkinson JE, Mazur DE, Bartlett RH, Punch JD, Rojas-Pena A. Successful porcine renal transplantation after 60 minutes of donor warm ischemia: Extracorporeal perfusion and thrombolytics. *ASAIO J.* 2015 Jul-Aug;61(4):474-9.

*I assisted with the conduct of the experiments and manuscript editing and revision.*

4. Bryner B, **Gray B**, Perkins E, Davis R, Hoffman H, Barks J, Owens GE, Bocks ML, Rojas-Pena A, Hirschl RB, Bartlett R, Mychaliska G. An extracorporeal artificial placenta supports extremely premature lambs for one week. *J Pediatr Surg*. 2015 Jan;50(1):44-9.

*I assisted with experimental design and conduct of experiments, and I assisted with manuscript editing and revision.*

5. \*El-Sabbagh AM, **Gray BW**, Shaffer AW, Bryner BS, Church JT, McLeod JS, Perkins EM, Zakem S, Shellhaas RA, Barks JD, Rojas-Pena A, Bartlett RH, Mychaliska GB. Cerebral oxygenation of premature lambs supported by an artificial placenta. *ASAIO*. Published online Sept 20, 2017. 10.1097/MAT.0000000000000676 (Epub ahead of print)

*I directed the experimental design, conduct of experiments, data collection and analysis, and I assisted with manuscript drafting and revision.*

6. \*Hunter CE, Saenz AM, Nunez D, Timsina L, **Gray BW**. Inter and Intrarater

reliability of a grading system for congenital diaphragmatic hernia defect size. *J Surg Res.* 2019 Jan;233:82-87.

 *I directed all aspects of this project and served as a mentor to Dr. Hunter, who was a medical student at the time.*

*Refereed Invited Review*

1. **Brian W. Gray**, Andrew W. Shaffer, and George B. Mychaliska. Advances in neonatal

extracorporeal support: the role of ECMO and the artificial placenta. *Clinics in Perinatology*. 2012 Jun;39(2):311-29.

 *I directed the data review and manuscript drafting and revision.*

**Service**

*Refereed Manuscripts*

1. Diaz JJ Jr, **Gray BW**, Dobson JM, Grogan EL, May AK, Miller R, Guy J, O’Neill P, Morris

JA Jr. Repair of giant abdominal hernias: does the type of prosthesismatter? *Am Surg*. 2004 May; 70(5):396-401; discussion 401-2.

 *I assisted with study design, data collection, data analysis, and manuscript drafting, and manuscript revision.*

2. **Gray BW**, Drongowski RA, Hirschl RB, Geiger JD. Restorative proctocolectomy without diverting ileostomy in children with ulcerative colitis. *J Pediatr Surg*. 2012 Jan;47(1):204-8.

*I assisted with study design and collected all data. I assisted with data analysis and directed manuscript drafting and revision.*

3. **Gray BW**, Gonzalez R, Warrier KS, Stephens LA, Drongowski RA, Pipe SW,

Mychaliska GB. Characterization of central venous catheter-associated deep venous thrombosis in infants. *J Pediatr Surg*. 2012 Jun;47(6):1159-66.

 *I assisted with study design, data collection, and data analysis, and I directed manuscript drafting and revision.*

4. **Gray BW**, Tochman SW, Drongowski RA, Fifer CG, Mychaliska GB, Kunisaki SM.

Contemporary outcomes in infants with major congenital heart disease and Bochdalek diaphragmatic hernia. *Ann Thorac Surg*. 2013 Mar;95(3):929-34.

 *I assisted with study design, data collection, and data analysis, and I directed manuscript drafting and revision.*

5. **Gray BW**, Haft JW, Hirsch JC, Annich GM, Hirschl RB, Bartlett RH. Extracorporeal Life

Support: Experience with 2000 Patients. *ASAIO*. 2015 Jan-Feb;61(1):2-7.

*I collected data and assisted with data collection and data analysis. I directed manuscript drafting and revision.*

6. \***†**Drucker NA, **Gray BW**, Askegard-Giesmann J. Virilization and abdominal mass in a newborn female: A care report*. Journal of Pediatric Surgery Case Reports*. 2017, doi: 10.1016/j.epsc.2017.05.006.

 *I mentored a resident with review of the literature and manuscript drafting and revision.*

7. \*Wang SK, Lemmon GW, Drucker, NA, Motaganahalli RL, Dalsing MC, Gutwein

AR, **Gray BW**, Murphy MP. Results of nonoperative management of acute limb ischemia in infants. *J Vasc Surg*. 2017 Dec 7. pii: S0741-5214(17)32388-1.

 *I assisted with manuscript review and editing.*

8. \*Gunderman PFR, Shea LAG, **Gray BW**, Brown BP. Fetal MRI in management of

complicated meconium ileus: Prenatal and surgical imaging. *Prenat Diagn*. 2018 Jun 7. doi: 10.1002/pd.5296.

 *I assisted with manuscript review and editing.*

9. \*Vandewalle RJ, Easton JC, Burns RC, **Gray BW**, Rescorla FJ. Review of early

postoperative metrics for children undergoing resection of congenital pulmonary airway malformations and report of pleuropulmonary blastoma at a single institution. *Eur J Pediatr Surg*. 2018 Jun 19. doi: 10.1055/s-0038-1661333.

 *I assisted with project design, data analysis, manuscript review, and editing.*

10. \*Wang KS, Drucker NA, Raymond JL, Rouse TM, Fajardo A, Lemmon GW, Dalsing MC,

**Gray BW**. Long-term outcomes after pediatric peripheral revascularization secondary to trauma at an urban level 1 center. *J Vasc Surg*. 2018 Oct 3. Pii: S0741-5214(18)31806-8.

*I oversaw project design and assisted with data analysis, manuscript review, and editing.*

11. \* Coleman PW, Marine MB, Weida JN, **Gray BW**, Billmire DF, Brown BP. Fetal MRI in

 the identification of a fetal ventral wall defect spectrum. *AJP Rep*. 2018 Oct;8(4):e264- e276.

 *I assisted with data analysis, manuscript review, and editing.*

12. \*Salazar PA, Blitzer D, Dolejs SC, Parent JJ, **Gray BW**. Echocardiographic

guidance during neonatal and pediatric jugular cannulation for ECMO. *J Surg Res.* 2018 Dec;232:517-523.

 *I directed all aspects of this project and served as a mentor to Dr. Salazar, who was a medical student at the time.*

13. \*Drucker NA, Wang KS, Markel TA, Landman MP, **Gray BW**. Practice patterns in

ECMO cannulation: A survey of the American Pediatric Surgical Association. Submitted to *J Ped Surg*.

 *I directed project design and assisted with data analysis, manuscript review, and editing.*

*Refereed Invited Review*

1. \***Gray BW**, Rintoul N. Extracorporeal Life Support Organization: Guidelines for Neonatal

Respiratory Failure. Published online December 2017. https://www.elso.org/Portals/0/ELSOGuidelinesNeonatalRespiratoryFailurev1\_4.pdf

 *I worked with Dr. Rintoul to revise and update the online version of the ELSO neonatal respiratory guidelines. This document was reviewed by the ELSO guidelines steering committee prior to publishing.*

*Refereed Book Chapter*

1. **Brian W. Gray,** Ana Ruzic, and George B. Mychaliska (2011). Gastrostomy in Pediatric

Patients, *Gastrostomy,* Pavel Kohout (Ed.), ISBN: 978-953-307-365-1, InTech.

 *I worked in a small team to draft and revise the chapter.*

*2. \**Belchos J, **Gray BW**, Landman MP. Gastric Outlet Obstruction. *Pediatric Surgery*

*NaT.*

 *I assisted with chapter revision.*

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|  (Date) |  (Signature of Candidate) |