Surgery Research Conference

Cardiothoracic Surgery Research Update
April 11th, 2018
Research Highlights
Microbial Dysbiosis and Gene Expression May Explain Disparate Health Outcomes in Ethnic Minorities

Panna Codner, MD, Division of Trauma & Critical Care
Lucas Torres, PhD (MU)
Jennifer Knight, MD

MYH6 variant effect on cardiomyocyte biomechanics and patient outcomes in Hypoplastic Left Heart Syndrome

Aoy Mitchell, PhD, Division of Pediatric Congenital Cardiac Surgery

Total Cell-Free Deoxyribonucleic Acid (total cf-DNA) as a predictor of severity of illness and outcome following pediatric cardiac surgery

Michael Mitchell, MD, Division of Pediatric Congenital Cardiac Surgery
John (Jake) Scott, MD
## MCW Office of Postdoctoral Education
### Postdoc Travel Award Winners

<table>
<thead>
<tr>
<th>Postdoc</th>
<th>PI/Mentor</th>
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<td>Guillermo Urrutia, PhD <em>(Division of Research)</em></td>
<td>Gwen Lomberk, PhD <em>(Division of Research)</em></td>
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MCW Research Spotlight

Melissa C. Helm, MSN, RN
Research Nurse II
Division of General Surgery

“Perioperative Complications Increase the Risk of Venous Thromboembolism Following Bariatric Surgery”


Morbidly obese patients are at increased risk of venous thromboembolism (VTE) following surgery. This study explored the impact of a perioperative complication on the risk of VTE after bariatric surgery using American College of Surgeons National Surgical Quality Improvement Program datasets (n = 59,424). We found the postoperative incidence of VTE was 0.5%. Approximately 80% of VTE events occurred after discharge. A major complication occurred prior to VTE in 22.6% of patients. Unadjusted thirty-day mortality increased 13.89-fold following VTE (p < 0.0001). Ultimately, patients should be closely monitored as postoperative complications significantly increase the risk of VTE following bariatric surgery.
Advancing a Healthier Wisconsin (AHW) Endowment presents

Conversations with Scientists Series,
Precision Medicine: Own your own genome.

April 11th  Precision Medicine 101:  What you need to know

April 18th  The Diagnostic Odyssey:  Why we need research in the medical practice

April 25th  Your DNA:  A stranger no more

May 2nd  Bugs, drugs, and Grandma

Kerrigan Auditorium, MEB
6:30-8:30 pm
Medical College of Wisconsin, Department of Surgery
We Care Fund for Medical Innovation and Research
2018 Faculty Seed Grants

Eligibility

$150,000 Grant
• Full time faculty member in the Department of Surgery
• Interdisciplinary collaboration with another division, department or center at MCW

$50,000 Grant
• Assistant & Associate Professors

Overview

The mission of the We Care Fund is to use contributions made available by the philanthropic community to support Department of Surgery faculty demonstrate the importance of innovation and discovery to advance science and clinical care of patients.

Key Dates

RFA: 2/12/18
Budget Review: TODAY!!!!
eBridge application to GCO: 4/18/18
Emailed We Care: 4/25/18
Scientific Committee Review: 6/21/18
Award Notifications: 7/16/18
Anticipated Start Date: 9/1/18

Questions?

Contact Krissa Packard at 955-1861, kpackard@mcw.edu
MCW Funding Opportunity

Request for Proposals

Therapeutics Accelerator Program

Project funding: $25,000 to $50,000

A one page proposal is all it takes to initiate the process

For information Contact:

Dr. Ranjit Verma,
ryverma@mcw.edu
(414) 955-5743

Dr. John Imig,
jdimig@mcw.edu
(414) 955-4834

Due Date:
May 15, 2018
Noon
Publications

**Cardiothoracic Surgery**

“Comparison of Outcomes and Costs Associated With Aspirin+/ Clopidogrel After Coronary Artery Bypass Grafting.” *American Journal of Cardiology* (Hossein G. Almassi)

**Pediatric Surgery**

“Role of intestinal Hsp70 in barrier maintenance: contribution of milk to the induction of Hsp70.2.” *Pediatric Surgery International* (David M. Gourlay)


“Nogo-B receptor promotes epithelial-mesenchymal transition in non-small cell lung cancer cells through the Ras/ERK/Snail1 pathway.” *Cancer Letters* (Xiaoyu Qi & Qing Robert Miao)

“Medical and Surgical Management of Pediatric Ulcerative Colitis.” *Medical and Surgical Management of Pediatric Ulcerative Colitis* (Thomas T. Sato) [Review]

“Pediatric and Congenital Colorectal Diseases in the Adult Patient.” *Clinics in Colon & Rectal Surgery* (David M. Gourlay)

“Healthcare Utilization and Comorbidities Associated with Anorectal Malformations in the United States.” *Journal of Pediatrics* (Casey Calkins)

**Congenital Heart Surgery**


**General Surgery**


“Improved immediate postoperative pain following laparoscopic inguinal herniorrhaphy using self-adhering mesh.” *Surgical Endoscopy* (Daniel G. Davila, Melissa C. Helm, Irene S. Pourladian, Matthew J. Frelich, Andrew S. Kastenmeier, Jon C. Gould & Matthew I. Goldblatt)

**Vascular Surgery**


**Colorectal Surgery**

“Elevated Venous Thromboembolism Risk Following Colectomy for IBD Is Equal to Those for Colorectal Cancer for Ninety Days After Surgery.” *Diseases of the Colon & Rectum* (Fadwa Ali, Carrie Y. Peterson, Kirk A. Ludwig & Timothy J. Ridolfi)
Survivorship - Part 1: April 14, 2018 at 4 pm

A discussion with survivors of breast and pancreatic cancer. Also featuring Mr. Baseball, Bob Uecker!
Good Luck Dr. Gamblin & Gee!

122nd Boston Marathon
Monday, April 16th, 2018
The Division of Research would like to announce:

Cardiothoracic Surgery Research Update

Paul Pearson, MD, PhD,
Professor and Division Chief,
Cardiothoracic Surgery
Cardiothoracic Surgery Research Update

Division of Cardiothoracic Surgery Research Update
Paul Pearson, MD, PhD
April 11, 2018
Cardiothoracic Surgery Research Nurse

Barb Alivo, RN, CCRC
Cardiothoracic Surgery Faculty
“SynCardia 70cc Total Artificial Heart (TAH-t) for Destination Therapy Study”

- Industry Sponsored – SynCardia Systems, LLC
- Received IRB/OCRICC Approval 2/16/18
- PI - David Joyce, MD
SynCardia Total Artificial Heart

Approved as a bridge to transplant by the FDA in 2004, the 70cc Total Artificial Heart is currently undergoing an IDE clinical trial for use as destination therapy in adult patients who are not eligible for heart transplantation.
Study Arms

• **Primary Arm:** 19 adult patients
• Will evaluate the safety and probable benefit of the 70cc TAH for patients not eligible for transplant to support a HDE application
• **Secondary Arm:** Up to 19 patients who do not meet all of the Primary Arm patient enrollment criteria
Primary Arm Patient Enrollment Criteria

• Life-threatening, irreversible biventricular heart failure
• Not eligible for donor heart transplant
• On optimal medical management and failing to respond or failing DT ventricular assist device (VAD) therapy
• Ambulatory without assistance
• Not on ECMO support or diagnosed with renal dysfunction, cardiac cachexia or cirrhosis
• Between 19 and 75 years old
• BSA ≥ 1.7m² or with T10 measurement ≥ 10 cm
• Patients who do not meet all the above criteria may still be able to participate in the clinical trial via enrollment in the Secondary Arm.
“SynCardia 50cc Temporary Total Artificial Heart (TAH-t) as a Bridge to Transplant (BTT)”

• Industry Sponsored – SynCardia Systems, LLC
• PI - David Joyce, MD
• Status – IRB Review
Study Arms
(Our site is enrolling in the Adult Arm only)

• **Pediatric Primary Arm:** 24 pediatric patients (10-18 years old)
  Will evaluate the safety and probable benefit of the 50cc TAH for transplant-eligible pediatric patients to support a Humanitarian Device Exemption (HDE) application

• **Adult Primary Arm:** 24 adult patients (19-75 years old)
  Will evaluate the safety and efficacy of the 50cc TAH for transplant-eligible adult patients to support a Premarket Approval (PMA) application

• **Secondary Arm:**
  Up to 24 adult and pediatric patients who do not meet all of the Primary Arm patient enrollment criteria
Primary Arm Patient Enrollment Criteria

- At risk of imminent death from biventricular heart failure
- At time of implant, age 10-18 years (pediatric) or 19-75 years (adults)
- Eligible for donor heart transplant
- Have two functional atrioventricular (A-V) valves
- On ECMO support ≤ 3 days and not dialysis-dependent
- Have a BSA ≤ 1.85m² with adequate T10 measurement or adequate room in the chest as determined by 3D imaging assessment or by other standard clinical assessments
- Patients who do not meet all the above criteria may still be able to participate in the clinical trial via enrollment in the Secondary Arm.
“A Prospective, Randomized, Controlled Multicenter Clinical Study to Evaluate the Safety and Effectiveness of the Spiration Valve System (SVS) for the Single-Lobe Treatment of Severe Emphysema”

- Industry Sponsored – Spiration, Inc.
- Closed to enrollment
- Sponsor submitted PMA to FDA in January
- PI - David Johnstone, MD
Spiration Valve System Valve

The SVS Valve is a small, umbrella-shaped, one-way valve that is placed inside the airways of one lung. It is used to redirect air from less healthy to the more healthy parts of the lung. This helps to reduce over-inflation and may improve overall lung function and quality of life for people living with emphysema.
Hydrogen Sulfide Levels in Cardiothoracic Surgery

- Investigator-Initiated Clinical Study
- Status – Ongoing
- PI - Julie Freed, MD
- Co-I- Paul Pearson, MD
Reducing Contrast Dose in TAVR Patient
A Retrospective Study

• Investigator-Initiated Clinical Study
• Status – Ongoing
• PI - Dhiraj Baruah, MD
• Co-I- Paul Pearson, MD
“Identification of Microbiota in Cardiac Tissue”

• Investigator-Initiated Clinical Study
• Status – Application for We Care Fund for Medical Innovation and Research ($150,000 Grant) in preparation
• PI - John Baker, PhD and Co-PI - Paul Pearson, MD
“Quantification of Cell Free DNA to Determine Rejection Following Lung Transplantation”

- Industry Sponsored – TAI Diagnostics
- Open to enrollment
- Study PI - Michael Mitchell, MD
- Site PI - George Haasler, MD
- Co-I - William Ragalie, MD (Surgery Resident)
Biospecimen Collection
(Blood, Data and Biopsy Slides)

• Study population will include subjects over 18 years of age who have undergone lung transplant or who are “listed or in the process of being listed” to undergo lung transplant.

• Blood specimen collection:
  • Days 1, 4, 7 and 28 after transplant
  • 24 hours prior to surveillance bronchoscopy
  • 24 hours prior to onset of treatment for rejection, 6-24 hours from starting treatment for rejection, Days 7 and 28 from starting treatment for rejection
  • Upon Hospital readmission and Day of Discharge if treated for an infection

• Copies of Biopsy Slides and Subject Data is collected.
The use of the HUD IVB Valve System has been approved by the FDA for treatment of prolonged air leak of the lung following lobectomy, segmentectomy, or lung volume reduction surgery.

• Sponsor – Spiration Inc.
• PI – David Johnstone, MD
Chart Review Studies

Short and Long-Term Outcomes in Mechanical Circulatory Support (MCS) Devices (D. Joyce)

Modified Del Nido Cardioplegia (C. Rokkas)

Comparison of Traditional Transhiatal Esophagectomy to Transhiatal Esophagectomy with Transcervical Endoscopic Esophageal Mobilization (D. Johnstone)

Outcomes in Solid Organ Transplantation (D. Joyce)
Visit Our Division of Research Website!
https://www.mcw.edu/Surgery-Research.htm

Welcome to the Division of Research in the Department of Surgery at the Medical College of Wisconsin.

(pictured left to right) Lizzy Schneidler, Dr. Gwen Lomberk, Krissa Packard

Mission Statement
To advance the careers of research-intensive faculty, enhance the departmental culture of academic achievement, foster interdisciplinary and inter-institutional collaborations, and facilitate the resident research program.

Core Responsibilities
- Faculty development
- Advocacy for research infrastructure: development and expansion
- Enhance extramural funding
- Maximize the quality and quantity of peer-reviewed publications
- Optimize resident research experience: appropriate mentor/mentee resources, responsibilities, accountabilities and
Surgery Research Conferences

- 4/11/2018 Cardiothoracic Surgery Research Update and Intro to REDCap
- 3/14/2018 Colorectal Surgery Research Update
- 2/14/2018 Pediatric Surgery Research Update
- 1/10/2018 Surgical Oncology Research Update
- 12/13/2017 How to get the most out of i2b2 and MCW's Tissue Bank
- 11/8/2017 Navigating Research Funding Opportunities
- 10/11/2017 What can GSPMC do for your Research in Surgery?
- 9/13/2017 Introduction to the Division of Research
https://www.mcw.edu/Surgery-Research.htm
CME and Funding Opportunities

Deadline and Event Calendars for 2018

- January (PDF)
- February (PDF)
- March (PDF)
- April (PDF)
- May (PDF)
Research Residents

Chad Barnes, MD
My research is primarily focused on the clinical outcomes of patients with pancreatic cancer treated with neoadjuvant therapy and surgery at the Medical College of Wisconsin. Using our institutional pancreatic cancer database, I have examined the patterns of first disease recurrence following neoadjuvant therapy and surgery, correlated tumor characteristics on pre- and post-neoadjuvant therapy FDG-PET imaging with disease recurrence and survival outcomes, and then evaluated the survival benefit of adjuvant (postoperative) therapy following neoadjuvant (preoperative) therapy and surgery.

Rebecca Marcus, MD
My research over the last 3 years has focused on primary liver cancers, primarily cholangiocarcinoma. As a T32-funded research fellow at M D Anderson Cancer Center, I’ve been working in a basic science lab on a mouse model for this disease. During the last year, I have also been performing clinical research that focuses on improving care and outcomes for oncologic patients. Finally, in collaboration with my coworkers back at MCW, I have worked on projects looking at Next Generation Sequencing panels and their utility in personalized medicine.

Jacqueline Blank, MD
I have been fortunate to do research with the Division of Colorectal Surgery for the past two years. I have had the opportunity to do a wide variety of projects, most notably working on 7T MR imaging of rectal cancer, as well as performing a clinical trial that examines the use of a percutaneous nerve field stimulator for non-pharmacologic treatment of postoperative pain. I have had the opportunity to do these projects at both Froedtert and the Zablocki VAMC. I have also enjoyed helping medical students conduct research in the division.

Lindsey Clark, MD
My research this year focused on quality of care among surgical patients. I have research projects investigating various topics including the timing of readmissions, the relationship of malnutrition and anemia to postoperative outcomes in patients undergoing pararectal hernia repair, and the incidence and impact of outpatient chemotheraphy for venous thromboembolism in bariatric surgery patients. I have also spent time serving on multiple inpatient committees focused on quality of care and patient safety.

Kelly Boyle, MD
I am working with the Division of Trauma and Acute Care Surgery. My research focuses on the management and outcomes of patients with traumatic injuries and those who require emergency general surgery services. I have various projects investigating a wide range of topics, including penetrating torso trauma, extremity vascular trauma, and adhesive small bowel obstructions. My main focus explores thoracic trauma, and we are conducting a multi-institutional trial to determine the efficacy of thoracic irrigation in preventing secondary interventions for retained hemothorax. I also have an interest in resident education and am engaged in a study investigating ultrasound skill retention in junior residents.
Biostatistical Support Process

- Complete Department form **first** for Tracking ID assignment
- Include tracking ID # in Biostats Consulting online request form
- Share biostats estimate when received
- Projects <$3,000 will be approved
- Average project cost: $1,800
- Continue to bring questions and concerns to Division of Research
Research Resources

Getting Started in Research

Surgery Biostatistical Support

Surgery Biostatistical Support Request Form (PDF)

Training

Find Funding Opportunities

Submitting a Grant

Human Subject Research

Campus Core Resources and Partnerships

Research at our Affiliates

Submit form and email Dr. Gwen Lombek and Krissa Packard with estimate (below) when received.