

Billiar Lab News

University of Pittsburgh

Spring 2016

Volume 27

Department of Surgery Research Day

Call for Abstracts

Who?

Any surgical investigator in training, including fellows, residents and medical students. Abstracts will be selected for presentation at the 2016 Department of Surgery Research Day, to be held on Wednesday, May 11, 2016. Work may be clinical or basic science and may cover any area of surgical research. Individuals may submit more than one abstract, but each author may only have one oral presentation. Awards will be given for top three (3) oral and top three (3) poster presentations.

What?

250-maximum word abstract that presents a concise summary of research completed and in progress. This research may have been presented previously at a local or national meeting, but it may not have been previously published or in press. The title must be brief and informative. The body of abstract must include **Introduction, Methods, Results** and **Conclusions** as

separate paragraphs. A one-page table may be submitted; the table does not count toward the 250 maximum word count. No figures are to be included.

How?

Submission of abstracts is by email only. Please note that the name of the person submitting the abstract, the PI supporting the work, as well as the Departmental laboratory they are from, must be noted on the abstract. Please attach the abstract as a word document and send it to shoemakergl@upmc.edu.

When?

Deadline for abstract submission is 5 pm on Monday, April 01, 2016. Decisions regarding accepted oral and poster presentations will be circulated by mid-April.

Questions?

Please refer questions to Gail Shoemaker at 412-647-1749 or shoemakergl@upmc.edu

Abstract preparation suggestions

Important Dates

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Simmons Research

Tu 8:00am & Th 8:15am

F1275 PUH

- Mar 29 Luka Pocivavsek
- Mar 31 Ryan McEnaney

Billiar Lab Meeting

Wed 12:00pm F1275 PUH

- Mar 30 Zhao Lei

Immunology Seminar Series

Thurs 12:00-1:00pm

Scaife Hall, Aud 5

- April 7

Journal Club

Tu 11:30-1pm F1275 PUH

- April 5 Minjie Lin
“[NAFLD causes selective CD4+ T lymphocyte loss and promotes hepatocarcinogenesis](#)”

*For a full list of events, please go to the General and Vascular Surgery Labs website's **Events page**.*

Faculty Highlight



Matthew Neal



I am an Assistant Professor of Surgery and Critical Care Medicine and am an Investigator in the Department of Surgery labs. I did my undergraduate training at Georgetown University with a major in Biology (focus in evolutionary biology) and a minor in Spanish. I then moved to Pittsburgh and completed medical school, residency, and fellowship at the University. During my training, I completed a three year research post-doctoral fellowship in innate immunity and inflammation with David Hackam, MD, PhD. I have been part of the Billiar lab since early 2014.

My laboratory focuses on understanding the mechanisms of hemostasis and coagulation following trauma and hemorrhagic shock with a specific interest in the impact of sterile inflammation on platelet function. Uncontrolled hemorrhage is the leading cause of preventable death in trauma, which accounts for nearly 10% of annual mortality worldwide. Over 25% of severely injured patients will present with impaired coagulation which increases morbidity and mortality. Although it is well known that trauma results in a profound inflammatory response driven by innate immune activation, the mechanisms of this acute coagulopathy of trauma are poorly understood. Our lab has recently discovered a potential link between sterile inflammation and impaired coagulation through expression of TLR4 and HMGB1 on platelets. We are testing multiple drug targets for regulating HMGB1 release and attenuating platelet dysfunction following trauma. In addition to HMGB1, a number of other

Title Provide clear and accurate information for finding, indexing, and scanning

Abstract Summarize all key information

Introduction *Why did you start?*

- Background knowledge
- Describe the nature and severity of the specific problem
- Describe the specific aim
- What is the hypothesis?

Methods *What did you do?*

- Ethical issues (IRB, etc.)
- Describe the intervention and its component parts in sufficient detail that others could reproduce it (describe instruments and procedures)
- Clinical: Identify study design (observational, experimental, qualitative, quantitative)
- Provide details of qualitative and quantitative (statistical) methods used to draw inferences from the data
- Statistical analysis and significance is emphasized.

Results *What did you find?*

- Describe the most important points learned from the data
- Clinical: Present data on changes observed in measures of patient outcome (for example,

danger signaling molecules are under investigation. We also have an interest in targeted platelet therapy and have begun to devise novel platelet specific nanotechnology for drug delivery. We have a multi-disciplinary collaboration combining international experts in platelet biology, coagulopathy, cellular imaging, nanotechnology, biomedical engineering, and innate immune signaling. I also have extensive experience in transfusion outcomes and coagulopathy clinical research. I serve as a Co-Investigator for a multicenter, randomized clinical trial funded by the Department of Defense involving the use of tranexamic acid in trauma patients, and I am the PI for a prospective, observational cohort trial centered on monitoring and reversal of novel oral anticoagulants. I am a surgeon-scientist with a clinical practice consisting of trauma, emergency general surgery, and surgical critical care as well as a translational research interest in coagulopathy in the setting of injury and transfusion.

I have been married for 10 years to my wife, Donielle, and we have two beautiful children, Cameron (6) and Ellie (4 months). We presently live in the South Hills but will be moving to Sewickley in June. I am an avid Pittsburgh sports fan, and I enjoy playing baseball and skiing in my spare time. I also enjoy training for endurance events and will participate in my 4th Tough Mudder event this fall.

morbidity, mortality, function, patient/staff satisfaction, service utilization, cost, care disparities)

- Clinical: Consider benefits, harms, unexpected results, problems, failures

Conclusion/Discussion *What do the findings mean?*

- Highlight the work's particular strengths

Lab Updates Conflict of Interest Deadline

On February 10, 2016, the Provost and Interim Executive Vice Chancellor issued their annual memo reminding the University community that all faculty members, designated administrators, and other individuals as identified by their responsibility centers

must complete University COI disclosures no later than April 15, 2016. The memo can be viewed on the COI website [here](#).

The University [COI website](#) provides [instructions for filing a University of Pittsburgh COI disclosure form](#) and for using the [Joint Pitt/UPMC COI disclosure form available through My HUB](#), as well as all the [forms](#) (see left menu) departments will need to complete the filing process. The website also provides information regarding [supervisors' responsibilities](#) during the annual COI filing season.

On Wednesday, March 30, 2016, the COI Office will be giving an FSDP workshop on *Conflict of Interest Management*, and on Tuesday, April 26, 2016, on *Outside Consulting*. Please check the [FSDP site](#) in early March for more information and to register.

Those with dual appointments at the University and UPMC/UPP should complete the **Joint Pitt/UPMC COI disclosure form**, which generates University of Pittsburgh Faculty/Researcher (PHS or

“regular”) and Designated Administrator/Staff forms. **Those using the Joint Pitt/UPMC COI disclosure form will need their HSConnect username/email and password to complete the transfer of data to the Pitt database.** This is the same username and password used for OSIRIS, ARO, ISER and several other applications. Although their data will not be lost, they will have to go back and resend the information to the University if they are not able to log in to HSConnect when prompted to do so upon completion of the questions.

Individuals can reset their password [online](#) or by calling the iTarget Team Help Desk at **412-648-2222**. If a user is unsure which email address is associated with his/her HSConnect account, he/she should call the iTarget Team Help Desk. PLEASE DO NOT CREATE ADDITIONAL ACCOUNTS.

For *technical* assistance regarding the **University’s Superform system**, contact the **iTarget Help Desk** through their [web form](#) or by phone at **412-648-2222**.

The [University of Pittsburgh COI Office](#) will gladly assist users in understanding any of the University’s COI disclosure requirements.

For assistance with the **UPMC COI system**, please first check the [My HUB Frequently Asked Questions](#) and then contact the **ISD Help Desk at 412-647-HELP (4357)**. For more information regarding UPMC policies and requirements, please see the [Conflicts of Interest page in InfoNet](#). Questions should be directed to your [Compliance Officer](#) or your department administrator, or email conflicts@upmc.edu.

In order for the department to meet the deadline provided by the University, we are asking that the COI be completed and given to Kathy by March 31, 2016.

Mouse Transfer Request Deadline Change

In order to keep a more accurate mouse inventory the Billiar lab has changed the day of the week that inventory is performed to Thursdays. Since transfers are marked during inventory, this means that transfers are going to be processed one day later.

To reflect this change the deadline for request submissions is now **Thursdays before 8am.**

Please continue to use the [online request form](#) that can be accessed at the bottom of [departmental website](#) for submitting requests.

Each week after transfers have been marked and the process has been initiated, a table will be placed on a clipboard outside Deb William’s office showing the updated status of all pending and in process transfers. As always, you are unable to use any transferring animals until final approval and movement has been completed by DLAR – this is especially important with the new CAMs system.

If you have any questions, please don't hesitate to ask Alicia or Danielle.



CAMs Update

CAMs has been in use since February 1st, 2016. The implementation has been relatively smooth. If you have any questions about CAMs, please contact:

- Animal Orders – anorder@pitt.edu
- Billing and Setup – dlarbill@pitt.edu
- Cage cards, Census Mgmt, Transfers – Animal Housing Facility Supervisor (EBST9): MattMihalik@pitt.edu and/or bdb36@pitt.edu
- Vet Services/Animal Health – dbolette@pitt.edu OR dheflin@pitt.edu
- DLAR Administration – dlar@pitt.edu

The Billiar lab has created an [SOP](#) for what to do with the barcoded CAMS cage cards since these cannot be removed

from the facility. This can be found on the [departmental website](#). If there is any confusion about this policy,

please see Alicia, Danielle, or Deb.

Chancellor's Message on the State Budget

March 2, 2016

Dear Pitt Community:

I am writing from Harrisburg, where I'm participating in General Assembly budget hearings and a joint press conference alongside the presidents of the other state-related universities—Penn State, Lincoln and Temple. The focus of our conversations today is the lack of—and need for—predictable state funding for our schools.

Just a few weeks ago, we had bicameral, bipartisan support for multiyear funding increases for Pennsylvania's state-related universities. And today, we have watched this consensus morph into a dangerous game of political brinksmanship, with the funding of state-related universities becoming a key bargaining chip. Each day without action in Harrisburg, we face the growing possibility of

receiving no state funding. This amounts to a \$147 million budget deficit for the current year. And while we are cutting costs where we can, it is impossible to try and cut ourselves out of this multimillion dollar hole. For the past month, I have been working to drive this issue into the limelight. To start, I co-authored an op-ed with the presidents of the three state-related universities. This article,

Staff Highlight



Kimberly Ferrero

Hailing from deep South (Miami-born-and-raised), I attended the University of Florida for both my undergraduate ('05 Evolutionary Biology) and graduate ('08 Entomology) degrees. I moved to Pittsburgh after graduation, and worked for the Allegheny County Health Department until joining the University of Pittsburgh in 2012. Currently, I'm a researcher in the wonderful labs of David Geller and Allan Tsung. I run the Liver Cancer Center's human tissue and serum bank, isolate human hepatocytes from patients, maintain a couple of transgenic mouse colonies for our research, and help our residents and PIs with projects. Currently, my projects include working with one of our clinical psychologists to quantify HMGB1 levels in patients, unifying multiple patient biomarker studies into one large database, and helping one of our residents examine the role of XAF1 in liver damage following transplant.

Continued on Page 6

My husband is a Ph.D. student in organic chemistry and we have a three-year-old daughter who is already showing an aptitude for the sciences (including using her own microscope!). I enjoy hiking with my family and our dog, volunteering at CMNH, traveling to new countries, shamisen (a three-stringed Japanese instrument), and drinking a lot (a lot!!!) of coffee. I'm also taking classes in the department of immunology's Ph.D. program, which keeps me pretty busy outside of the lab. My biggest passions, however, are human rights issues and global access to medical care. I am a proud field partner with Médecins Sans Frontières (Doctors Without Borders) and the Human Rights Campaign, and support the work of such organizations as the United Nations High Commissioner for Refugees (UNHCR), the United Nations Children's Emergency Fund (UNICEF), and Amnesty International. A few quirky facts about me: I've been wearing kimono for almost a decade (and own more kimono than "western" clothes); I have six or seven different types of coffee in my house (my astrological sign is probably the Starbucks logo), I'm ambidextrous, and my lab bench is so organized that even my reagents are alphabetized! ☺



which appeared in newspapers throughout the commonwealth, called attention to the fact that we were now an unprecedented

eight months into the current budget cycle with no state funding in sight. Last week, I highlighted this issue at our Board of Trustees

meeting. I discussed how over the long term—in the absence of a firm and standing commitment from the state—our students and their families would be forced assume this financial burden. Student debt is already high due to a decade of anemic state funding. We are committed to doing everything we can to keep an excellent education accessible, but our options are limited in the face of no funding or further reductions. We will continue advancing these advocacy efforts, including Pitt Day in Harrisburg on March 22. This is a day when our most important allies—students, faculty, staff and alumni—travel to Harrisburg to speak directly with our state lawmakers and tell them of Pitt's immeasurable value to the commonwealth. But we need your help. Please visit WithPitt.com to get involved and help Pitt tell Harrisburg how important our state funding is to us. There you'll find talking points, sample letters, an easy way to contact state leaders, and other resources to help Pitt make its case for state funding. Let's show Harrisburg that With Pitt, Pennsylvania Wins. Sincerely,
Patrick Gallagher

Messages from DLAR and IACUC

EBST Room 930

Helicobacter Status Update

During the first week of February DLAR collected rack level sentinels from room 930 and room level sentinels from the other rooms in the

Helicobacter/Norovirus free corridor. Additionally, out of an abundance of caution we collected pooled fecal samples from every rodent cage in room 930.

All results have returned negative for a Helicobacter and norovirus PCR panel.

Additional rack level sentinel samples will be collected in room 930 next week. Samples will also be collected in February as part of the first quarter sentinel testing.

Facility-Based Veterinary Service Email Accounts

The DLAR has created facility-based veterinary

services email accounts in an effort to enhance service to our research community, and are asking the research community to utilize the facility email accounts for general animal health related questions, research support, etc. Animal specific health related issues are managed through CAMS. Facility-based email accounts automatically forwards the email to all applicable DLAR personnel within the facility.

If your communication involves multiple facilities, please use all applicable email addresses. This enables DLAR personnel to respond to a situation or request vs an email being in an individual's account, and coverage personnel not having access to it. The following email accounts were created to:

- Improve communication response times.
- Provide the research community with a central

point of contact for email correspondence.

- Ensure all key personnel at the assigned facilities are getting necessary communications in an efficient manner.

The following emails became active on February 1, 2016:

SBST	SBSTvettech@dlar.pitt.edu
EBST	EBSTvettech@dlar.pitt.edu
Safar (SRRC)	Safarvettech@dlar.pitt.edu
LSA	LSAvettech@dlar.pitt.edu
Outside Use Areas	OUAvettech@dlar.pitt.edu
BST3	BST3vettech@dlar.pitt.edu
RRB	RRBvettech@dlar.pitt.edu
PBRC	PBRCvettech@dlar.pitt.edu
RBL	RBLvettech@dlar.pitt.edu
HCC	HCCvettech@dlar.pitt.edu
BST3	BST3vettech@dlar.pitt.edu
RRB	RRBvettech@dlar.pitt.edu
PBRC	PBRCvettech@dlar.pitt.edu
RBL	RBLvettech@dlar.pitt.edu

Colony Status: As of March 3, 2015

Established Colonies: Knockouts, Transgenics, and Double Knockouts

ATF3 KO	Myd88 KO	TLR2 KO
Caspase 1 KO/Caspase 11 KO	Myd88 WT	TLR4 KO/Caspase 11 KO
Caspase11 KO	RAGE KO	TLR4 KO/RAGE KO
Cathespin L KO	Rorc GFP	TLR9 ^{CpG1/CpG1}
iNos KO	Staggerer KO	
Nalp 3 KO	Sting tg	

Established Colonies: Cell Specific Knockouts and Controls

DC TLR4 KO	iHMGB1 KO	TLR4 flox
HC HMGB1 KO	Lyz cre HMGB1 KO	TLR4 KO (global)
HC TACE KO	Lyz Cre TLR4 KO	TLR-9 flox
HC TACE WT	Lyz cre TLR9 KO	Pf4cre HMGB1 KO
HC TLR4 KO	ROSA Pf4cre HMGB1 KO	Pf4cre TLR4 KO
HMGB1 flox	Reporter	Villin cre HMGB1 KO
ROSA ^{mT/mG} /HMGB1 flox	TACE flox	

Colonies in Development

Caspase 11 flox	Myd88 KO (N1 backcross)	TACE flox (begin Bl/6 N6 backcross)
cGAS KO (Set up Jan '16)	RAGE KO (N1 backcross)	TLR4 KO (N1 backcross)
Gasdermin KO (quarantine)	ROSA ^{mT/mG} /TLR4 flox	TLR4 flox (N1 backcross)
IL-25 KO	ROSA ^{mT/mG} /TLR9 flox	TLR9 KO
IL-33 KO (Set up Feb '16)	ST2 KO (Rec'd 3/2/16 - HBF needs backcrossed to Bl/6 N6; SPF set up 3/15/16)	TSLP KO (Rec'd 3/2/16)
IRAK1 KO (import pending)		

Cryopreserved Strains *at Jackons Labs unless otherwise noted

AIM2 KO	HMGB1 +/-	TLR2 KO
CD36 KO	IFNabR KO	TLR-4 flox (Hackam)
EGR1 KO	Jα281-/-	TLR-9 (eggs, in house)
eNos tg		

Stud Colonies

HMGB1 flox x Albumin Cre	HMGB1 flox x villin cre	TLR4 KO x Lyz Cre
HMGB1 flox x ER cre	TACE flox x Albumin cre	TLR4 KO x Pf4 Cre
HMGB1 flox x Lyz cre	TLR4 KO x Albumin Cre	TLR9 flox x Lyz cre
HMGB1 flox x Pf4 cre	TLR4 KO x CD11c	

Strains Available from Collaborators

GDF-15 KO (Yoram Vodovotz)	IRF-1 KO (David Geller)	PAD4 -/- (Tsung)
GTPCH (Alex Chen)	Lys(M) GFP Knock-in, (Allan Tsung), heterozygous	PKR KO (Chen)
HMGB1 EC KO (Chen)	(Geller)	Rab27a KO (Geller)
HPH-1 KO (Chen)		

If you have any questions regarding the contents of this newsletter, contact [Deb Williams](#)
If you know of anything exciting or newsworthy going on in the lab that you want to share with others email [Alicia Frank](#) with the information
For more information, please visit the [General and Vascular Surgery Labs website](#)