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MMS Talks

MMS talks resume October 3, 2018.

A complete schedule will be forthcoming. Seminars are Tuesdays at noon in the Stearns auditorium

Our last MMS talk of this academic year was in collaboration with the Program in Cell & Molecular Developmental Biology

MCRI Highlights

Honors and Recognition

- The Robert Kung Interventional Heart Failure Clinical and Research Fellowship Program was launched this Spring in the CardioVascular Center for Research and Innovation and **Lija Swain, PhD** (Kapur Lab) was named the first Kung Research Fellow.
- **Mary Wallingford, PhD** presented her work on the interaction between maternal-fetal phosphate transport and placenta vascular calcification mechanisms at the Society for Developmental Biology (SDB) Annual meeting in Portland, Oregon earlier this month.
- **Lija Swain, PhD** is the recipient of a 2018-2019 Natalie V. Zucker Research Center for Women's Scholars grant.
- **Iris Jaffe, MD, PhD** presented a talk entitled "Vascular Mineralocorticoid Receptors: Explaining Clinical Conundrums in Cardiovascular Disease" at the Interurban Clinical Club's Spring meeting. In addition, **Dr. Jaffe** presented "Sex Difference in the Role of Endothelial Mineralocorticoid Receptors in Vascular Disease" at the annual Experimental Biology meeting.
- Six medical students spending their summer in the MCRI were awarded TUSM Summer Research Fellowships:
 - Richard Choe
 - Stephanie Hyon
 - Peter Martin
 - Vincent Olivieri
 - Filmon Tekeste
 - Aaron Yu

New Employees

Welcome to the following new staff members in the MCRI:

- **Olga Kashpur, PhD** recently joined the Wallingford lab as a postdoctoral research fellow and is located on Tupper 9-.
- **Sarah Newman** recently joined the Kapur lab as a clinical research coordinator and is located on Tupper 11.
- **Roger Perrault**, who previously worked in the Jaffe lab, has returned to Tufts Medical Center as a Research Assistant in the Wallingford Lab and is located on Tupper 9.

Employee Spotlight



Meet Kelly Tam Research Associate in the Blanton Lab

Hometown: Paramus, NJ

Favorite Thing about Boston: All the awesome music venues and restaurants

Favorite Boston Restaurant: Yvonne's (a very fun bar/restaurant downtown)

What do you like most about the MCRI: I very much enjoy the work and lab atmosphere at the MCRI. Everyone is always willing to help each other!

What are you currently working on in the MCRI? My current projects mainly focus on LV hypertrophy. This includes collaboration with Novartis on examining the effects of their drug, Entresto, on pressure overload-induced LV hypertrophy and heart failure.

What do you like to do when you are not in the lab? I enjoy relaxing and catching up with friends - especially friends with dogs.

MCRI Announcements

MCRI Retreat Registration

- The MCRI Retreat is just around the corner! It will be held September 27 – September 28 at the Marine Biological Laboratory in Woods Hole, MA.
- We are providing a grace period for submission of registration forms and poster abstracts. Please submit both to Chrissie Connors not later than August 10th.
- This year's guest speakers are:

John C. Burnett, Jr., MD

Edward Lakatta, MD

Jennifer Pollock, PhD

Jil C. Tardiff, MD, PhD

Perrie O'Tierney-Ginn, PhD

Marriott Family and Cardiovascular Research Professor, Mayo Clinic Chief, Laboratory of Cardiovascular Science, National Institute on Aging Co-Director, Cardio Renal Physiology and Medicine; Professor of Medicine, UAB
Professor of Medicine and Cellular and Molecular Medicine;
Steven M. Gootter Endowed Chair for Prevention of Sudden Cardiac Death; Vice Chair for Research, Department of Medicine, University of Arizona College of Medicine – Tucson
Principal Investigator in the Mother Infant Research Institute, Tufts Medical Center

Celebrating 20 Years of Research at the MCRI

Watch this video of **Iris Jaffe, MD, PhD**, Executive Director of the MCRI, discuss the impact of 20 years of cardiovascular research.

“Having been around for two decades puts us in a position to really make a difference in the lives of patients”

[Click here to watch the video](#)

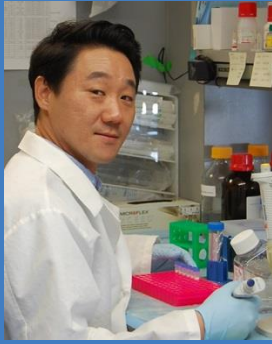
MCRI Travel Award

The funds raised by the Molecular Movers: Team MCRI are now available to support MCRI trainee travel in the form of small travel grants.

To apply, faculty members may submit a request on behalf of their trainees. Please send the following information to Debbie Slater by August 10th.

- Name of Trainee *
- Conference Name and Location
- Presentation to be given (talk or poster presentation)
- 1-3 Sentences on why the trainee should receive the travel grant

Research Spotlight



Seung Kim (SK), PhD in the Jaffe lab discusses his recent paper

“Smooth Muscle Cell-Mineralocorticoid Receptor as a Mediator of Cardiovascular Stiffness with Aging”

What is the topic of your study and why is it important: Blood vessels get stiffer as we age and the degree of vessel stiffness predicts heart disease risk. Thus, this study was aimed at understanding how blood vessels get stiffer with aging, therefore we can try to develop new medicines to prevent the adverse effects of aging on cardiovascular system.

What did you discover: Using a novel smooth muscle cell specific mineralocorticoid receptor deleted (SMC-MR-KO) mouse model our lab developed, we found that increases in vessel stiffness and fibrosis with aging were mitigated by deletion of SMC-MR in mice. Also, long-term pharmacological inhibition of MR in aged mice prevented the progression of vessel fibrosis and stiffness. Moreover, in a small human clinical trial, short-term pharmacological inhibition of MR in elderly people produced anti-aging benefits in biomarker levels in their blood.

The award may not be re-budgeted for a purpose other than travel nor may it be re-budgeted to attend a meeting other than the one proposed in the application without prior approval.

* Eligible trainees include current graduate students and postdoctoral fellows who will be presenting at a meeting (e.g., giving talk, abstract accepted, etc.) Awardees must be in training at Tufts Medical Center when the travel to the meeting occurs.

MCRI on the Move

- The MCRI Fly lab, directed by **Isabelle Draper, PhD**, has moved from Tupper 7 to Tupper 14.

MCRI Goes to Fenway Park

- Members of the MCRI and their family and friends watched the Red Sox face off against the Rangers on July 9th.



Thank You to Our Summer Students

- Twenty one summer students joined MCRI labs for research experiences this summer, and we would like to thank them for their hard work and contributions!

Destinee Alix-Garth	Wallingford Lab	High School Student
Sepehr Asgari	Chin Lab	High School Student, RSI@MIT *
Aditya Chenojwala	Kapur Lab	Medical Student, TUSM
Richard Choe	Blanton/Draper Lab	Medical Student, TUSM

Was there an unexpected finding: Interestingly, we found a strong relationship between vessel stiffness and heart stiffness. This finding suggests that increased heart disease with aging could be caused by not only decreased heart function itself, but also by decrements in vessel health with aging.

What impact will this have on the field or on medical care Our population is aging and aging is the strongest risk factor for heart attack, high blood pressure, stroke and death from heart disease. Therefore, this study provides a potential target to reduce incidence of heart diseases in the rapidly growing elderly population.

What is your next step? As the next step, we are trying to unravel the underlying mechanism in which SMC-MR contribute to increases in vessel stiffness and fibrosis with aging. Then, we will try to determine the therapeutic potential for antagonism of MR or its downstream mechanisms as targets for aging-associated vessel stiffness.

Read the Abstract Here

Samuel Ding	Chen Lab	Undergraduate, Tufts University
Efosa Enoma	Chen Lab	BDBS Program ^
Sina Fouroutanjazi	Kapur Lab	Medical Student, TUSM
Stephanie Hyon	Jaffe Lab	Medical Student, TUSM
Allyson Imbacuan	Wallingford Lab	High School Student
Cody Machen	Kapur Lab	Undergraduate, Case Western Reserve
Peter Martin	Chen Lab	Medical Student, TUSM
Ellah Nzikoba	Huggins Lab	BDBS Program ^
Vincent Olivieri	Chen Lab	Medical Student, TUSM
Sitara Rao	Jaffe Lab	Undergraduate, Tufts University
Allen Razavi	Kapur Lab	Medical Student, TUSM
Simon Shulman	Wallingford Lab	Undergraduate, UMass Amherst
Wes Spiro	Huggins Lab	Medical Student, TUSM
Filmon Tekeste	Jaffe Lab	Medical Student, TUSM
Sydney Weng	Chen Lab	High School Student
Aaron Yu	Blanton Lab	Medical Student, TUSM
Phyllis Zhang	Huggins lab	High School Student, RSI@MIT *

*Research Science Institute

^ Building Diversity in Biomedical Science, Sackler

To thank our summer students, Dr. Huggins hosted an ice cream social so that all in the MCRI could say thank you



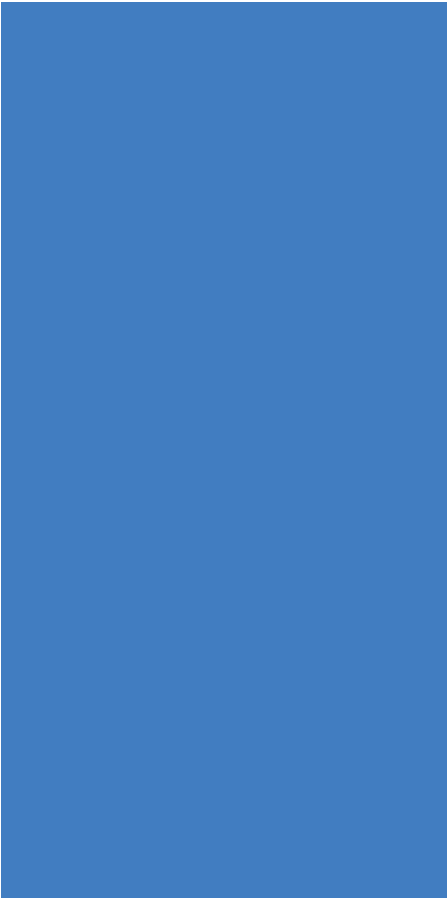
Recent Publications

1. Maron MS, Chan RH, Kapur NK, Jaffe IZ, McGraw AP, Kerur R, Maron BJ, Udelson JE. Effect of Spironolactone on Myocardial Fibrosis and Other Clinical Variables in Patients with Hypertrophic Cardiomyopathy. *Am J Med.* 2018 Jul;131(7):837-841. doi: 10.1016/j.amjmed.2018.02.025. Epub 2018 Mar 28. PubMed PMID: 29604289.
[Pub Med Abstract](#)
2. Davel AP, Jaffe IZ, Tostes RC, Jaisser F, Belin de Chantemèle EJ. New Roles of Aldosterone and Mineralocorticoid Receptors in Cardiovascular Disease: Translational and Sex-Specific Effects. *Am J Physiol Heart Circ Physiol.* 2018 Jun 29. doi: 10.1152/ajpheart.00073.2018. [Epub ahead of print] PubMed PMID: 29957022.
[Pub Med Abstract](#)
3. Gudejko MD, Gebhardt BR, Zahedi F, Jain A, Breeze JL, Lawrence MR, Shernan SK, Kapur NK, Kiernan MS, Couper G, Cobey FC. Intraoperative Hemodynamic and Echocardiographic Measurements Associated With Severe Right Ventricular Failure After Left Ventricular Assist Device Implantation. *Anesth Analg.* 2018 Jun 5. doi: 10.1213/ANE.0000000000003538. [Epub ahead of print] PubMed PMID: 29878942.
[Pub Med Abstract](#)

Contact Us

Have questions or updates for the next newsletter? Contact Chrissie Connors at: cconnors@tuftsmedicalcenter.org

4. Annamalai SK, Kapur NK. Contrast induced nephropathy after coronary or vascular intervention: More biomarkers than answers. *Catheter Cardiovasc Interv*. 2018 Jun;91(7):1192-1193. doi: 10.1002/ccd.27671. PubMed PMID: 29894593.
[Pub Med Abstract](#)
5. Patel NJ, Patel N, Bhardwaj B, Golwala H, Kumar V, Atti V, Arora S, Patel S, Patel N, Hernandez GA, Badheka A, Alfonso CE, Cohen MG, Bhatt DL, Kapur NK. Trends in utilization of mechanical circulatory support in patients hospitalized after out-of-hospital cardiac arrest. *Resuscitation*. 2018 Jun;127:105-113. doi: 10.1016/j.resuscitation.2018.04.007. Epub 2018 Apr 16. PubMed PMID: 29674141.
[Pub Med Abstract](#)
6. Shukri MZ, Tan JW, Manosroi W, Pojoga LH, Rivera A, Williams JS, Seely EW, Adler GK, Jaffe IZ, Karas RH, Williams GH, Romero JR. Biological Sex Modulates the Adrenal and Blood Pressure Responses to Angiotensin II. *Hypertension*. 2018 Jun;71(6):1083-1090. doi: 10.1161/HYPERTENSIONAHA.117.11087. Epub 2018 Apr 23. PubMed PMID: 29686001.
[Pub Med Abstract](#)
7. Good ME, Chiu YH, Poon IKH, Jaffe IZ, Bayliss DA, Isakson BE, Ravichandran KS. Response by Good et al to Letter Regarding Article, "Pannexin-1 Channels as an Unexpected New Target of the Antihypertensive Drug Spironolactone". *Circ Res*. 2018 May 25;122(11):e88-e89. doi: 10.1161/CIRCRESAHA.118.313080. PubMed PMID: 29798905.
[Pub Med Abstract](#)
8. Konstam MA, Kiernan MS, Bernstein D, Bozkurt B, Jacob M, Kapur NK, Kociol RD, Lewis EF, Mehra MR, Pagani FD, Raval AN, Ward C; American Heart Association Council on Clinical Cardiology; Council on Cardiovascular Disease in the Young; and Council on Cardiovascular Surgery and Anesthesia.. Evaluation and Management of Right-Sided Heart Failure: A Scientific Statement From the American Heart Association. *Circulation*. 2018 May 15;137(20):e578-e622. doi: 10.1161/CIR.0000000000000560. Epub 2018 Apr 12. Review. PubMed PMID: 29650544.
[Pub Med Abstract](#)
9. Allen LA, Adler ED, Bayés-Genis A, Brisco-Bacik MA, Chirinos JA, Claggett B, Cook JL, Fang JC, Gustafsson F, Ho CY, Kapur NK, Klewer SE, Kociol RD, Lanfear DE, Vardeny O, Sweitzer NK. When the VEST Does Not Fit: Representations of Trial Results Deviating From Rigorous Data Interpretation. *Circ Heart Fail*. 2018 Apr;11(4):e005116. doi: 10.1161/CIRCHEARTFAILURE.118.005116. PubMed PMID: 29666074.
[Pub Med Abstract](#)
10. Esposito ML, Jablonski J, Kras A, Krasney S, Kapur NK. Maximum level of mobility with axillary deployment of the Impella 5.0 is associated with improved survival. *Int J Artif Organs*. 2018 Apr;41(4):236-239. doi: 10.1177/0391398817752575. Epub 2018 Feb 20. PubMed PMID: 29637832
[Pub Med Abstract](#)
11. Shah M, Patil S, Patel B, Agarwal M, Davila CD, Garg L, Agrawal S, Kapur NK, Jorde UP. Causes and Predictors of 30-Day Readmission in Patients With Acute Myocardial Infarction and Cardiogenic Shock. *Circ Heart Fail*. 2018 Apr;11(4):e004310. doi: 10.1161/CIRCHEARTFAILURE.117.004310. PubMed PMID: 29618581.
[Pub Med Abstract](#)

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12. McCaffery JM, Ordovas JM, Huggins GS, Lai CQ, Espeland MA, Tate DF, Wing RR. Weight gain prevention buffers the impact of CETP rs3764261 on high density lipoprotein cholesterol in young adulthood: The Study of Novel Approaches to Weight Gain Prevention (SNAP). *Nutr Metab Cardiovasc Dis*. 2018 Mar 6. pii: S0939-4753(18)30088-7. doi: 10.1016/j.numecd.2018.02.018. [Epub ahead of print] PubMed PMID:
[Pub Med Abstract](#)
 13. Panagia M, Chen HH, Croteau D, Iris Chen YC, Ran C, Luptak I, Josephson L, Colucci WS, Sosnovik DE. Multiplexed Optical Imaging of Energy Substrates Reveals That Left Ventricular Hypertrophy Is Associated With Brown Adipose Tissue Activation. *Circ Cardiovasc Imaging*. 2018 Mar;11(3):e007007. doi: 10.1161/CIRCIMAGING.117.007007. Review. PubMed PMID: 29555834; PubMed Central PMCID: PMC5908227.
[Pub Med Abstract](#)
 14. Asnani A, Zheng B, Liu Y, Wang Y, Chen HH, Vohra A, Chi A, Cornella-Taracido I, Wang H, Johns DG, Sosnovik DE, Peterson RT. Highly potent visnagin derivatives inhibit Cyp1 and prevent doxorubicin cardiotoxicity. *JCI Insight*. 2018 Jan 11;3(1). pii: 96753. doi: 10.1172/jci.insight.96753. [Epub ahead of print] PubMed PMID: 29321375; PubMed Central PMCID: PMC5821184
[Pub Med Abstract](#)
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