Musculoskeletal Research Center

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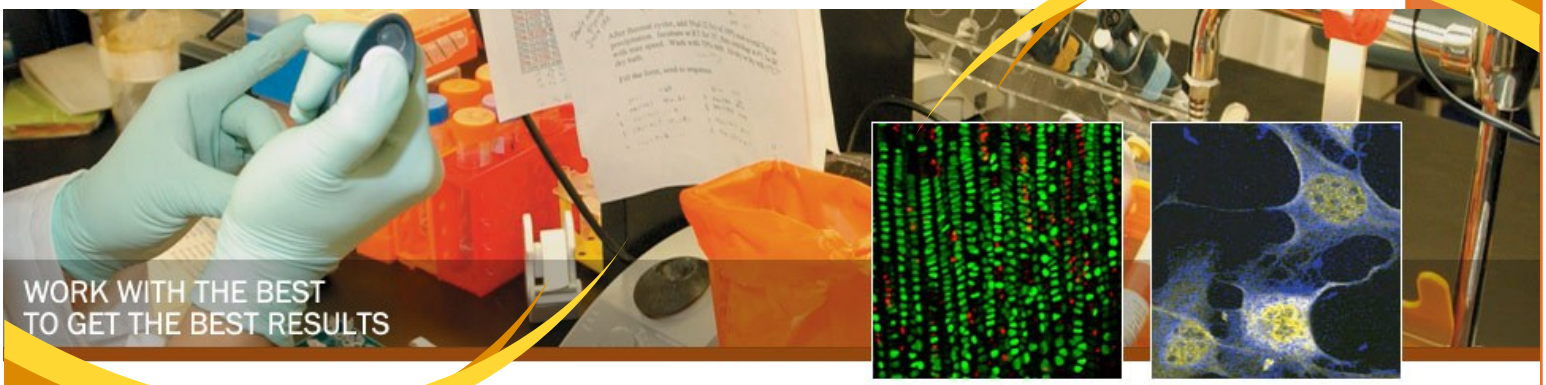
MUSCULOSKELETAL RESEARCH CENTER at Washington University



in this issue

Update from ASBMR Annual Meeting | September 12-15, 2014

Five in Washington University Orthopaedic Surgery Research receive 2014 ASBMR Young Investigator Awards and 2014 ASBMR Travel Awards at the American Society for Bone and Mineral Research (ASBMR) Annual Meeting 2014.

2014 ASBMR Young Investigator Awards

Rong Zeng, PhD. from the lab of Deborah Novack, MD, PhD
Timothy Hung-Po Chen, Ph.D. from the lab of Yousef Abu-Amer, PhD.
Joohyun Lim, M.S. from the lab of Fanxin Long, PhD.
Ali Zamani, PhD. and Corinne Decker, (PhD. Candidate) from the lab of Roberta Faccio, PhD.

2014 ASBMR Travel Award

Lucia D'Amico, PhD from the lab of Roberta Faccio, PhD.
Leila Revollo, PhD from the lab of Roberto Civitelli, MD.
Chao Qu, PhD, from the lab of Gabriel Mbalaviele, PhD.
Nidhi Rohatgi, PhD from the lab of Steven Teitelbaum, PhD.

P&F Grant Submission Deadline

This year, the P&F proposals will be **due on November 14, 2014**. Please follow the link below for additional information:

http://www.musculoskeletalcore.wustl.edu/content/Pilot-amp-Feasibility-Grants/2990/Call-for-Proposals.aspx

UPDATED!

Core D: Mouse Strain List

(click to view list)

Avioli Musculoskeletal Seminar Series

Fridays @ 9am | BJCIH Bldg. 11th flr | A/B Conf. Rm.

Date	Speaker
11/07	T. Michael Underhill, PhD - *Univ. of British Columbia*
11/14	Matthew Silva, PhD *Orthopaedic Surgery Dept.*
11/21	Simon Tang, PhD *Orthopaedic Surgery Dept.*
11/28	Holiday
12/05	Linda Sandell, PhD *Orthopaedic Surgery Dept.*
12/12	Keith Hruska, MD *Pediatrics*
12/19	Dan Link, MD *Oncology*

For more information about the MRC and the Cores, please click here: http://muscoloskeletalcore.wustl.edu

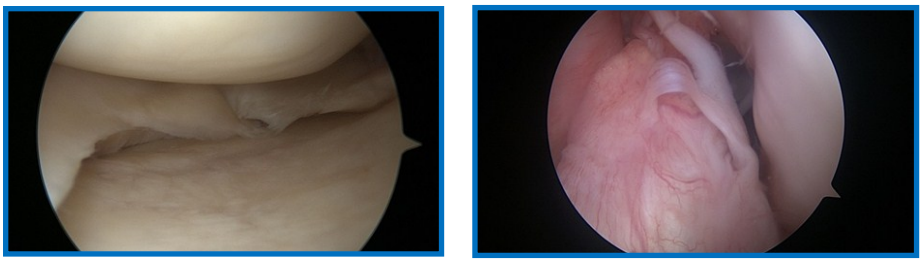
Please remember to include reference to support from the Musculoskeletal Research Center in your abstracts and publications.
Cite Grant # P30AR057235
from the National Institute Of Arthritis And Musculoskeletal And Skin Diseases.

Can early molecular events in the knee after injury predict the development of osteoarthritis?

Robert Brophy, MD and M. Farooq Rai, PhD

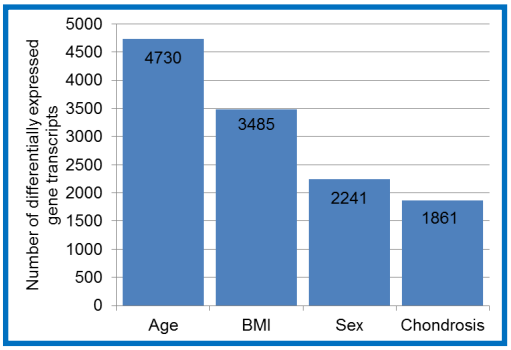
Knee injuries such as meniscus and ACL tears in young, active individuals significantly increase the risk for developing ostearthritis (Figure 1). With almost one million meniscus surgeries and several hundred thousand ACL surgeries annually in the United States alone, there is a sizable segment of the population with a potential time bomb ticking in their knees. Unfortunately, we do not have the ability to identify, let alone intervene to help, the population at particularly high risk for osteoarthritis.

Figure 1 – Meniscus tear and ACL tear



Early molecular events in the knee after injury may be helpful to predict the development of osteoarthritis, as well as evaluate current treatments, and potentially identify new therapies, to delay or prevent this disease. Working in collaboration with Drs. M. Farooq Rai, Linda Sandell and others, we have completed early investigations on the metabolic activity of the injured meniscus as an initial window into molecular events in the knee. We have found that patients' age, body mass index, sex and knee chondrosis are associated with differences in the injured meniscus, which may have clinical relevance for the subsequent risk for osteoarthritis (Figure 2). Further differences have been seen in meniscus tears with associated ACL tears in the same knee, which may partly explain why the combination of ACL and meniscal injuries have particularly profound implications for the future health of the joint.

Figure 2 – Influence of various patients' related factors on the number of differentially expressed gene transcripts in the injured meniscus.



Expanding our analysis to also include articular cartilage and ACL tissues, we are now trying to better understand molecular cross talk in the knee and how this may relate to the risk for osteoarthritis. Ultimately, we hope to identify molecular markers which could identify patients at particularly high risk for osteoarthritis and lead to new therapies to delay or prevent the development of osteoarthritis in the knee.

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Musculoskeletal Winter Symposium
February 16, 2015

If you have any questions regarding the MRC, please contact:
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