Center for Musculoskeletal Research (CSR)

Center for Musculoskeletal Research Newsletter *October 2023*

CSR Friday Research Seminar Series *in collaboration with UCSF*

Friday, October 6, 2023 • 3:30pm – 5:00pm ET

Occurs every first or second Friday of the month. Click here for full schedule.

"Determinants of Skeletal Fragility in Type 1 Diabetes"

Fjola Johannesdottir, PhD

Assistant Professor of Orthopedic Surgery
Beth Israel Deaconess Medical Center and Harvard Medical School

&

"PET/MRI of Molecular and Structural Signatures of Peripheral Pain Generators"

Daehyun Yoon, PhD

Assistant Adjunct Professor of Radiology & Biomedical Imaging; UC San Francisco

Zoom: https://ucsf.zoom.us/j/98885910714?pwd=eWF2c2tuQWFTU3UxZWxJeDJ3a05HZz09
Meeting ID: 988 8591 0714. **Password:** 251547

CSR Methods Workshop

Wednesday, October 25, 2023 • 4:00-5:00 pm ET

"RNA Sequencing and Spatial Transcriptomics in Musculoskeletal Tissues Workshop"

Matthew Warman, MD

Professor of Genetics, Boston Children's Hospital
Director RNA Sequencing and Spatial Transcriptomics Core

Zoom: https://partners.zoom.us/j/81721589218?pwd=REppUlozY3FaL2hkb0M3dHFpK1NvUT09
Meeting ID: 817 2158 9218 Passcode: 170097

CSR Core Mini Grants

Center for Musculoskeletal Research Core mini-grants (up to $2,000 direct costs only) will be awarded for the purpose of obtaining critical preliminary data for an upcoming grant submission. Funds must be used for CSR Core services.

Click here *for application details.* Email applications to **CSRmail@partners.org**

CSR Innovation Awards

Innovation awards are designed to promote the ability of Center investigators to visit outside laboratories to gain expertise in novel methodologies which can be integrated into one of the Resource Cores so our community can benefit from these new technologies. Funds (up to $5000) are available to cover the costs of supplies and reagents required, as well as any necessary travel. Applications are accepted on a rolling basis. Discussion with the relevant Core director is highly encouraged prior to preparing an application.

Click here *for application details.* Email applications to **CSRmail@partners.org**

Center for Musculoskeletal Research (CSR)

BU CMTM 2023 Symposium

Friday, October 20, 2023 • 9:30 am – 4:00 pm ET

You are cordially invited to The Center for Multiscale and Translational Mechanobiology's 4th Annual Symposium, *Cell-Matrix Conversations*, on Friday, October 20th from 9:30 a.m. to 4:00 p.m. on the Boston University campus.

The Keynote Addresses will be by **Dr. Boris Hinz**, the Keenan Research Chair in Fibrosis Research at St. Michael's Hospital and University of Toronto Distinguished Professor in Tissue Repair and Regeneration.

There also will be guest faculty speakers from BU and additional institutions, as well as a poster session presented by postdoctoral associates and students.

This event is free and open to everyone in the Boston University and scientific community. Covid-19 protocols will be in place for all presentations and food service.

Additional information, including **how to register for the event**, can be found on the **CMTM website.**

SAVE THE DATE!

Musculoskeletal Research Symposium

Monday, May 6, 2024 • 8:00 am – 5:00 pm ET

In person event: MGB Assembly Row, 440 Foley Street Somerville, MA 02145

OPEN POSITIONS

Open position 1: Research Scientist, Department of Orthopaedic Surgery in UConn Musculoskeletal Institute

We are writing to ask for your assistance in identifying a Research Scientist to join the Department of Orthopaedic Surgery within the UConn Musculoskeletal Institute at the Assistant or Associate Professor Level in the tenure track. We are searching for an outstanding individual working in skeletal biology and wanting to make a difference in the field of musculoskeletal research. A Ph.D. or an M.D. degree is required.

Candidates' research should be aimed at addressing fundamental questions related to cellular, molecular or physiological mechanisms of the skeletal system or of a translational nature to skeletal pathology. We are particularly interested in individuals currently funded by the National Institutes of Health, including K99 award recipients.

The University of Connecticut School of Medicine has a highly interactive research environment with interdisciplinary graduate and medical science training programs. The UConn Musculoskeletal Institute is a multidisciplinary center housing scientists, clinicians, and clinician-scientists under one roof with investigators studying various aspects of skeletal cell biology and biomechanics of the musculoskeletal system. There is ample opportunity to interact/work with basic and physician scientists, including orthopaedic surgeons, spine clinician-scientists and osteoporosis specialists. Appropriate laboratory space and a start-up package will be offered.

Candidates for the Research Scientist position can contact Dr. Ernesto Canalis (canalis@uchc.edu) and Dr. Isaac Moss (imoss@uchc.edu).

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Open position 2: Molecular Bone Biology Lab, Denmark (Thomas Levin Geiser Andersen lab)

Open 4-year postdoc position for the project "How bisphosphonates affect bone matrix and remodeling: implications for atypical femoral fractures" within my Molecular Bone Histology (MBH) lab, Denmark.

The project is funded by a multi-PI NIH R01 grant (1R01AR080118-01A1) in collaboration with Dr. Ryan Ross from the Rush University Medical Center, Chicago, US, and Dr. Joseph Wallace, Indiana University, Indianapolis, US.

You can find the full announcement on:
www.researchgate.net/jobs
https://www.nature.com/naturecareers/jobs/
Or directly on https://www.sdu.dk/en/service/ledige_stillinger/1214907
Application deadline: October 8, 2023

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Open Position 3: Research Technician, MGH Endocrine Department

The Research Laboratory Technician 1 is a full-time position, and the primary responsibility is to assist in ongoing research studies under the supervision of a Core manager and Core directors. The position is dedicated to performing studies examining skeletal biology. This includes collection of and accurate recording of procedures and results, maintenance of databases used in the lab, ordering necessary reagents to conduct experiments, and participation in joint upkeep of the lab. This position requires a person who has Bachelor of Science degree in biochemistry, molecular/cell biology or a related field, pays attention to details, is capable of working independently after training, possesses good verbal and written communication skills, and works well as part of a team. Select candidates with an Associates degree may be considered.

Click here *to view the full announcement and job description.*

Recently Published by the CSR Community

Phosphate-induced activation of VEGFR2 leads to caspase-9-mediated apoptosis of hypertrophic chondrocytes.
Yadav PS, Papaioannou G, Kobelski MM, Demay MB. Phosphate-induced activation of VEGFR2 leads to caspase-9-mediated apoptosis of hypertrophic chondrocytes. iScience. 2023;26(9):107548. Published 2023 Aug 7. doi:10.1016/j.isci.2023.107548

Hussein AI, Carroll D, Bui M, Wolff A, Matheny H, Hogue B, Lybrand K, Cooke M, Bragdon B, Morgan E, Demissie S, Gerstenfeld L. Oxidative metabolism is impaired by phosphate deficiency during fracture healing and is mechanistically related to BMP induced chondrocyte differentiation. Bone Rep. 2023 Jan 23;18:101657. doi: 10.1016/j.bonr.2023.101657. PMID: 37425193; PMCID: PMC10323218.

Portales-Castillo I, Dean T, Cheloha RW, Creemer BA, Vilardaga JP, Savransky S, Khatri A, Jüppner H, Gardella TJ. Altered Signaling and Desensitization Responses in PTH1R Mutants Associated with Eiken Syndrome. Commun Biol. 2023 Jun 2;6(1):599. doi: 10.1038/s42003-023-04966-0. PMID: 37268817; PMCID: PMC10238420.

Young C, Kobayashi T. Limited roles of Piezo mechanosensing channels in articular cartilage development and osteoarthritis progression. Osteoarthritis Cartilage. 2023 Jun;31(6):775-779. doi: 10.1016/j.joca.2023.01.576. Epub 2023 Feb 17. PMID: 36805475.

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Mitchell DM, Singhal V, Animashaun A, Bose A, Carmine B, Stanford FC, Inge TH, Kelsey MM, Lee H, Bouxsein ML, Yu EW, Bredella MA, Misra M. Skeletal Effects of Sleeve Gastrectomy in Adolescents and Young Adults: A 2-Year Longitudinal Study. J Clin Endocrinol Metab. 2023 Mar 10;108(4):847-857. doi: 10.1210/clinem/dgac634. PMID: 36314507; PMCID: PMC10211497.

Sato T, Andrade CDC, Yoon SH, Zhao Y, Greenlee WJ, Weber PC, Viswanathan U, Kulp J, Brooks DJ, Demay MB, Bouxsein ML, Mitlak B, Lanske B, Wein MN. Structure-based design of selective, orally available salt-inducible kinase inhibitors that stimulate bone formation in mice. Proc Natl Acad Sci U S A. 2022 Dec 13;119(50):e2214396119. doi: 10.1073/pnas.2214396119. Epub 2022 Dec 6. PMID: 36472957.

Karagianni A, Matsuura S, Gerstenfeld LC, Ravid K. Inhibition of Osteoblast Differentiation by JAK2^{V617F} Megakaryocytes Derived From Male Mice With Primary Myelofibrosis. Front Oncol. 2022 Jul 8;12:929498. doi: 10.3389/fonc.2022.929498. PMID: 35880162; PMCID: PMC9307716.

Daley EJ, Yoon SH, Reyes M, Bruce M, Brooks DJ, Bouxsein M, Potts JT, Kronenberg HM, Wein MN, Lanske B, Jüppner H, Gardella TJ. Actions of Parathyroid Hormone Ligand Analogues in Humanized PTH1R Knockin Mice. Endocrinology. 2022 Jul 1;163(7):bqac054. doi: 10.1210/endocr/bqac054. PMID: 35460406; PMCID: PMC9167040.

Phan HTN, Loomis J, Abraham S, He Q, Bastepe M, Smrcka AV. A naturally occurring membrane-anchored $G\alpha_s$ variant, $XL\alpha_s$, activates phospholipase Cβ4. J Biol Chem. 2022 Jun 13;298(8):102134. doi: 10.1016/j.jbc.2022.102134. Epub ahead of print. PMID: 35709985; PMCID: PMC9294334.

Young C, Caffrey M, Janton C, Kobayashi T. Reversing the miRNA -5p/-3p stoichiometry reveals physiological roles and targets of miR-140 miRNAs. RNA. 2022 Jun;28(6):854-864. doi: 10.1261/rna.079013.121. Epub 2022 Mar 24. PMID: 35332065; PMCID: PMC9074898.

Shaw AT, Yan J, Kuhstoss SA, Charles JF, Gravallese EM. Dickkopf-1 directs periosteal bone formation in two murine models of inflammatory arthritis. Scand J Rheumatol. 2022 Mar 11:1-5. doi: 10.1080/03009742.2022.2040136. Epub ahead of print. PMID: 35272576.

Mor Grinstein, Stephanie L Tsai, Daniel Montoro, Heather L Dingwall, Ken Zou, Moshe Sade-Feldman, Miho J Tanaka, Terence D Capellini, Jayaraj Rajagopal, Jenna L Galloway. BioRxiv doi: https://doi.org/10.1101/2022.02.02.478533

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