

Penn Center for Musculoskeletal Disorders Pilot & Feasibility Grants
(all grants awarded since inception of Center)

Awarded 2021-2022

Christop Thaiss, Ph.D., Department of Microbiology, Perelman School of Medicine: “Microbiome Control of Musculoskeletal Physiology”

Melike Lakadamyali, Ph.D., Department of Physiology, Children’s Hospital of Philadelphia and Perelman School of Medicine: “Chromatin Structural Regulation of Chondrocyte Fate in Cell Therapy”

Michael Hast, Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Development of Load-Bearing Trauma Implants Using Bioresorbable Zinc Alloy Scaffolds”

Awarded 2020-2021

Kyu Sang Joeng, Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “The Function of Mtorc1 Signaling in the Regulation of the Provisional Matrix During Tendon Healing”

Patrick Seale, Ph.D., Department of Cell and Developmental Biology, Institute for Diabetes, Obesity and Metabolism, Perelman School of Medicine: “Fat and Synovial Tissue Development and Disease Remodeling in Joints”

Josh R. Baxter, Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Stimulating Muscle-Tendon Healing by Prescribing Mechanical Loading”

Awarded 2019-2020

Jaimo Ahn, M.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “The Interplay of Notch Suppression and Hypoxia on Bone Regeneration”

Riccardo Gottardi, Ph.D., Department of Pediatrics, CHOP Pulmonary Medicine: “Impact of Scaffold Microporosity in Guiding Local Stem Cell Differentiation for Osteochondral Repair”

Lachlan Smith, Ph.D., Departments of Neurosurgery/Orthopaedic Surgery: “Emergent Nucleus Pulposus Cell Heterogeneity during Intervertebral Disc Development and Growth” (*awarded extramural funding from NIH/NIAMS R21AR077261*)

Awarded 2018-2019

Miltiadis Zgonis, M.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Development, Maturation, and Function of Meniscal Radial Elements”

Joel Boerckel, Ph.D., Departments of Bioengineering/Orthopaedic Surgery, Perelman School of Medicine: “Role of Yap/Taz in Osteoprogenitor Cell-Induced Angiogenesis for Vascularized Bone Repair” (*awarded extramural funding from NIH/NIAMS R01AR074948 and R01AR073809*)

Awarded 2017-2018

Nathaniel Dymant, Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Murine Anterior Cruciate Ligament Reconstruction Model to Understand the Cellular Origins and Mechanisms of Repair” (*awarded extramural funding from NIH/NIAMS R01 AR076381*)

Yangqing Gong, Ph.D., Department of Medicine, Perelman School of Medicine: “Role of Plasminogen in Mesenchymal Stem Cell Function and Post-Injury Bone Regeneration”

Carla Scanzello, M.D., Ph.D., Department of Medicine, Perelman School of Medicine: “Importance of Macrophage Responses in Osteoarthritis”

Susan Volk, V.M.D., Ph.D., D.A.C.V.S., Department of Small Animal Surgery, School of Veterinary Medicine: “The Regulatory Roles of Type III Collagen in the Cartilage Collagen Network: Implications for Osteoarthritis Prevention and Treatment”

Awarded 2016-2017

Joseph Baur, Ph.D., Department of Physiology Institute for Diabetes, Obesity and Metabolism, Perelman School of Medicine: “Targeting Nad Metabolism in Muscular Dystrophy” (*awarded extramural funding from Elysium Health*)

Yongwon Choi, Ph.D., Department of Pathology and Lab Medicine, Perelman School of Medicine: “Cell Adhesion Regulation of Multiple-Myeloma Induced Bone Destruction”

X. Sherry Liu, Ph.D., Department of Orthopaedic Surgery and Bioengineering, Perelman School of Medicine: “Mechanical Consequences of Modeling- vs. Remodeling-Based Bone Formation” (*awarded extramural funding from the NSF Award #1661858*)

Hongtao Zhang, Ph.D., Department of Pathology and Lab Medicine, Perelman School of Medicine: “Novel Cartilage-Targeting Fc Fusion Proteins as Novel and Effective Treatments For Osteoarthritis”

Awarded 2015-2016

Yeji Zhang, M.D., Ph.D., Department of Physical Medicine and Rehabilitation, Perelman School of Medicine: “Inhibition of Adam-8 to Reduce Intervertebral Disc Degeneration” (*Awarded extramural funding from the VA Merit; VA Competitive Pilot Fund*)

Oren Friedman, M.D., Department of Otorhinolaryngology, Perelman School of Medicine: “Effect Of Injury To Cartilage And Recovery Treatment With Fgf-18”

Harvey Smith, M.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Impact of Pre-Culture and In Vivo Remobilization on Engineered Disc Replacement” (*Awarded extramural funding from the VA RX002274-01A1*)

Tejvir Khurana, M.D., Ph.D., Department of Physiology, Perelman School of Medicine: “Role of the Il-15 / Il-15 α Axis in Modulating Muscle-Tendon-Bone Adaptation and Repair”

Awarded 2014-2015

Joshua F. Baker, M.D., MSCE, Department of Rheumatology & Epidemiology, Perelman School of Medicine: “Assessment of Intramyocellular Fat Accumulation in Rheumatoid Arthritis Using MR Spectroscopy” (*Awarded extramural funding from American Federation for Aging Research Foundation*)

Russ P. Carstens, M.D., Department of Renal-Electrolyte and Hypertension Division, Perelman School of Medicine: “Roles of Epithelial Splicing Regulatory Proteins in Craniofacial Development” (*awarded extramural funding NIH 1R56DE024749 and awarded R01 NIDCR*)

Foteini Mourkoti, Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “A Novel Molecular Mechanism in Chronic Skeletal Muscle Injury” (*awarded extramural funding R01AR075914 NIH/NIAMS*)

Chamith Rajapakse, Ph.D., Department of Radiology, Perelman School of Medicine: “Biomechanics of Hip Fracture Assessed by MRI” (*Awarded extramural funding from the NIH R01 AR068382*)

Awarded 2013-2014

X. Sherry Liu, Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Structure and Strength Recovery in Post-Lactation Bone” (*awarded extramural funding from the NIH R03 AR065145 and NSF Career Award #1653216*)

Ling Qin, Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Novel Anabolic Treatment for Radiation-Induced Osteoporosis” (*awarded extramural funding from the NIH R01AR066098*)

Lachlan Smith, Ph.D., Departments of Neurosurgery/Orthopaedic Surgery, Perelman School of Medicine: “Molecular Mechanisms of Failed Vertebral Bone Formation in Mucopolysaccharidosis VII” (*awarded extramural funding from the NIH R03 AR065142 and the MPS Society*)

Hansell H. Stedman, M.D., Department of Surgery, Perelman School of Medicine: “Molecular Pattern Recognition in Acute and Chronic Injury to Muscle and Myotendinous Junction” (*awarded extramural funding from the NIH R01NS094705*)

Awarded 2012-2013

Jason Burdick, Ph.D., Department of Bioengineering, School of Engineering and Applied Science: “Acellular Fibrous Scaffolds for Stem Cell Recruitment and Cartilage Repair” (*awarded extramural funding from the NIH R01 EB008722*)

James L. Carey, M.D., MPH, Department of Orthopaedic Surgery, Perelman School of Medicine: “Development of a Large Animal Model of Osteochondritis Dissecans” (*awarded extramural funding from the NIH R01 EB008722*)

Andrew Kuntz, M.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Effects of Intra-Articular Glenohumeral Injection of a Nonsteroidal Anti-Inflammatory Drug on Shoulder Joint Mechanics in a Rat Model”

Arjun Raj, Ph.D., Department of Bioengineering, School of Engineering and Applied Science: “Single Cell Analysis of Molecular and Micromechanical Heterogeneity in Mesenchymal Stem Cells and Engineered Tissues”

Awarded 2011-2012

Struan F.A. Grant, Ph.D., Department of Pediatrics, Children’s Hospital of Philadelphia and Perelman School of Medicine: “Utilization of ChIP-seq to Identify Genes Regulated by Osterix”

Motomi Enomoto-Iwamoto, DDS, Ph.D., Department of Orthopaedic Surgery, Children’s Hospital of Philadelphia and Perelman School of Medicine: “Tendon Repair by Retinoic Acid Receptor Agonists” (*awarded extramural funding from the NIH R21 AR062193*)

Ian N. Jacobs, M.D., Department of Otorhinolaryngology: Head and Neck Surgery, Children’s Hospital of Philadelphia and Perelman School of Medicine: “A Pilot Study for the Development of a Rabbit In-Vivo Tissue- Engineered Cartilage Graft for Pediatric Laryngotracheal Reconstruction” (*awarded extramural funding from The Triological Society*)

Awarded 2010-2011

Susan W. Volk, VM.D., Ph.D., Dipl ACVC, Department of Small Animal Surgery, School of Veterinary Medicine: “The Role of Type III Collagen in Bone Repair and Regeneration”

Jaimo Ahn, M.D., Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Toward the Identification of Molecular Pathway Alterations in Aged Fracture Healing: A Pilot Study Utilizing a Genetic Model of Senescence” (*awarded extramural funding from the NIH R03 AG040670*)

Shannon Fisher, M.D., Ph.D., Department of Cell and Developmental Biology, Perelman School of Medicine: “Requirement for Osterix in Skull Formation and Maintenance of Adult Bone in Zebrafish” (*awarded extramural funding from the NIH R21 DE021509*)

Awarded 2010-2011 (Jointly with IOA)

Olena Jacenko, Ph.D., Department of Animal Biology, School of Veterinary Medicine: “Aging of the Hematopoietic Niche” (*awarded extramural funding from the NIH R01 DK088334-01*)

Eileen M. Shore, Ph.D., Departments of Orthopaedic Surgery and Genetics, Perelman School of Medicine: “Modulation of Progenitor Cell Differentiation through BMP Signaling” (*awarded extramural funding from the NIH R01 AR041916-15*)

Kurt D. Hankenson, DVM, Ph.D., Department of Animal Biology, School of Veterinary Medicine: “Notch Signaling in Bone Regeneration” (*awarded extramural funding from the DOD CDMRP*)

Awarded 2009-2010

Ling Qin, Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Mechanisms of EGFR Action on Bone” (*awarded extramural funding from the NIH R01 DK095803*)

Steven Scherer, M.D., Ph.D., Department of Neurology, Perelman School of Medicine: “Are N-cadherin and L1 Adhesion Molecules Required for Recovery of Muscle Strength after Nerve Injury?”

Nader M. Hebel, M.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “A Pre-Clinical Rodent Model of Intervertebral Disc Autograft Transplant” (*awarded extramural funding from the DOD/CDMRP/PROP OR090090*)

Awarded 2008-2009

Sunday O. Akintoye, BDS, DDS, MS, Department of Oral Medicine, School of Dental Medicine: “Orofacial Bone Marrow Stromal Cells Promote Bisphosphonate-Associated Jaw Osteonecrosis” (*awarded extramural funding from the NIDCR R21 DE022826*)

Margaret M. Chou, Ph.D., Departments of Cell and Developmental Biology, Perelman School of Medicine: “Mechanisms of TRE17/USP6 Function in the Etiology of Aneurysmal Bone Cyst” (*awarded extramural funding from the NIH-NCI R01 CA168452 and R21-CA18601*)

Kenneth W. Leichty, M.D., Department of Surgery, Perelman School of Medicine: “The Role of Inflammation in Regenerative Fetal Tendon Wound Healing” (*awarded extramural funding from the NIH DP2 DK083085*)

Kathleen M. Loomes, M.D., Department of Pediatrics, Children’s Hospital of Philadelphia: “The Role of Jag1 in Osteogenesis”

Eileen M. Shore, Ph.D., Departments of Orthopaedic Surgery and Genetics, Perelman School of Medicine: “Analysis of an ACVR1 Knock-in Mouse Model for FOP” (*awarded extramural funding from the NIH R01 AR041916-15S1*)

Awarded 2007-2008

Sherrill L. Adams, Ph.D., Department of Biochemistry, School of Dental Medicine: “Collagen III-deficient Mice as a Model for Musculoskeletal Wound Repair”

Kurt D. Hankenson, DVM, Ph.D., Department of Animal Biology, School of Veterinary Medicine: “Regulation of Bone Formation by Novel Activators of Canonical Wnt Signaling”

Awarded 2006-2007

Robert J. Pignolo, M.D., Ph.D., Department of Medicine, Perelman School of Medicine: “Stem Cell Rescue of the Osteoporotic Phenotype in a Mouse Model of Accelerated Aging” (*awarded extramural funding from the NIH R01 AG028873*)

Robert L. Mauck, Ph.D., Department of Orthopaedic Surgery, Perelman School of Medicine “Meniscus Repair with a Novel Aligned Nanofiber Scaffold” (*awarded extramural funding from the NIH R01 AR056624 and the VA RR & D*)

Christopher S. Chen, M.D. Ph.D., Department of Bioengineering, School of Engineering and Applied Science: “Mechanotransduction in Mesenchymal Stem Cells” (*awarded partial funding as Co-Investigator on NIH P41 EB001046*)

Pedro K. Beredjiklian, M.D., Department of Orthopaedic Surgery, Perelman School of Medicine: “Role of Hyaluronic Acid Receptors in Tendon Healing” (*awarded extramural funding from the NIH R21 AR052393*)