



JBC Monthly Newsletter

October 2020

JBC Updates

- The JBC P30 renewal application was submitted successfully to the NIAMS on October 6. The 850-page proposal included > 70 letters of support from current and future JBC members. Thanks to all of you, successful outcomes through year 4 included:
 - 186 registered users of www.jbcwebportal.com
 - 11,786 “service units” delivered – e.g. recruitment letters, scRNA-seq clusters, CyTOF conditions, stats consults, etc.
 - 73 aims reviewed in Aims Review Committee
 - 56 Arthritis Synergy Meeting talks
 - 4 JBC Visiting Professors
 - 33 JBC Mentor-Mentee dyads
 - 56 JBC Microgrants awarded, totaling \$271,784
 - 61 new grants using JBC support (including 10 K grants and 8 RO1s), totaling \$28,608,455 direct costs, for a return on NIH investment so far of 13.4:1.
 - 132 papers with a combined impact factor of 1064

- If we are successful in our application, things JBC members can look forward to include:
 - A new **JBC Recruitment Core** for prospective, targeted sample collection from among >130,000 consented patients at Mass General Brigham and Boston Children’s Hospital
 - An enhanced suite of **next-generation sequencing tools**, including single-cell RNA-seq, ATAC-seq, genomic DNA sequencing panels, targeted CRISPR screens, PhIP-seq, T-scan, and tissue transcriptomics
 - More and better **protein-based tools** including CyTOF (and EpiTOF, PhosphoCyTOF), tissue mass cytometry, and custom Luminex panels for multiplexed analyte determination.
 - A new **JBC Bioinformatics Core** and **JBC Data Club** to manage the data avalanche.
 - An expanded **JBC Microgrant Program**, increased to 12 grants (\$60,000) yearly through generous commitments from BWH Rheumatology, BWH Orthopedics, and BCH Immunology.

- **Next JBC Synergy Meeting** will be on October 30th, 12:30-1:30 p.m. Eastern Time via Zoom.
 - Talk 1: Lindsey Macfarlane, M.D. “Osteoarthritis and Inflammation”
 - Talk 2: Katherine Liao, M.D. “From genetic sequences to bDMARD sequences”

The JBC Team:

Peter Nigrovic, M.D.
Director (BWH & BCH)

Human Biosamples Core:

- Elizabeth Karlson, M.D.
Director
- Jeffrey Sparks, M.D., M.M.Sc.
Associate Director BWH
- Lauren Henderson, M.D., M.M.Sc.
Associate Director BCH

Cellular Systems Core:

- Jim Lederer, Ph.D.
Director
- Peter Nigrovic, M.D.
Associate Director
- Kevin Wei, M.D., Ph.D.
Associate Director

- We are delighted to announce the **8 JBC Microgrant awardees** for the September 2020 cycle:
 - Yuriy Baglaenko, Ph.D., BWH (Raychaudhuri lab), Validation of causal autoimmune variants in BACH2 with CRISPR-Cas base-editors and single cell sequencing
 - Heather Faust, Ph.D., BWH (Brenner lab), The role of adipose tissue in healthy synovial cell identity
 - Emily Hunt, Ph.D., BWH (Lattermann lab), Utilizing scRNAseq To Uncover Potential Therapeutic Targets of Post-Traumatic Osteoarthritis in Mouse Synovium Following ACL Transection
 - Hyuk Jee, BCH (Pui lab), Defining the Pathophysiology of DADA2 (Deficiency of Adenosine Deaminase 2) by Single-Cell Transcriptomics
 - Edy Kim, MD, Ph.D., BWH (Brenner lab), Granzyme K and IFN γ mediate T cell - fibroblast axis in autoimmune disease.
 - Felix Radtke, BWH (Nigrovic lab), Defining the surfaceome of human neutrophil maturation by CITE-seq
 - Julia Schnell, BWH (Nigrovic lab), Defining the human phenotype of IL-1 β -driven osteoclastogenic Tregs
 - Xiaomeng You, Ph.D., BWH (Charles lab), Insights into the role of osteoclasts in Fibrous Dysplasia through Single-cell RNA Sequencing

JBC Member News

AWARDS AND GRANTS

Joerg Ermann (BWH) has been awarded a grant entitled "Cellular mapping of IL-17A mediated skeletal pathology"- an Investigator-initiated study grant sponsored by Novartis.

Joerg Ermann (BWH) has been selected as a section editor for "Spondyloarthritis including Psoriatic Arthritis" 2021 Current Opinion in Rheumatology.

PUBLICATIONS

Faust HJ, Zhang H, Han J, Wolf MT, Jeon OH, Sadtler K, Peña AN, Chung L, Maestas DR Jr, Tam AJ, Pardoll DM, Campisi J, Housseau F, Zhou D, Bingham CO 3rd, Elisseff JH. IL-17 and immunologically induced senescence regulate response to injury in osteoarthritis. *J Clin Invest.* 2020 Oct 1;130(10):5493-5507. doi: 10.1172/JCI134091. PMID: 32955487; PMCID: PMC7524483.

Singh N, Baer RJ, Swaminathan M, Saurabh S, **Sparks JA**, Bandoli G, Flowers E, Jelliffe-Pawłowski LL, Ryckman KK. Pregnancy after bariatric surgery in women with rheumatic diseases and association with adverse birth outcomes. *Surg Obes Relat Dis.* 2020 (In Press).

Xiang L, Low AHL, Leung YY, Fong W, Gandhi M, Xin X, Jb Uy E, **Sparks JA**, Karlson EW, Thumboo J. Improving sensitivity of the Connective Tissue Disease Screening Questionnaire: A comparative study of various scoring methods. *Lupus.* 2020 (In Press).

OPEN POSITIONS

The **Nigrovic lab** (Brigham and Women's Hospital/Boston Children's Hospital) has a postdoctoral position open in the area of neutrophil biology.

The **Shelef lab** (University of Wisconsin - Madison) has a postdoctoral position open in the area of autoantibodies.