



JBC Monthly Newsletter

October/November 2024

JBC UPDATES

- The last **JBC Synergy Meeting** of 2024 is December 13th 12:30-1:30 by Zoom, featuring:
 - **Taehyeung Kim, PhD** (BCH): Non-coding genetic risk variants modulating Tregs in arthritis
 - **Paul Hoover, MD, PhD** (BWH): Renal macrophages localize to injured sites and induce repair mechanisms in lupus nephritis

JBC MEMBER NEWS

- Congratulations to **Dr. Christian Jacome-Galarza** who received an **NIH R01** grant!

JBC MEMBER PUBLICATIONS

- Rui, X., Alvarez Calderon, F., **Wobma, H.**, Gerdemann, U., Albanese, A., McGuckin, C., Michaelis, K.A., Naqvi, K., Blazar, B.R., Tkachev, V. and Kean, L.S. Human OX40L-CAR-Tregs target activated antigen-presenting cells and effectively control T cell alloreactivity. *Science Translational Medicine*. (Accepted 2024)
- **Hanlon MM**, Smith CM, Canavan M, Neto NGB, Song Q, Lewis MJ, O'Rourke AM, Tynan O, Barker BE, Gallagher P, Mullan R, Hurson C, Moran B, Monaghan MG, Pitzalis C, Fletcher JM, Nagpal S, Veale DJ, Fearon U. Loss of synovial tissue macrophage homeostasis precedes rheumatoid arthritis clinical onset. *Sci Adv*. 2024 Sep 27;10(39):eadj1252. doi: 10.1126/sciadv.adj1252. Epub 2024 Sep 25. PMID: 39321281; PMCID: PMC11423874.
- Kummer LYL, Fernández Blanco L, Kreher C, Bos A, Kuijper LH, Verstegen NJM, van de Sandt CE, Konijn VAL, Duurland MC, Menage C, Jorritsma T, Steenhuis M, Hagen RR, van den Dijssel J, de Jongh R, Ashhurst T, van Gils MJ, Garcia-Vallejo JJ, Claireaux M, Stalman EW, van Dam KPJ, Wieske L, Boekel L, Wolbink G, **Tas SW**, Rispens T, Kuijpers TW, Eftimov F, van Ham SM, Ten Brinke A; T2B! Immunity Against SARS-CoV-2 Study Group. Methotrexate treatment hampers induction of vaccine-specific CD4 T cell responses in patients with IMiD. *RMD Open*. 2024 Oct 7;10(4):e004664. doi: 10.1136/rmdopen-2024-004664. PMID: 39375177; PMCID: PMC11459311.
- Ochoa S, Hsu AP, Oler AJ, Kumar D, Chauss D, van Hamburg JP, van Laar GG, Oikonomou V, Ganesan S, Ferré EMN, Schmitt MM, DiMaggio T, Barber P, Constantine GM, Rosen LB, Auwaerter PG, Gandhi B, Miller JL, Eisenberg R, Rubinstein A, Schussler E, Balliu E, Shashi V, Neth O, Olbrich P, Le KM, Mamia N, Laakso S, Nevalainen PI, Grönholm J, Seppänen MRJ, Boon L, Uzel G, Franco LM, Heller T,

The JBC Team:

- Peter Nigrovic, M.D.
Director (BCH & BWH)
- Jeffrey Sparks, M.D., M.M.Sc.
Multi-PI, Associate Director
- Elizabeth Karlson, M.D., M.S.
Associate Director

Human Biosamples Core:

- Jeffrey Sparks, M.D., M.M.Sc.
Director
- Lauren Henderson, M.D., M.M.Sc.
Associate Director BCH
- Deepak Rao, M.D., Ph.D.
Associate Director

Cellular Systems Core:

- Jim Lederer, Ph.D.
Director
- Kevin Wei, M.D., Ph.D.
Associate Director
- Maria Gutierrez-Arcelus, Ph.D.
Associate Director

Winer KK, Ghosh R, Seifert BA, Walkiewicz M, Notarangelo LD, Zhou Q, Askentijevich I, Gahl W, Dalgard CL, Perera L, Afzali B, **Tas SW**, Holland SM, Lionakis MS. A deep intronic splice-altering AIRE variant causes APECED syndrome through antisense oligonucleotide-targetable pseudoexon inclusion. *Sci Transl Med.* 2024 Sep 18;16(765):eadk0845. doi: 10.1126/scitranslmed.adk0845. Epub 2024 Sep 18. PMID: 39292801.

- Zhang Q, **McDermott GC**, **Juge PA**, Change SH, Vanni KMM, Qian G, Bade KJ, Mueller KT, Kowalski EN, Saavedra AA, **Sparks JA**. Disease-modifying antirheumatic drugs and risk of incident interstitial lung disease among patients with rheumatoid arthritis: A systematic review and meta-analysis. *Semin Arthritis Rheum.* 2024 (In Press).
- Chang SH, **Sparks JA**. Evidence of airways disease as a common and underappreciated extra-articular rheumatoid arthritis manifestation. *Chest.* 2024 (In Press).
- **Sparks JA**, **Wallace ZS**. Immunosuppression, nirmatrelvir-ritonavir, and post-acute sequelae of COVID-19. *Lancet Rheumatol.* 2024 (In Press).
- **Leite CBG**, Ormsby RT, Mekhail J, **Charles JF**, Görtz S, Merkely G, **Lattermann C**. Culturing Osteochondral Explants Under Rotary Shaking or After Removing Bone Marrow Elements Increases Explant Cellular Viability. *Am J Sports Med.* 2024 Jul;52(9):2384-2390. doi: 10.1177/03635465241254401. PMID: 39101736
- Mizuno HL, **Kang JD**, **Mizuno S**, Effects of hydrostatic pressure, osmotic pressure, and confinement on extracellular matrix associated responses in the nucleus pulposus cells ex vivo. *Matrix Biology.* 2024 Dec;134:126-174. doi: 10.1016/j.matbio.2024.10.005.
- Takada E, Mizuno HL, Takeoka Y, **Mizuno S**. Bidirectionally validated in silico and in vitro formation of specific depth zone-derived chondrocyte spheroids and clusters. *Front Bioeng Biotechnol.* 2024 Sep 6;12:1440434. doi: 10.3389/fbioe.2024.1440434. PMID: 39308699; PMCID: PMC11413588.
- **Wobma H**, **Chang JC**, Prockop SE. Releasing our model T - chimeric antigen receptor (CAR) T-cells for autoimmune indications. *Curr Opin Rheumatol.* 2024 Oct 24. doi: 10.1097/BOR.0000000000001062. Epub ahead of print. PMID: 39470062.
- Zhang Q, **McDermott GC**, **Juge PA**, Change SH, Vanni KMM, Qian G, Bade KJ, Mueller KT, Kowalski EN, Saavedra AA, **Sparks JA**. Disease-modifying antirheumatic drugs and risk of incident interstitial lung disease among patients with rheumatoid arthritis: A systematic review and meta-analysis. *Semin Arthritis Rheum.* 2024 Oct 11:69:152561. doi: 10.1016/j.semarthrit.2024.152561. Online ahead of print.
- **Kronzer VL**, Williamson KA, Hayashi K, Atkinson EJ, Crowson CS, Wang X, **Cui J**, Cerhan JR, Sletten JA, **McDermott GC**, **Joerns EK**, Vassallo R, Davis JM, **Sparks JA**. Uncovering specific genetic-respiratory disease endotypes for rheumatoid arthritis risk. *Ann Rheum Dis.* 2024 Nov 1:ard-2024-226391. doi: 10.1136/ard-2024-226391. Online ahead of print.
- Chang SH, Park Y, **McDermott G**, Paudel ML, Hayashi K, Ha YJ, Kim MU, Park CH, Kim JW, Ha JW, Chung SW, Ha JW, Lee SW, Kang EH, Lee YA, Choe JY, Lee EY, **Sparks JA**. Serum biomarkers of pulmonary damage and progression of rheumatoid arthritis-associated interstitial lung disease. *J Rheumatol.* 2024 (In Press).
- Chang SH, **Sparks JA**. Evidence of airways disease as a common and underappreciated extra-articular rheumatoid arthritis manifestation. *Chest.* 2024 (In Press).
- **Sparks JA**, **Wallace ZS**. Immunosuppression, nirmatrelvir-ritonavir, and post-acute sequelae of COVID-19. *Lancet Rheumatol.* 2024 (In Press).
- **McDermott GC**, **Sparks JA**. Tumor necrosis factor inhibitor safety in rheumatoid arthritis-associated interstitial lung disease. *Lancet Rheumatol.* 2024 (In Press).

- Bashar SJ, Zheng Z, Mergaert AM, Adyniec RR, Gupta S, Amjadi MF, McCoy SS, Newton MA, **Shelef MA**. (2024). Limited Biomarker Potential for IgG Autoantibodies Reactive to Linear Epitopes in Systemic Lupus Erythematosus or Spondyloarthritis. *Antibodies (Basel)*. 13(4):87.
- Marks KE, Horisberger A, **Solomon DH, Rao DA**. Defining immune cell phenotypes that distinguish treatment responders and non-responders in RA. *Semin Arthritis Rheum*. Published online November 12, 2024. doi:10.1016/j.semarthrit.2024.152581. PMID: 39562275.
- **Nigrovic PA**. Macrophage activation syndrome. *Arthritis Rheumatol* 2024 Nov 3. doi: 10.1002/art.43052. Online ahead of print.
- **Schnell JT, Laza Briviesca R, Kim T, Charbonnier L-M, Henderson LA, van Wijk F, Nigrovic PA**. The Treg paradox in inflammatory arthritis. *Nat Rev Rheumatol*. 2024 in press.
- **Hoytema van Konijnenburg DP, Nigrovic PA, Zanoni I**. Regional specialization within the mammalian respiratory immune system. *Trends Immunol*. 2024 Nov;45(11):871-891. doi: 10.1016/j.it.2024.09.011. Epub 2024 Oct 21.
- Fautrel B, Mitrovic S, De Matteis A, Bindoli S, Antón J, Belot A, Bracaglia C, Constantin T, Dagna L, Di Bartolo A, Feist E, Foell D, Gattorno M, Georgin-Lavialle S, Giacomelli R, Grom AA, Jamilloux Y, Laskari K, Lazar C, Minoia F, **Nigrovic PA**, Oliveira Ramos F, Ozen S, Quartier P, Ruscitti P, Sag E, Savic S, Truchetet ME, Vastert SJ, Wilhelmer TC, Wouters C, Carmona L, De Benedetti F. EULAR/PReS recommendations for the diagnosis and management of Still's disease, comprising systemic juvenile idiopathic arthritis and adult-onset Still's disease. *Ann Rheum Dis*. 2024 Nov 14;83(12):1614-1627.
- **Chiñas M, Fernandez-Salinas D, Aguiar VRC, Nieto-Caballero VE, Lefton M, Nigrovic PA, Ermann J, Gutierrez-Arcelus M**. Functional genomics implicates natural killer cells in the pathogenesis of ankylosing spondylitis. *HGG Adv*. 2024 Oct 28:100375. doi: 10.1016/j.xhgg.2024.100375. Online ahead of print.

OPEN POSITIONS

The Nigrovic lab (BCH) is seeking new postdoctoral fellows in the fields of (1) non-coding genetic variants in human autoimmunity and (2) megakaryocyte-neutrophil emperipolesis using 2-photon microscopy and other methods. Please direct inquiries to peter.nigrovic@childrens.harvard.edu.

The Chang Lab is hiring for a postdoctoral position in the areas of T cell biology and human and animal models of arthritis. Please direct inquiries to margaret.chang@childrens.harvard.edu.

The Kohlgruber Lab is hiring for a postdoctoral position in the areas of T cell antigen discovery and biology in rheumatoid arthritis. Please direct inquiries to ayano.kohlgruber@childrens.harvard.edu.

Please let us know if you would like your open positions posted here!