

2020 BCH Postdoc Achievements! - Publications

Aarti Sathyanarayana, Mandl lab (CHIP) published: “Nonlinear Analysis of Visually Normal EEGs to Differentiate Benign Childhood Epilepsy with Centrotemporal Spikes” in *Scientific Reports*. 2020. <https://www.nature.com/articles/s41598-020-65112-y>

Achille Broggi & Sreya Ghosh, Zanoni lab (Pediatrics) published “Type III interferons disrupt the lung epithelial barrier upon viral recognition” in *Science*. 2020. <https://science.sciencemag.org/content/early/2020/06/10/science.abc3545>

Alessandra M Ferraro, Harrild lab (Cardiology) published: “Speckle tracking echocardiographically-based analysis of ventricular strain in children: an intervencor comparison” <https://rdcu.be/b4kJk>

Alessia Di Nardo, Sahin lab (Neurobiology) published: “Phenotypic Screen with TSC-Deficient Neurons Reveals Heat-Shock Machinery as a Druggable Pathway for mTORC1 and Reduced Cilia” in *Cell Reports*. 2020. [https://www.cell.com/cell-reports/fulltext/S2211-1247\(20\)30760-9](https://www.cell.com/cell-reports/fulltext/S2211-1247(20)30760-9)

Ali Jannati, Rotenberg lab (Neurology) published 4 papers:

1. “Continuous theta-burst stimulation in children with high-functioning autism spectrum disorder and typically developing children”. In *Frontiers in Integrative Neuroscience*. 2020. <https://www.frontiersin.org/articles/10.3389/fnint.2020.00013/full>
2. “Targeting gamma-related pathophysiology in autism spectrum disorder using transcranial electrical stimulation: Opportunities and challenges” in *Autism Research*. 2020. <https://doi.org/10.1002/aur.2312>
3. “Large-scale analysis of interindividual variability in theta-burst stimulation data: Results from the ‘Big TMS Data Collaboration’” in *Brain Stimulation*. 2020. <https://www.sciencedirect.com/science/article/pii/S1935861X20302163>
4. “EEG markers predictive of epilepsy risk in pediatric cerebral malaria - A feasibility study” in *Epilepsy & Behavior*. 2020. <https://www.sciencedirect.com/science/article/pii/S1525505020307162>

Allison J. Wu, Oken lab (Division of Chronic Disease Research Across the Lifecourse – CoRAL) published: “Associations of DXA -measured abdominal adiposity with cardio-metabolic risk and related markers in early adolescence in Project Viva” in *Pediatric Obesity*. 2020 <https://doi.org/10.1111/ijpo.12704>

Ângela Crespo, Lieberman lab (PCMM) published: "Decidual NK Cells Transfer Granulysin to Selectively Kill Bacteria in Trophoblasts" in *Cell*. 2020 [https://www.cell.com/cell/fulltext/S0092-8674\(20\)30884-9](https://www.cell.com/cell/fulltext/S0092-8674(20)30884-9)

Anindita Basak, Sankaran lab (HemOnc) published: “Control of human hemoglobin switching by LIN28B-mediated regulation of BCL11A translation” in *Nature Genetics*. 2020. <https://www.ncbi.nlm.nih.gov/pubmed/31959994>

Ari Tabaac, Charlton lab (Adolescent Medicine) published: “Sexual orientation-related disparities in healthcare access in three cohorts of U.S. adults.” in *Prev Med*. 2020

<https://www.sciencedirect.com/science/article/pii/S0091743520300232?via%3Dihub>

Catherine (Cat) Lee, Frank lab published: “Targeting the ABC transporter ABCB5 sensitizes glioblastoma to temozolomide-induced apoptosis through a cell-cycle checkpoint regulation mechanism.” *J Biol Chem*. 2020. <https://www.jbc.org/content/early/2020/04/20/jbc.RA120.013778>

Christiane Burton, published: “Method of determining geometric patient size surrogates using localizer images in CT” in *Journal of Applied Clinical Medical Physics (JACMP)*. 2020. <https://aapm.onlinelibrary.wiley.com/doi/full/10.1002/acm2.12814>

Dania Zhivaki, Kagan Lab published: “Inflammasomes within Hyperactive Murine Dendritic Cells Stimulate Long-Lived T Cell-Mediated Anti-tumor Immunity.” In *Cell Reports*. 2020. [https://www.cell.com/cell-reports/fulltext/S2211-1247\(20\)31370-X#.X7QtQhCE6d0.twitter](https://www.cell.com/cell-reports/fulltext/S2211-1247(20)31370-X#.X7QtQhCE6d0.twitter)

Daniel Overbeek & Alexandra Kass (Medical Toxicology Fellow) published 2 papers: “Case series: Adolescent victims of the vaping public health crisis with pulmonary complications” in *Pediatric Pulmonology*. 2020. <https://onlinelibrary.wiley.com/doi/abs/10.1002/ppul.24729>

And a review “A review of toxic effects of electronic cigarettes/vaping in adolescents and young adults” in *Clinical Reviews in Toxicology*. 2020

<https://www.tandfonline.com/eprint/QBGRSRRXDFI7QJEEPTJG/full?target=10.1080%2F10408444.2020.1794443&>

Dheeraj Soni, (Precision Vaccines Program/Infectious Diseases) published 2 papers:

1. “The sixth revolution in pediatric vaccinology: immunoengineering and delivery systems” in *Pediatric Research*. 2020. <https://doi.org/10.1038/s41390-020-01112-y>
2. “Towards Precision Vaccines: Lessons From the Second International Precision Vaccines Conference” in *Frontiers in Immunology*. 2020. <https://doi.org/10.3389/fimmu.2020.590373>

Elena Morrocchi & Dheeraj Soni, Precision Vaccines Program (Infectious Diseases) published: “Neonatal monocytes demonstrate impaired homeostatic extravasation into a microphysiological human vascular model” in *Scientific Reports*. 2020. <https://doi.org/10.1038/s41598-020-74639-z>

Giuseppe Di Caprio, Kirchhausen Lab (PCMM) published: “High-throughput assessment of hemoglobin polymer in single red blood cells from sickle cell patients under controlled oxygen tension” in *PNAS*, 2019. <https://www.pnas.org/content/early/2019/11/22/1914056116?fbclid=IwAR1IA55zMtgfUggqTVAXqLdbMSd4SJWm1LPZKWncVcvPy3BureH8LMKYpwU>

Hakan Coskun, Burns Lab (Cardiology) published a review: “The rationale of using mesenchymal stem cells in patients with COVID-19-related acute respiratory distress syndrome: What to expect” in *Stem Cells Translational Medicine*. 2020

Hani Harb, Chatila lab (Immunology) published: “A regulatory T cell Notch4–GDF15 axis licenses tissue inflammation in asthma” in *Nature Immunology*. 2020.

<https://www.nature.com/articles/s41590-020-0777-3>

Hendrik Wesseling, Waltraud Mair & Mukesh Kumar, Steen Lab (Pathology) published: “Tau PTM Profiles Identify Patient Heterogeneity and Stages of Alzheimer’s Disease” in *Cell*. 2020.

[https://www.cell.com/cell/fulltext/S0092-8674\(20\)31393-3](https://www.cell.com/cell/fulltext/S0092-8674(20)31393-3)

Henry Lee, Hensch & Rotenberg lab (Neurology) made the cover of *PNAS* - September 2020.

<https://www.pnas.org/content/117/38.cover-expansion>

Huan Chen, Alt lab (PCMM) published: “BCR selection and affinity maturation in Peyer’s patch germinal centres” in *Nature*. 2020. <https://www.nature.com/articles/s41586-020-2262-4>

Huixin Xu, Lehtinen lab (Neurobiology) published a commentary: “Cerebrospinal Fluid Magnetic Resonance Imaging: Improving Early Diagnosis of Autism and Other Neurodevelopmental Conditions” in *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*. 2020.

<https://authors.elsevier.com/a/1bM6%7E8jVtutNG0>

James Inkster, Packard lab (Radiology) published: “A non-anhydrous, minimally basic protocol for the simplification of nucleophilic ¹⁸F-fluorination chemistry” in *Scientific Reports*. 2020

<https://www.nature.com/articles/s41598-020-61845-y>

Jin Cui, Lehtinen lab (Pathology) published: “Inflammation of the Embryonic Choroid Plexus Barrier following Maternal Immune Activation” in *Developmental Cell*. 2020.

[https://www.cell.com/developmental-cell/fulltext/S1534-5807\(20\)30722-X](https://www.cell.com/developmental-cell/fulltext/S1534-5807(20)30722-X)

This work has been highlighted by BCH Discoveries

<https://discoveries.childrenshospital.org/choroid-plexus-inflammation/>

Joanne B. Cole, Hirschhorn lab (Endocrinology) published: "Comprehensive genomic analysis of dietary habits in UK Biobank identifies hundreds of genetic associations" in *Nature Communications*. 2020.

<https://www.nature.com/articles/s41467-020-15193-0>

Julie Sesen, Smith lab (Vascular Biology Program) published: “Translation reprogramming by eIF3 linked to glioblastoma resistance” in *NAR Cancer*. 2020.

<https://academic.oup.com/narcancer/article/2/3/zcaa020/5907902>

Jun (Jacob) Hu, Wu lab (PCMM) published: “FDA-approved disulfiram inhibits pyroptosis by blocking gasdermin D pore formation” in *Nature Immunology*. 2020.

<https://www.nature.com/articles/s41590-020-0669-6>

His story was also published by BCH <https://discoveries.childrenshospital.org/disulfiram-sepsis-covid-19/> and HMS <https://hms.harvard.edu/news/smothering-fire>

Junho Kim, Lee lab (Genetics & Genomics) published: “APP gene copy number changes reflect exogenous contamination” in *Nature*. 2020.

<https://www.nature.com/articles/s41586-020-2522-3>

Kai Wang, Melero-Martin (Cardiac Surgery) published “Robust differentiation of human pluripotent stem cells into endothelial cells via temporal modulation of ETV2 with modified mRNA” in *Science Advances*. 2020 <https://advances.sciencemag.org/content/6/30/eaba7606>

Keerthana Deepti Karunakaran (Anesthesiology/Critical Care and Pain Medicine) published 2 papers:

1. “NIRS Measures in Pain and Analgesia: Fundamentals, Features, and Function” in *Neuroscience & Biobehavioral Reviews*. 2020. <https://www.sciencedirect.com/science/article/pii/S0149763420306278>
2. “The laminar pattern of resting state in human cerebral cortex” in *Magnetic Resonance Imaging*. 2020. <https://www.sciencedirect.com/science/article/pii/S0730725X2030624X#!>

And a book chapter: “Review of Resting-State Functional Connectivity Methods and Application in Clinical Conditions”. In Book: Diwadkar V, Eickhoff SD (ed.). Brain Network Dysfunction in Neuropsychiatric Illness: Methods, Applications and Implications. 2021

Kleitton Silva Borges, Breault Lab (Endocrinology) published: “Wnt/ β -catenin activation cooperates with loss of p53 to cause adrenocortical carcinoma in mice” in *Oncogene*. 2020. <https://www.nature.com/articles/s41388-020-1358-5>

L. A. Liggett, Sankaran lab published: “Unraveling Hematopoiesis through the Lens of Genomics” in *Cell*. 2020. <https://www.sciencedirect.com/science/article/abs/pii/S0092867420310722>

Linxiang Yin, Dong lab (Surgery) published: “Characterization of a membrane binding loop leads to engineering botulinum neurotoxin B with improved therapeutic efficacy”. In *PLOS Biology*. 2020. <https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000618>

Matthias Lambert, Kunkel lab (Genetics and Genomics) published: “PDE10A inhibition reduces the manifestation of pathology in DMD zebrafish and represses the genetic modifier PTPNA” in *Molecular Therapy*. 2020. [https://www.cell.com/molecular-therapy-family/molecular-therapy/fulltext/S1525-0016\(20\)30619-5](https://www.cell.com/molecular-therapy-family/molecular-therapy/fulltext/S1525-0016(20)30619-5)

Mehdi Pirouz, Gregory lab (Hematology/Oncology) published: “The Perlman syndrome DIS3L2 exoribonuclease safeguards endoplasmic reticulum-targeted mRNA translation and calcium ion homeostasis” in *Nature Communications*. 2020. <https://www.nature.com/articles/s41467-020-16418-y>

Michael Chary and **Alexander Barbuto** (Toxicology) published: “COVID-19: Therapeutics and Their Toxicities” in *Journal of Medical Toxicology*. 2020. <https://tinyurl.com/ycpeh6pt>

Michael Gebhardt, Dove lab (Infectious Diseases) published: “Widespread targeting of nascent transcripts by RsmA in *Pseudomonas aeruginosa*.” In *PNAS*. 2020. <https://www.pnas.org/content/early/2020/04/23/1917587117>

Mootaz Salman, Kirchhausen Lab (PCMM) published 2 papers:

1. “Targeting Aquaporin-4 Subcellular Localization to Treat Central Nervous System Edema” in *Cell*. 2020.

<https://www.sciencedirect.com/science/article/pii/S0092867420303305>

2. "Design and Validation of a Human Brain Endothelial Microvessel-on-a-Chip Open Microfluidic Model Enabling Advanced Optical Imaging" in *Frontiers in Bioengineering and Biotechnology*. 2020.

https://www.researchgate.net/publication/344465297_Design_and_Validation_of_a_Human_Brain_Endothelial_Microvessel-on-a-Chip_Open_Microfluidic_Model_Enabling_Advanced_Optical_Imaging

Raheel Sayeed, Mandl lab (CHIP) published: "SMART Markers: collecting patient-generated health data as a standardized property of health information technology." in *Nature Digital Medicine*. 2020.
<https://www.nature.com/articles/s41746-020-0218-6>

Richard Smith, Walsh Lab (Genetics & Genomics) published: "Ion Channel Functions in Early Brain Development" in *Trends in Neurosciences*. 2020
[https://www.cell.com/trends/neurosciences/fulltext/S0166-2236\(19\)30226-7](https://www.cell.com/trends/neurosciences/fulltext/S0166-2236(19)30226-7)

Rima El Atrache, Loddenkemper lab (Neurology) published "Photoplethysmography: A measure for the function of the autonomic nervous system in focal impaired awareness seizures" in *Epilepsia*. 2020
<https://pubmed.ncbi.nlm.nih.gov/32710587/>

Ryann Fame, Lehtinen lab (Pathology) published 2 reviews:

1. "Emergence and Developmental Roles of the Cerebrospinal Fluid System" in *Developmental Cell*. 2020. <https://authors.elsevier.com/a/1aYXc5Sx5gjd8t>
2. "Brain Ventricular System and Cerebrospinal Fluid Development and Function: Light at the End of the Tube" in *Bio Essays*. 2020
<https://onlinelibrary.wiley.com/doi/full/10.1002/bies.201900186>

Sarah Ducamp, Fleming lab (Pathology) published: "Mutations in the iron-sulfur cluster biogenesis protein HSCB cause congenital sideroblastic anemia" in the *Journal in Clinical Investigation*. 2020
<https://www.jci.org/articles/view/135479/ga>

Shayan Hosseinzadeh, Kiapour lab (Orthopedic Surgery) published 4 papers:

1. "Evolutionary Selection and Constraint on Human Knee Chondrocyte Regulation Impacts Osteoarthritis Risk." in *Cell*. 2020 <https://www.ncbi.nlm.nih.gov/pubmed/?term=32220312>
2. "Age-Related Changes in ACL Morphology During Skeletal Growth and Maturation Are Different Between Females and Males". *J Orthop Res*. 2020.

<https://onlinelibrary.wiley.com/doi/abs/10.1002/jor.24748>

3. "What Is the Accuracy and Reliability of the Peritubercle Lucency Sign on Radiographs for Early Diagnosis of Slipped Capital Femoral Epiphysis Compared With MRI as the Gold Standard?" in *Clin Orthop Relat Res*. 2020

<https://www.ncbi.nlm.nih.gov/pubmed/?term=31977443>

4. "Age- and Sex-Specific Morphologic Changes in the Metaphyseal Fossa Adjacent to Epiphyseal Tubercle in Children and Adolescents without Hip Disorders." in *J Orthop Res*. 2020.

<https://www.ncbi.nlm.nih.gov/pubmed/?term=PMID%3A+32091139>

Suya Wang, Pu lab (Cardiology) published: “AAV Gene Therapy Prevents and Reverses Heart Failure in a Murine Knockout Model of Barth Syndrome” in *Circulation Research*. 2020.

<https://www.ahajournals.org/doi/10.1161/CIRCRESAHA.119.315956>

Tamara Itzel Martinez (Adolescent Substance Use and Addiction Fellow) published: “A community-based model of HIV care for men who have sex with men and transgender women in Chicago” in *International Journal of STD and AIDs*. 2020.

<https://www.contagionlive.com/news/communitybased-hiv-care-for-msm-transgender-women-as-effect-ive-as-hospitalbased-care> and she also presented a second abstract of this paper at the Infectious

Diseases Society of America meeting in Washington, DC in October 2019.

Theo van den Broek, Carroll Lab (PCMM) published 3 papers:

1. “Coronavirus: postdoc winners need paid extensions” in *Nature*. 2020

<https://www.nature.com/articles/d41586-020-02087-w>

2. “How I started a journal for postdoctoral researchers” in *Nature*. 2020.

<https://www.nature.com/articles/d41586-020-03498-5>

3. “How I started a journal for postdoctoral researchers” in *Nature*. 2020.

<https://www.nature.com/articles/d41586-020-03498-5>

Wardiya Afshar Saber, Sahin lab (Neurology) published a review: “Recent advances in human stem cell-based modeling of Tuberous Sclerosis Complex” in *Molecular Autism*. 2020

<https://molecularautism.biomedcentral.com/articles/10.1186/s13229-020-0320-2>

Xuefei Zhang, Alt lab (PCMM) published 2 papers:

1. “Fundamental roles of chromatin loop extrusion in antibody class switching.” in *Nature*, 2019.

<https://www.ncbi.nlm.nih.gov.ezp-prod1.hul.harvard.edu/pubmed/31666703>

2. “The fundamental role of chromatin loop extrusion in physiological V(D)J recombination.” in

Nature, 2019. <https://www.ncbi.nlm.nih.gov.ezp-prod1.hul.harvard.edu/pubmed/31511698>

Wei Zhang, Kohane lab (Anesthesiology) published 2 papers:

1. “Functionalized multiarmed polycaprolactones as biocompatible tissue adhesives.” In *ACS Applied Materials & Interfaces*. 2020. <https://pubs.acs.org/doi/10.1021/acsami.0c03478>

2. “Light-triggered release of conventional local anesthetics from a macromolecular prodrug for on-demand local anesthesia.” in *Nature Communications* 2020.

Yohei Tomita, Smith lab (Ophthalmology) published 9 papers:

1. “Long-Acting FGF21 Inhibits Retinal Vascular Leakage in In Vivo and In Vitro Models” in *IJMS* 2020. <https://www.mdpi.com/1422-0067/21/4/1188>

2. “Pemafibrate Prevents Retinal Pathological Neovascularization by Increasing FGF21 Level in a Murine Oxygen-Induced Retinopathy Model” in *IJMS* 2019. <https://www.mdpi.com/1422-0067/20/23/5878>

3. “Free fatty acid receptor 4 activation protects against choroidal neovascularization in mice”. *Angiogenesis*. 2020 <https://www.ncbi.nlm.nih.gov/pubmed/32140799>

4. “Pemafibrate Protects Against Retinal Dysfunction in a Murine Model of Diabetic Retinopathy” in *Int. J. Mol. Sci.* 2020. <https://www.mdpi.com/1422-0067/21/17/6243>

5. "An Ex Vivo Choroid Sprouting Assay of Ocular Microvascular Angiogenesis" in *J Vis Exp*. 2020. <https://pubmed.ncbi.nlm.nih.gov/32831307/>
6. "Wnt signaling activates MFSD2A to suppress vascular endothelial transcytosis and maintain blood-retinal barrier" in *Science Advances*. 2020. <https://advances.sciencemag.org/content/6/35/eaba7457/tab-article-info>
7. "PPAR α Agonist Oral Therapy in Diabetic Retinopathy" in *Biomedicines*. 2020. <https://www.mdpi.com/2227-9059/8/10/433>
8. "IGF1, serum glucose, and retinopathy of prematurity in extremely preterm infants" in *JCI Insight*. 2020. <https://insight.jci.org/articles/view/140363>
9. "Vitreous metabolomics profiling of proliferative diabetic retinopathy" in *Diabetologia*. 2020. <https://pubmed.ncbi.nlm.nih.gov/33099660/>

Yongfei Cai, Bing Chen lab (Molecular Medicine) published: "Distinct conformational states of SARS-CoV-2 spike protein" in *Science*. 2020.

<https://science.sciencemag.org/content/early/2020/07/20/science.abd4251>

and was also highlighted by Boston Children's Hospital Discoveries <https://discoveries.childrenshospital.org/SARS-CoV-2-spike-protein>

Yu-San Huoh, Hur lab (PCMM) published: "Dual functions of Aire CARD multimerization in the transcriptional regulation of T cell tolerance." In *Nature Communications*. 2020. <https://doi.org/10.1038/s41467-020-15448-w>

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