



Center for Interdisciplinary Study of  
Inflammatory Intestinal Disorders (C-IID)

# Newsletter

Winter 2023

## Bana Jabri is the New C-IID Director

Bana Jabri, MD, PhD, Sarah and Harold Lincoln Thompson Distinguished Service Professor; Vice Chair for Research (Basic); Chair, Committee on Immunology, Director for Human Immunology, is the new director for the UChicago NIH Digestive Diseases Research Core Center for Interdisciplinary Study of Inflammatory Intestinal Disorders (C-IID). Dr. Jabri previously served as co-Director for the DDRCC, which will now be called C-IID, with Eugene B. Chang, MD for 15 years and in 2020 renewed the NIH P30 DDRCC grant as the director. Dr. Chang now serves as the C-IID co-director.



Dr. Jabri's goals are to increase the member usage of the Research Cores by increasing the C-IID visibility and providing innovative, state-of-the-art services; to continuously promote collaborative research in digestive diseases; and to increase diversity, equity and inclusion efforts.

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# Research Cores

Learn more about the Research Cores that are available to the C-IID members.

**Integrative Clinical and Biospecimen Core (Sonia Kupfer, MD, Joel Pekow, MD, Christopher Weber, MD, PhD):** Offers patient registry, tissue biobanking facilities, and support in designing clinical studies in areas such as human gut microbiomes in health and disease, IBD, gastroenterology, and hepatology, and celiac diseases.

**Host-Microbe Core (Alexander Chervovsky, MD, PhD, Betty Theriault, DVM, DACLAM, Ran Blekhman, PhD):** Provides unique approaches to the study of host-microbe interactions, including cell/tissue models, gnotobiotic mouse technologies, metagenomics, and approaches for structural and functional profiling of complex microbial communities. The Core also offers bioinformatics analysis and interpretation of microbiome data and other genomic data in the context of digestive disorders. This includes, but not limited to, processing and analysis of data generated by 16S rRNA sequencing, metagenomic shotgun sequencing, metabolomics, transcriptomics, and epigenomics, as well as integration of various datasets using various statistical and computational approaches.

**Tissue Engineering and Cell Models Core (Eugene B. Chang, MD, John Alverdy, MD):** Offers unique cell and tissue models, 2D and 3D enteroids/colonoids, and mouse models along with molecular and genetic engineering approaches to develop new model systems.

**Multiparametric Host Cell Analysis Core (Luis Barreiro, PhD, Bana Jabri, MD, PhD):** Provides expert consultation, training, experimental and bioinformatic support in the use of the growing array of highly specialized cutting-edge technologies that are available for flow cytometry and genomic analysis, specifically related to the study of gastrointestinal disease.

For more information visit the [C-IID website: ciid.uchicago.edu](http://ciid.uchicago.edu)

*Continue to check the website as it is in the process of being updated to include listing of services offered and request forms.*

# News And Announcements

## UChicago Animal Resources Center Receives \$7.9-million Grant from National Institutes of Health

The National Institutes of Health awarded the Animal Resources Center a \$7.9-million grant that will fund the expansion of the Gnotobiotic Research Animal Facility (GRAF). The GRAF is utilized in the C-IID Host-Microbe Core and is available for members' use. The grant was submitted by George Langan, DVM and Betty Theriault, DVM (Host-Microbe Core Co-director). [Read more.](#)

## Chuan He Wins the 2023 Wolf Prize

C-IID member, Chuan He, PhD, John T. Wilson Distinguished Service Professor in the Department of Chemistry wins the 2023 Wolf Prize in Chemistry. The Wolf Prize, the equivalent to Israel's Nobel Prize, was awarded to Dr. He for his pioneering work in RNA modification. [Read more.](#)



## Joash Lake Receives 2022 Biological Sciences Division Diversity, Equity, and Inclusion Award

Joash Lake, Ph.D. candidate in the Committee on Immunology, in the laboratory of Eugene B. Chang, MD was the recipient of the 2022 BSD Diversity, Equity, and Inclusion award. Joash was awarded for his service and contributions to the university and community at large. Joash serves on the Board of the Black Grad Coalition, where he helps to create inclusive and safe spaces for black professionals at the university and works with non-profit organizations, such as Target Hope, that aim to increase the number of under-represented communities to pursue higher education. He has also served as a CAMPIL mentor, a program that aims to help increase the recruitment of minority students into STEM fields.





# News And Announcements

## Dimitra Skondra Receives the Edward N. & Della L. Thome Memorial Foundation Award

C-IID member Dimitra Skondra, MD, PhD, is the recipient of the the Edward N. & Della Thome Memorial Foundation Award. Dr. Skondra will investigate the impact of a Mediterranean diet on Age-Related Macular Degeneration, the gut microbiome and metabolites. Dr. Skondra's research will utilize the C-IID Research Cores with her collaboration with Core directors, Eugene Chang, MD (Tissue Engineering Cell Models Core) and Betty Theriault, DVM (Host-Microbe Core). [Read more.](#)



## Congratulations

C-IID members Bana Jabri, MD, PhD, Sonia Kupfer, MD and Luis Barreiro, PhD in collaboration with Joseph Murray, MD (Mayo Clinic) and Rustem Ismagilov, PhD (Caltech) were awarded a NIH RC2 grant for "Mechanisms underlying tissue healing and destruction in celiac disease".

Tao Pan, PhD (PI), Marc Bissonnette, MD (co-I), and Ben Shogan, MD (co-I) were awarded a 3 year NIH R23 grant for their submission entitled: "Transfer RNA sequencing and application to cancer research and clinics".

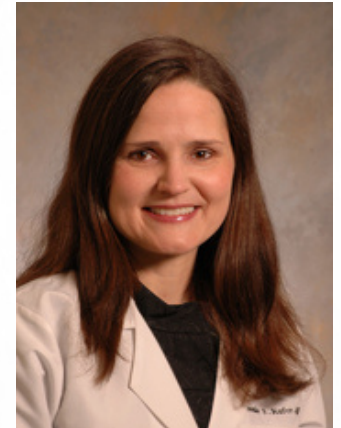
## Pilot And Feasibility Award

The C-IID and the Duchossois Family Institute (DFI) joined in partnership to award 5 Pilot and Feasibility awards of \$50,000 each for research on digestive health and diseases. Proposals that involved studies of inflammatory bowel diseases (IBD) and related areas of intestinal inflammation, the gut immune system, the gut microbiome, host-microbe interactions, microbiome-based biotherapeutics, hepatic and digestive functions, host-microbe metabolism, and epithelial biology/developmental regulation of the gut were given special consideration. Please consider applying for the 2023-2024 cycle. The **RFA will be disseminated in July.**

# 2023 P&F Awardees



**Nicolas Chevrier, PhD**, Assistant Professor, Pritzker School of Molecular Engineering, was awarded for "Organism-wide analysis of the digestive enzyme storm caused by acute pancreatitis".



**Sonia Kupfer, MD**, Associate Professor of Medicine, Department of Medicine, Section of Gastroenterology with co-I, Ran Blekhman, PhD, were awarded for "Role of bile acids in colorectal cancer disparities".



**Megan McNerney, MD, PhD**, Associate Professor, Department of Pediatrics Hematology/Oncology and Pathology, was awarded for "Pilot studies for a novel regulator of human intestinal epithelium regeneration".



**Sebastian Pott, PhD**, Assistant Professor in the Department of Medicine, Section of Genetic Medicine, was awarded for "Identification of cell-type specific transcriptional and epigenetic changes in the intestinal epithelium associated with chronic inflammation".



**Roshni Roy Chowdhury, PhD**, Assistant Professor, Pritzker School of Medicine, with co-Investigators, Lindsay Alpert, MD and Eric Pamer, MD were awarded for "The microbiota- T cell axis in the link between the appendix and ulcerative colitis".

# Recent C-IID Publications

**REMEMBER!**

Please acknowledge support from the UChicago DDRCC, Center for Interdisciplinary Study of Inflammatory Intestinal Disorders (NIDDK P30 DK042086) in your publication and presentations (include the 0 in front of the 4).

[Khan AA, Yurkovetskiy L, O'Grady K, Pickard JM, de Pooter R, Antonopoulos DA, Golovkina T, Chervonsky A. Polymorphic Immune Mechanisms Regulate Commensal Repertoire. Cell Rep. 2019 Oct 15;29\(3\):541-550.e4](#)

[Liu CY, Girish N, Gomez ML, Dubé PE, Washington MK, Simons BD, Polk DB. Transitional Anal Cells Mediate Colonic Re-epithelialization in Colitis. Gastroenterology. 2022 Jun;162\(7\):1975-1989. doi: 10.1053/j.gastro.2022.02.031. Epub 2022 Feb 25.](#)

[Spring J, Khan AA, Lara S, O'Grady K, Wilks J, Gurbuxani S, Erickson S, Fischbach M, Jacobson A, Chervonsky A, Golovkina T. Gut commensal bacteria enhance pathogenesis of a tumorigenic murine retrovirus. Cell Rep. 2022 Sep 13;40\(11\):111341.](#)

[Rai V, Traboulsi C, Silfen A, Ackerman MT, Erondü AI, Karpın JE, Gulotta G, Rubin DT. Identification of Risk Factors for Coexisting Sinusitis and Inflammatory Bowel Disease. Crohns Colitis 360. 2021 Jul;3\(3\):otab054.](#)

[Krugliak Cleveland N, Rai V, El Jurdi K, Rao SS, Giurcanu MC, Rubin DT. Ulcerative Colitis Patients Have Reduced Rectal Compliance Compared With Non-Inflammatory Bowel Disease Controls. Gastroenterology. 2022 Jan;162\(1\):331-333.e1.](#)

[Abadie V, Khosla C, Jabri B. A Mouse Model of Celiac Disease. Curr Protoc. 2022 Aug;2\(8\):e515.](#)

[Randolph HE, Fiege JK, Thielen BK, Mickelson CK, Shiratori M, Barroso-Batista J, Langlois RA, Barreiro LB. Genetic ancestry effects on the response to viral infection are pervasive but cell type specific. Science. 2021 Nov 26;374\(6571\):1127-1133.](#)

[Frazier K, Kambal A, Zale EA, Pierre JF, Hubert N, Miyoshi S, Miyoshi J, Ringus DL, Harris D, Yang K, Carroll K, Hermanson JB, Chlystek JS, Overmyer KA, Cham CM, Musch MW, Coon JJ, Chang EB, Leone VA. High-fat diet disrupts REG3γ and gut microbial rhythms promoting metabolic dysfunction. Cell Host Microbe. 2022 Jun 8;30\(6\):809-823.e6.](#)

[Akiyama S, Ollech JE, Traboulsi C, Rai V, Glick LR, Yi Y, Runde J, Olivas AD, Weber CR, Cohen RD, Olorategui KBS, Hurst RD, Umanskiy K, Shogan BD, Rubin MA, Dalal SR, Sakuraba A, Pekow J, Chang EB, Hart J, Hyman NH, Rubin DT. Histopathology of Colectomy Specimens Predicts Endoscopic Pouch Phenotype in Patients with Ulcerative Colitis. Dig Dis Sci. 2022 Aug;67\(8\):4020-4031.](#)

[Shan Y, Lee M, Chang EB. The Gut Microbiome and Inflammatory Bowel Diseases. Annu Rev Med. 2022 Jan 27;73:455-468. doi: 10.1146/annurev-med-042320-021020. Epub 2021 Sep 23. PMID: 34555295.](#)

[Lu J, Lu L, Yu Y, Oliphant K, Drobyshevsky A, Claud EC. Early preterm infant microbiome impacts adult learning. Sci Rep. 2022 Feb 28;12\(1\):3310. doi: 10.1038/s41598-022-07245-w.](#)

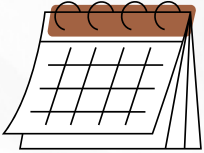
[Leone VA, Onishi KG, Kennedy M, Riggie JP, Pierre JF, Maneval AC, Spedale MN, Theriault BR, Chang EB, Prendergast BJ. Atypical behavioral and thermoregulatory circadian rhythms in mice lacking a microbiome. Sci Rep. 2022 Aug 25;12\(1\):14491.](#)

[Zhang JY, Xie B, Barba H, Nadeem U, Movahedan A, Deng N, Spedale M, D'Souza M, Luo W, Leone V, Chang EB, Theriault B, Sulakhe D, Skondra D. Absence of Gut Microbiota Is Associated with RPE/Choroid Transcriptomic Changes Related to Age-Related Macular Degeneration Pathobiology and Decreased Choroidal Neovascularization. Int J Mol Sci. 2022 Aug 26;23\(17\):9676.](#)

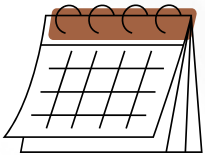
[Malik A, Jabri B. Innate riddle of CD4+ T cells and the control of enteric infections. Immunity. 2022 Jul 12;55\(7\):1145-1147.](#)

[Earley ZM, Lisicka W, Sifakis JJ, Aguirre-Gamboa R, Kowalczyk A, Barlow JT, Shaw DG, Discepolo V, Tan IL, Gona S, Ernest JD, Matzinger P, Barreiro LB, Morgun A, Bendelac A, Ismagilov RF, Shulzhenko N, Riesenfeld SJ, Jabri B. GATA4 controls regionalization of tissue immunity and commensal-driven immunopathology. Immunity. 2023 Jan 10;56\(1\):43-57.e10. doi: 10.1016/j.immuni.2022.12.009.](#)

# Upcoming Events



Please attend the weekly GI Research Conference scheduled Thursdays at noon. Seminars are given in a hybrid format with in-person and Zoom login options. Information is sent out via email.



The C-IID will host a Scientific Symposium that will be a combination of scientific talks and a showcase of our Research Cores' services. More information will be disseminated in future correspondence.



## **GOT NEWS TO SHARE?**

Contact the C-IID Program Administrator

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