

# *CU-DLDRC Winter 2023-24 Newsletter*

## **Columbia University Digestive and Liver Diseases Research Center**



**Robert Schwabe, MD**  
**Director, CU-DLDRC**  
**Professor of Medicine**

**Columbia University Medical Center**



**Timothy Wang, MD**  
**Co-Director, CU-DLDRC**  
**Chief, Digestive & Liver Diseases**

**Silberberg Professor of Medicine**  
**Columbia University Medical Center**



**Rebecca Haeusler, PhD**  
**Co-Director, CU-DLDRC**

**Associate Professor of Pathology**  
**Columbia University Medical Center**



*Welcome to our Winter 2023-24 Columbia University Digestive & Liver Diseases Newsletter!*  
We hope your New Year is off to a great start and that things are well! We are enthusiastic about reporting our Center's activities.



**Columbia University**

Department of Medicine

DIVISION OF DIGESTIVE AND LIVER DISEASES

---

### *CU-DLDRC Promotions*

*Benjamin Lebwohl, MD, MPH* was promoted to Professor of Medicine and Epidemiology at Columbia University Irving Medical Center.

*Daniel Freedberg, MD, MS*, was promoted to Associate Professor of Medicine in the Division of Digestive and Liver Diseases at Columbia.

***Julian Abrams, MD, MS*** was promoted to Professor of Medicine in the Division of Digestive and Liver Diseases at Columbia.

### ***CU-DLDRC Faculty - Additional appointments***

***Daniel Freedberg, MD***, was appointed as the Deputy Director of a 3-year grant for pharmacoepidemiology support from Kyowa Kirin, a leading drug manufacturing company (PI: A. Neugut). Dr. Freedberg, MD, was also appointed as the Data Safety Monitoring Officer for the NIH/NIDDK U01 DK136523 (GLUTECH trial, PI: Benjamin Lebwohl, MD).

### ***CU-DLDRC Honors***

***Rebecca Haeusler, PhD***, was elected the Chair of the Board of the Deuel Conference on Lipids.

***Lale Ozcan, MD***, Assistant Professor and DLDRC member was elected to serve on the Board of Directors for the ASBMB (American Society for Biochemistry and Molecular Biology) Deuel Conference on Lipid Metabolism.

***Timothy Wang, MD***, was one of a select group of seventeen Nationally Recognized 2023 Outstanding Investigator Awardees from the NCI. The official notification from NCI was announced on their website on January 5<sup>th</sup>, 2024.

<https://www.cancer.gov/grants-training/grants-funding/funding-opportunities/oia/award-recipients>

### ***CU-DLDRC Grants***

***Rebecca Haeusler, PhD***, received an NIDDK grant for her project titled “Insulin regulation of hepatic transport (2023-2027)”. Dr Haeusler was successful in competitively renewing her NIDDK grant titled “Bile acid composition and insulin sensitivity.” Dr Haeusler also received the one-year Berrie Pretranslational award for her project “The cardio-hepatic axis in heart failure and diabetes.”

***Benjamin Lebwohl, MD, MS***, received a five-year NIDDK-U01 grant along with Randi

Wolf, PhD (Teacher's College Columbia) for their project titled: "Evaluation of Novel Technologies to Improve Clinical Management of Celiac Disease: The GLUTECH Trial"

**Lale Ozcan, MD**, received an NIH-NHLBI R01 grant for her project titled "Hepatic Rap1a in cholesterol homeostasis"

**Anil Rustgi, MD** in partnership with Kwok-Kin Wong, MD, PhD, NYU Langone Health, received the 2023 Stand Up to Cancer Grant. The \$2.5M grant is for a three-year period that commenced in July 2023.

**Hongxue Shi, MD**, an Associate Research Scientist in **Dr. Ira Tabas's** lab was awarded a K99 (K99DK13701). Dr Shi also received a travel award from AASLD for the November meeting in Boston, MA.

**Brea Tinsley**, a graduate student in **Lale Ozcan's** lab received the Research Supplement to Promote Diversity in Science from the American Heart Association which provides \$65,106 over 2 years, for her project "Hepatic Rap1a Activators in PCSK9 and Atherosclerosis Regulation"

**Timothy Wang, MD**, successfully renewed his NCI R35 grant for a seven-year period, the link with details is provided in this newsletter under Honors and Awards. Dr. Wang's NIDDK training grant has also received a high score, and we await further information from NIH on this award.

## *Select Publications*

### *Julian Abrams*

Solfisburg QS, Baldini F, Baldwin-Hunter B, Austin GI, Lee HH, Park H, Freedberg DE, Lightdale CJ, Korem T, **Abrams JA**. The Salivary Microbiome and Predicted Metabolite Production are Associated with Barrett's Esophagus and High Grade Dysplasia or Adenocarcinoma. *Cancer Epidemiol Biomarkers Prev*. 2023 Dec 20. doi: 10.1158/1055-9965.EPI-23-0652. Online ahead of print. PMID: 38117184

### *Nicholas Arpaia*

Savage TM, Fortson KT, de Los Santos-Alexis K, Oliveras-Alsina A, Rouanne M, Rae SS, Gamarra JR, Shayya H, Kornberg A, Cavero R, Li F, Han A, Haeusler RA, Adam J, **Schwabe RF**, Arpaia N. Amphiregulin from regulatory T cells promotes liver fibrosis and insulin resistance in non-alcoholic steatohepatitis. *Immunity*. 2024 Jan 29:S1074-7613(24)00034-7. doi: 10.1016/j.immuni.2024.01.009. PMID: 38309273

### ***Dominique Bailey***

Chehade M, McGowan EC, Wright BL, Muir AB, Klion AD, Furuta GT, Jensen ET, Bailey DD. Barriers to Timely Diagnosis of Eosinophilic Gastrointestinal Diseases. *J Allergy Clin Immunol Pract.* 2024 Feb;12(2):302-308. doi: 10.1016/j.jaip.2023.12.020. PMID: 38110118

Chehade M, Furuta G, Klion A, Abonia JP, Aceves S, Bose P, Collins MH, Davis C, Dellon ES, Eickel G, Falk G, Gupta S, Hiremath G, Howard A, Jensen ET, Kesh S, Khoury P, Kocher K, Kodroff E, Kyle S, Mak N, McCoy D, Mehta P, Menard-Katcher P, Mukkada V, Paliana A, Rothenberg M, Sable K, Schmitt C, Scott M, Spergel J, Strobel MJ, Wechsler JB, Yang GY, Zicarelli A, Muir AB, Wright BL, Bailey DD. Enhancing diversity, equity, inclusion, and accessibility in eosinophilic gastrointestinal disease research: the consortium for eosinophilic gastrointestinal disease researchers' journey. *Ther Adv Rare Dis.* 2023 Aug 14;4:26330040231180895. PMID: 37588777

### ***William Blaner***

Calderon RM, Golczak M, Paik J, Blaner WS. Dietary Vitamin A Affects the Function of Incretin-Producing Enteroendocrine Cells in Male Mice Fed a High-Fat Diet. *J Nutr.* 2023 Oct;153(10):2901-2914. doi: 10.1016/j.tjnut.2023.08.030. Epub 2023 Aug 28. PMID: 37648113.

### ***Chia-Wei Cheng***

Qiu Y, Phanor SK, Pyo S, Cheng CW. Modeling Notch Activity and Lineage Decisions Using Intestinal Organoids. *Methods Mol Biol.* 2023;2650:123-132. doi: 10.1007/978-1-0716-3076-1\_10. PMID: 37310628

### ***Eunhee Choi***

Park J, Hall C, Hubbard B, LaMoia T, Gaspar R, Nasiri A, Li F, Zhang H, Kim J, Haeusler RA, Accili D, Shulman GI, Yu H, Choi E. MAD2-Dependent Insulin Receptor Endocytosis Regulates Metabolic Homeostasis. *Diabetes.* 2023 Dec 1;72(12):1781-1794. PMID: 37725942

### ***Daniel Freedberg***

Hembree A, Shen B, **Freedberg DE.** Association Between Mucosectomy and Endoscopic Outcomes in Patients with Ileal Pouch-Anal Anastomosis. *Gastroenterology Report*, Accepted.

Shamalov L, Heath M, Lynch E, Green DA, Gomez-Simmonds A, **Freedberg DE.** Timing and clinical risk factors for early acquisition of gut pathogen colonization with multidrug resistant organisms in the intensive care unit. *Gut Pathog.* 2024 Feb 21;16(1):10. PMID: 38383457

Varma S, Trudeau SJ, Li J, Freedberg DE. Proton pump Inhibitors and Risk of Enteric Infection in Inflammatory Bowel Disease: A Self-controlled Case Series. *Inflamm Bowel Dis.* 2024 Jan 5;30(1):38-44. doi: 10.1093/ibd/izad035. PMID: 36917215

### ***Rebecca Haeusler***

Lee I, Nandakumar R, **Haeusler RA.** Alteration of serum bile acids in amyotrophic lateral sclerosis. *Lipids.*

2024 Feb 6. doi: 10.1002/lipd.12390. Online ahead of print. PMID: 38320749

Izquierdo MC, Harris M, Shanmugarajah N, Zhong K, Ozcan L, Fredman G, **Haeusler RA**. Insulin sensitization by hepatic FoxO deletion is insufficient to lower atherosclerosis in mice. *bioRxiv* [Preprint]. 2023 Oct 18:2023.10.14.562366. PMID: 37905094

Higuchi S, Wood C, Nasiri RH, Giddla LJ, Molina V, Diarra R, DiPatrizio NV, Kawamura A, **Haeusler RA**. The 16 $\alpha$ -hydroxylated Bile Acid, Pythocholic Acid Decreases Food Intake and Increases Oleoylethanolamide in Male Mice. *Endocrinology*. 2023 Aug 1;164(9):bqad116. doi: 10.1210/endo/bqad116. PMID: 37490843.

### *Arnold Han*

Kornberg A, Botella T, Moon CS, Rao S, Gelbs J, Cheng L, Miller J, Bacarella AM, García-Vilas JA, Vargas J, Yu X, Krupska I, Bush E, Garcia-Carrasquillo R, Lebwohl B, Krishnareddy S, Lewis S, Green PHR, Bhagat G, Yan KS, **Han A**. Gluten induces rapid reprogramming of natural memory  $\alpha\beta$  and  $\gamma\delta$  intraepithelial T cells to induce cytotoxicity in celiac disease. *Sci Immunol*. 2023 Jul 21;8(85):eadf4312. doi: 10.1126/sciimmunol.adf4312. Epub 2023 Jul 14. PMID: 37450575

### *Chin Hur*

Ryder JR, Lim F, **Hur C**. The Economic Value of Treating Pediatric Obesity: Costs Are Not Keeping Up With Efficacy. *JAMA Netw Open*. 2023 Oct 2;6(10):e2336337. doi: 10.1001/jamanetworkopen.2023.36337. PMID: 37824149

### *Ivaylo Ivanov*

Brockmann L, Tran A, Huang Y, Edwards M, Ronda C, Wang HH, Ivanov II. Intestinal microbiota-specific Th17 cells possess regulatory properties and suppress effector T cells via c-MAF and IL-10. *Immunity*. 2023 Dec 12;56(12):2719-2735.e7. Epub 2023 Nov 30. PMID: 38039966

### *Minah Kim*

Lee E, O'Keefe S, Leong A, Park HR, Varadarajan J, Chowdhury S, Hiner S, Kim S, Shiva A, Friedman RA, Remotti H, Fojo T, Yang HW, Thurston G, **Kim M**. Angiopoietin-2 blockade suppresses growth of liver metastases from pancreatic neuroendocrine tumors by promoting T cell recruitment. *J Clin Invest*. 2023 Oct 16;133(20):e167994. PMID: 37843277

### *Benjamin Lebwohl*

Ching CK, Lyudmer M, Lewis S, Krishnareddy S, Green PHR, **Lebwohl B**. Predictors of Subsequent Celiac Disease Seropositivity in Patients Diagnosed with Duodenal Villus Atrophy on Upper Endoscopy. *Dig Dis Sci* 2023; doi: 10.1007/s10620-023-08217-4.

Zylberberg HM, Miller EBP, Ratner A, Hammill BG, Mehta P, Alesci S, **Lebwohl B**. Correlations Between Relative Prevalence of Celiac Disease and Sociodemographic Variables in the United States. *Am J*

*Gastroenterol.* 2023; doi: 10.14309/ajg.0000000000002541.

### *Mercedes Martinez*

Kang E, Liou P, **Martinez M.** A Call to Action: Furthering the Utilization of Technical Variants Pediatric Liver Transplantation Through Increased Awareness and Education *Transplantation.* 2024 Mar 1;108(3):605-606. PMID: 37635279

Kang E, Lobritto S, **Martinez M.** Weighing in on organ allocation for tweens. *Liver Transpl.* 2024 Mar 1;30(3):240-241. PMID: 38009925

### *Nandan Nerurkar*

Loffet EA, Durel JF, Gao J, Kam R, Lim H, **Nerurkar NL.** Elastic fibers define embryonic tissue stiffness to enable buckling morphogenesis of the small intestine. *Biomaterials.* 2023 Dec;303:122405. doi: 10.1016/j.biomaterials.2023.122405. PMID: 38000151

Oikonomou P, Cirne HC, **Nerurkar NL.** A chemo-mechanical model of endoderm movements driving elongation of the amniote hindgut. *Development.* 2023 Nov 15;150(22):dev202010. doi: 10.1242/dev.202010. Epub 2023 Nov 16. PMID: 37840469

### *Kenneth Olive*

Hasselluhn MC, Decker-Farrell AR, Vlahos L, Thomas DH, Curiel-Garcia A, Maurer HC, Wasko UN, Tomassoni L, Sastra SA, Palermo CF, Dalton TC, Ma A, Li F, Tolosa EJ, Hibshoosh H, Fernandez-Zapico ME, Muir A, Califano A, **Olive KP.** Tumor Explants Elucidate a Cascade of Paracrine SHH, WNT, and VEGF Signals Driving Pancreatic Cancer Angiosuppression. *Cancer Discov.* 2024 Feb 8;14(2):348-361. doi: 10.1158/2159-8290.CD-23-0240.

### *Lale Ozcan*

Wang Y, Tinsley B, Spolitu S, Zadroga JA, Agarwal H, Sarecha AK, **Ozcan L.** Geranylgeranyl Isoprenoids and Hepatic Rap1a Regulate Basal and Statin-Induced Expression of PCSK9. *J Lipid Res.* 2024 Feb 1:100515. doi: 10.1016/j.jlr.2024.100515. PMID: 38309417

Agarwal H, Tinsley B, Sarecha AK, **Ozcan L.** Rap1 in the Context of PCSK9, Atherosclerosis, and Diabetes. *Curr Atheroscler Rep.* 2023 Dec;25(12):931-937. doi: 10.1007/s11883-023-01162-7. Epub 2023 Nov 18. PMID: 37979063

### *Utpal Pajvani*

Suda N, Bartolomé A, Liang J, Son J, Yagishita Y, Siebel C, Accili D, Ding H, **Pajvani UB.** Beta-cell Jagged1 is sufficient but not necessary for islet Notch activity and insulin secretory defects in obese mice. *Mol Metab.* 2024 Feb 3;81:101894. doi: 10.1016/j.molmet.2024.101894. Online ahead of print. PMID: 38311286

Cook JR, Hawkins MA, **Pajvani UB**. Liver insulinization as a driver of triglyceride dysmetabolism. *Nat Metab*. 2023 Jul;5(7):1101-1110. doi: 10.1038/s42255-023-00843-6. PMID: 37460842

### *Peter Sims*

Levitin HM, Zhao W, Bruce JN, Canoll P, **Sims PA**. Consensus scHPF Identifies Cell Type-Specific Drug Responses in Glioma by Integrating Large-Scale scRNA-seq. *bioRxiv* [Preprint]. 2023 Dec 7:2023.12.05.570193. PMID: 38105955

### *Mijo Simunovic*

Zhang M, Reis AH, **Simunovic M**. Human embryoids: A new strategy of recreating the first steps of embryonic development in vitro. *Semin Cell Dev Biol*. 2023 30;141:14-22. doi: 10.1016/j.semcdb.2022.07.003 PMID: 35871155

### *Anil Rustgi*

Dunbar KJ, Wong KK, **Rustgi AK**. Cancer-Associated Fibroblasts in Esophageal Cancer. *Cell Mol Gastroenterol Hepatol*. 2024 Jan 19:S2352-345X(24)00007-9. PMID: 38246591

Efe G, Dunbar KJ, Sugiura K, Cunningham K, Carcamo S, Karaikos S, Tang Q, Cruz-Acuña R, Resnick-Silverman L, Peura J, Lu C, Hasson D, Klein-Szanto AJ, Taylor AM, Manfredi JJ, Prives C, **Rustgi AK**. p53 Gain-of-Function Mutation Induces Metastasis via BRD4-Dependent CSF-1 Expression. *Cancer Discov*. 2023 Dec 12;13(12):2632-2651. PMID: 37676642

Cruz-Acuña R, Kariuki SW, Sugiura K, Karaikos S, Plaster EM, Loebel C, Efe G, Karakasheva T, Gabre JT, Hu J, Burdick JA, **Rustgi AK**. Engineered hydrogel reveals contribution of matrix mechanics to esophageal adenocarcinoma and identifies matrix-activated therapeutic targets. *J Clin Invest*. 2023 Dec 1;133(23):e168146. doi: 10.1172/JCI168146. PMID: 37788109.

### *Robert Schwabe*

Saito Y, Yin D, Kubota N, Wang X, Filliol A, Remotti H, Nair A, Fazlollahi L, Hoshida Y, Tabas I, Wangenstein KJ, **Schwabe RF**. A Therapeutically Targetable TAZ-TEAD2 Pathway Drives the Growth of Hepatocellular Carcinoma via ANLN and KIF23. *Gastroenterology*. 2023 Jun;164(7):1279-1292. doi: 10.1053/j.gastro.2023.02.043. PMID: 36894036.

Sun Q, **Schwabe RF**. Hepatic Stellate Cell Depletion and Genetic Manipulation. *Methods Mol Biol*. 2023;2669:207-220. doi: 10.1007/978-1-0716-3207-9\_12. PMID: 37247062

### *Ji-Yeon Shin*

Hernandez-Ono A, Zhao YP, Murray JW, Östlund C, Lee MJ, Shi A, Dauer WT, Worman HJ, Ginsberg HN, **Shin JY**. Dynamic regulation of hepatic lipid metabolism by torsinA and its activators. *JCI Insight* 2024 Jan 9:e175328.



### *Ira Tabas*

Shi H, Moore MP, Wang X, Tabas I. Efferocytosis in liver disease. *JHEP Rep.* 2023 Nov 16;6(1):100960. doi: 10.1016/j.jhepr.2023.100960. PMID: 38234410

Wang X, Moore MP, Shi H, Miyata Y, Donnelly SK, Radloff DR, Tabas I. Hepatocyte-targeted siTAZ therapy lowers liver fibrosis in NASH diet-fed chimeric mice with hepatocyte-humanized livers. *Mol Ther Methods Clin Dev.* 2023 Nov 23;31:101165. PMID: 38144682.

Ngai D, Schilperoort M, Tabas I. Efferocytosis-induced lactate enables the proliferation of pro-resolving macrophages to mediate tissue repair. *Nat Metab.* 2023 Dec;5(12):2206-2219. doi: 10.1038/s42255-023-00921-9. PMID: 38012414

### *Elizabeth Verna*

Pillai A, Goldaracena N, Rosenblatt R, **Verna EC.** CAQ Corner: Evaluation and management of living liver donors. *Liver Transpl.* 2023 Oct 1;29(10):1118-1128. doi: 10.1097/LVT.000000000000183. Epub 2023 May 29. PMID: 37243369

### *Harris Wang*

Ricaurte D, Huang Y, Sheth RU, Gelsinger DR, Kaufman A, **Wang HH.** High-throughput transcriptomics of 409 bacteria-drug pairs reveals drivers of gut microbiota perturbation. *Nat Microbiol.* 2024 Feb;9(2):561-575. doi: 10.1038/s41564-023-01581-x. PMID: 38233648

### *Timothy C. Wang*

Wu F, Jiang Z, Qian J, Kobayashi H, Waterbury QT, White RA, Ochiai Y, Zhi X, Tu R, Zheng B, Shi Q, Zamechek LB, **Wang TC.** An optimized protocol for isolation of murine pancreatic single cells with high yield and purity. *STAR Protoc.* 2024 Jan 13;5(1):102836. doi: 10.1016/j.xpro.2024.102836. PMID: 38219150

Jiang Z, Waterbury QT, Malagola E, Fu N, Kim W, Ochiai Y, Wu F, Guha C, Shawber CJ, Yan KS, **Wang TC.** Microbial-Dependent Recruitment of Immature Myeloid Cells Promotes Intestinal Regeneration. *Cell Mol Gastroenterol Hepatol.* 2023 Oct 28;17(3):321-346. doi: 10.1016/j.jcmgh.2023.10.007. PMID: 37898454

### *Jennifer Woo-Baidal*

Cruz Herrera E, Figueroa-Nieves AI, Woo-Baidal JA. The potential role of social care in reducing childhood obesity. *Curr Opin Pediatr.* 2024 Feb 1;36(1):10-16. doi: 10.1097/MOP.0000000000001309. PMID: 37972976

### *Howard Worman*

Jin Q, **Worman HJ.** Long live lamins. *J Cell Biol* 2024;223:e202311193

## *Citing the CU-DLDRRC on your publications*

We would like to point out that key to our success as a center will be the listing of the center grant **1P30DK132710-01** on all your publications. This is important both for our progress reports and future renewal. We also encourage you to list specific cores that were used.

## *CU-DLDRRC member publications and grants*

Please inform us (Nicole Pagan [nmp2160@cumc.columbia.edu](mailto:nmp2160@cumc.columbia.edu) and/or Seetha Srinivasan: [svs2113@cumc.columbia.edu](mailto:svs2113@cumc.columbia.edu)) about upcoming publications and funded grants so that we can post this on our **website, newsletter** and **Twitter**.

## *CU-DLDRRC Activities*

Our 2024 **Annual DLDRRC Retreat** is scheduled for **May 7th 2024!** Please mark your calendars!

We encourage you to utilize our DLDRRC Cores! Members would be eligible to obtain discounts and special pricing!

*Clinical Biospecimen and Research Core*

*Single Cell and Bioinformatics Core*

*Organoid and Cell Culture Core*

*BioImaging Core*

Information about our Cores is available at: <https://www.columbiadldrc.org/cores/>

## **Notifications:**

- **Please contribute to this Newsletter! While we make efforts to obtain information about your successes and achievements, the emails/texts/calls from you still remain the most reliable, quick and efficient way to get us your news!**
- **Please cite the NIDDK P30DK132710 grant in your presentations and publications whenever applicable. Please also cite the DLDRRC Cores that you and your team used.**
- **Please attend the Seminars and other events conducted by the Columbia University Digestive and Liver Disease Research Center.**

**Information about our seminars is available at <https://www.columbiadldrc.org>**