



**N-glycan imaging mass spectrometry of colorectal adenocarcinoma.** H & E image vs overlay of IMS heat maps assaying six distinct N-glycan structures that localize to distinct tissue regions. From [C. Blaschke et al, Clin Lab Med. 2021 Jun; 41\(2\):247-266.](#)

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## A Note from the Directors



**Don C. Rockey**  
DDRCC Director

**As the summer winds down**, we have some exciting news for the coming months. We continue to build our **Eastern DDRCC Alliance network** through ongoing discussions focused on building a stimulating exchange program for MUSC and other Center junior investigators. These discussions are well underway; our goal is for our member institutions



**Stephen Duncan**  
CDLD Director

to being hosting exchange visits and seminars beginning in the Spring of 2022.

Another exciting and unexpected honor for our young program was our being asked by NIDDK to host the **2022 DDRCC Directors Annual Meeting** in Charleston next year. This meeting serves not only as a venue for annual discussions of the programmatic and strategic goals for the entire Silvio O. Conte DDRCC network, but also as a platform for us to tout our own Center and our member investigators. The meeting is tentatively scheduled for **March 10 - 11, 2022**. Further details will be announced as we develop our program agenda.

In addition to the new members update for this Newsletter, focused on Pediatric research, please note the update below regarding the recent reorganization of the study sections under the digestive and metabolic disease-oriented **DKUS** and **EMNR** Integrated Review Groups (**IRGs**). These study sections, which began accepting applications for review in the February/March cycle of this year, review proposals on topics of high interest to our current DDRC membership.

## Research Focus

### Pediatric GI & Hepatology Research

The Digestive Disease Research Core Center welcomes two new members from the Department of Pediatrics and the Shawn Jenkins Children's Hospital. Their investigator profiles and funded projects are described below, along with short video podcasts of introductory interviews. As Full Members of the DDRCC, Drs. Chetta and Kasi will have subsidized core access to facilitate their progress. Please take a few minutes to welcome and to learn more about their science.

## Investigating the role of human alpha-lactalbumin made lethal to tumor cells (HAMLET) in the human milk diets of preterm infants



**Katie Chetta, MD**

### Department of Pediatrics (Neonatology)

Feeding of newborns, particularly vulnerable preterm infants, has complex and longterm impacts on child health. It is widely accepted that "breast is best, and that human milk is optimally for provides not only needed fuel for infantile growth and development, but also humoral and cellular immune factors that shield the "premies" from microbial pathogens.

[View the podcast](#)

[Contact Dr. Chetta](#)

Human milk banks provide a crucial resource for NICU babies who are unable to breastfeed, or who are distanced and isolated from their mothers. The growth of these banks has spawned a concomitant need to delineate best practices for storing and preserving human milk to ensure its longterm potency and safety. For her KL-2-funded project, Dr. Chetta follows up her prior fellowship research on HAMLET, a complex of partially unfolded human lactalbumin and oleic acid. HAMLET forms spontaneously in human milk during prolonged refrigeration, and has been shown to have toxic effects on cultured human cell lines. This raises the concern that improperly stored milk might have deleterious effects on premature gut cells and increase the risk for dangerous NICU complications like necrotizing enterocolitis (NEC). Her goals of quantifying HAMLET in stored milk and testing its toxicity specifically on models of developing human gut epithelium will be greatly facilitated through collaboration with the DDRCC Proteomics and Analytical Cell Models cores.

## MUSC-Siemens Ultrasound Pilot Project: Ultrasound shear wave elastography as a non-invasive point of care tool in children with Non-Alcohol Fatty Liver disease



## Nagraj Kasi, MD

### Department of Pediatrics (GI & Hepatology)

Diagnostic technology frequently used and widely available in the adult medicine world are still under development in the field of pediatrics.

While drugs and devices are often used in children based upon the approvals obtained through adult trials, there is a recognition that children are not simply "small adults." In the field of ultrasonography, continual innovation and refinement of both ultrasound devices and

[View the podcast](#)

[Contact Dr. Kasi](#)

Unable to view the podcasts? Please [email Kyu](#).

## Notes from the DDRCC

# New GI Study Sections at CSR

The study sections under the GI and hepatology-oriented Integrated Review Groups (**IRGs**) at NIH's Center for Scientific Review underwent recent reorganization into several new study sections. These study sections began receiving applications in October, 2020 for the February/March 2021 review meetings. They continue to review applications focused on topics of interest to our current DDRC membership, including basic mechanisms of microbial interactions and inflammatory gut disease, digestive and nutritional physiology and pathophysiology (e.g. obesity and diabetes), organ development, homeostatic and functional mechanisms, and human translational and/or interventions research. The new study sections are listed below by IRG, with links to their detailed descriptions and rosters of reviewers:

## **DKUS: Digestive, Kidney and Urological Systems IRG**

**DHMI: Digestive System Host Defense, Microbial Interactions and Immune and Inflammatory Disease.** Focuses include GI innate and adaptive immunity, gut microbiota/microbiome, host-microbial interactions, inflammation and epithelial cell biology related to mucosal defense or repair in a variety of model systems. (Click [here](#) for the **DHMI** website.)

**DNPD: Digestive and Nutrient Physiology and Diseases.** Focuses include physiology or pathophysiology of digestion, nutrition and related functional disorders, GI development and growth differentiation control, non-immune or inflammatory GI dysplasia and pre-neoplasia, gut neurology, secretory and hormonal function. (Click [here](#) for the **DNPD** website.)

## **EMNR: Endocrinology, Metabolism, Nutrition and Reproductive Sciences IRG**

**BMDM: Basic Mechanisms of Diabetes and Metabolism.** Focuses on metabolic homeostasis, genetics and pathobiology of diabetes and obesity. (Click [here](#) for the **BMDM** website.)

**HSDO: Human Studies of Diabetes and Obesity.** Reviews applications related to clinical and translational research on interventions preventing and treating diabetes and obesity. (Click [here](#) for the **HSDO** website.)

**NMHD: Nutrition and Metabolism in Health and Disease.** Reviews applications concerned with mechanisms of macro- and micro-nutrient transport and processing and impacts on metabolism and physiological and pathophysiological pathways and outcomes. (Click [here](#) for the **NMHD** website.)

**POMD: Pathophysiology of Obesity and Metabolic Disease.** Reviews applications centered around the organizing theme of the pathogenesis and treatment of metabolic disease. (Click [here](#) for the **POMD** website.)



Kyu-Ho Lee, MD-PhD  
DDRCC Center  
Manager

### **A tip from the Center Manager: the ART of steering your grant review**

A handy online tool for identifying an appropriate study section for your grant application, or for increasing the likelihood that CSR will assign your grant to a study section that you favor is the online **Assisted Referral Tool (ART)** available through NIH/CSR. Simply cut and paste the text of your application, including title, abstract and Specific Aims to generate a rank order list of relevant study sections within CSR, including links to the study section, membership rosters and the associated IRG. These lists are not stored within the system, and are solely for the applicant's benefit.

[Click here for the CSR ART webtool](#)

**DDRCC and CDLD Enrichment Seminar Series**

We were privileged to host an outstanding series of virtual seminars this year, featuring speakers of national and international renown. All of the GI & Hepatology 7am series were recorded, and are available through Box. A few notable highlights are mentioned below. The complete collection of recorded talks are available to DDRCC and CDLD members [here](#).

### **DDRCC / CDLD / GI and Hepatology Grand Rounds:**

**Wednesday, 7am EST (Zoom)**

### **DDRCC/CDLD/ RMCB Virtual Seminar Series:**

**Wednesday, 11 am EST (Zoom)**

### **NO SEMINARS UNTIL SEPTEMBER**

**To receive notifications for our Enrichment series seminars, please contact the DDRCC Center Manager.**

## **Selected GI Publications by our Members**

Each newsletter, we highlight a subset of the many outstanding papers published and presented by our DDRCC members. We strive to mention particularly significant primary research papers where our members were lead authors or key contributors, and to represent the broad scope of clinical, basic science and clinical-translational research interests across our membership. To assist us in these efforts, we continue to encourage you to [email Kyu](#), our center manager, about your particularly significant papers and presentations.

While space does not allow us to list a comprehensive month-to-month list of our member publications, such a list can be found on our DDRCC website [here](#).

A complete listing of our DDRCC member publications since its inception can also be found through NCBI [here](#).

**June, 2021 - July, 2021**



**Elmunzer, BJ** et al. Digestive Manifestations in Patients Hospitalized With Coronavirus Disease 2019. *Clin Gastroenterol Hepatol*. 2021 Jul;19(7):1355-1365.e4. PubMed PMID: 33010411; PubMed Central PMCID: PMC7527302.

Sandler RS, Davidson NO, Monga SP, **Rockey DC**. Silvio O. Conte Digestive Disease Research Core Centers-Connecting People, Creating Opportunities, Developing Careers. *Gastroenterology*. 2021 Jun 24. PubMed PMID: 34175277; NIHMSID: NIHMS1718396.

**Obeid JS**, Khalifa A, Xavier B, Bou-Daher H, **Rockey DC**. An AI Approach for Identifying Patients With Cirrhosis. *J Clin Gastroenterol*. 2021 Jul 8. PubMed PMID: 34238846.

Gonzales HM, **Taber DJ**, **Nadig S**, Patel N, Lin A, Baliga PK, Rohan VS. The impact of race on metabolic, graft, and patient outcomes after pancreas transplantation. *Am J Surg*. 2021 Jun 17. PubMed PMID: 34158161.

**San Giovanni CB**, Sweeney B, Skelton JA, Kelsey MM, Kelly AS. Aversion to Off-label Prescribing in Clinical Pediatric Weight Management: The Quintessential Double Standard. *J Clin Endocrinol Metab*. 2021 Jun 16;106(7):2103-2113. PubMed PMID: 33901290.

Novotny LA, Evans JG, Su L, Guo H, **Meissner EG**. Review of Lambda Interferons in Hepatitis B Virus Infection: Outcomes and Therapeutic Strategies. *Viruses*. 2021 Jun 9;13(6). Review. PubMed PMID: 34207487; PubMed Central PMCID: PMC8230240.

Schwartz AV, Pan Q, Aroda VR, Crandall JP, Kriska A, Piromalli C, Wallia A, Temprosa M, **Florez H**. Long-term effects of lifestyle and metformin interventions in DPP on bone density. *Osteoporos Int*. 2021 Jun 4. PubMed PMID: 34086101.

Jaben IL, **Coté GA**, **Forster E**, Moran RA, Broussard KA, Scott N, **Cotton PB**, Keane T, **Elmunzer BJ**. Comparison of Urologist- vs Gastroenterologist-Directed Extracorporeal Shock Wave Lithotripsy for Pancreaticolithiasis. *Clin Gastroenterol Hepatol*. 2021 Jun;19(6):1234-1239. PubMed PMID: 32712398.

Blaschke CRK, McDowell CT, Black AP, **Mehta AS**, **Angel PM**, **Drake RR**. Glycan Imaging Mass Spectrometry: Progress in Developing Clinical Diagnostic Assays for Tissues, Biofluids, and Cells. *Clin Lab Med*. 2021 Jun;41(2):247-266. Review. PubMed PMID: 34020762.

**Arif E**, Wang C, Swiderska-Syn MK, Solanki AK, Rahman B, Manka PP, Coombes JD, Canbay A, Papa S, Nihalani D, Aspichueta P, Lipschutz JH, **Syn WK**. Targeting myosin 1c inhibits murine hepatic fibrogenesis. *Am J Physiol Gastrointest Liver Physiol*. 2021 Jun 1;320(6):G1044-G1053. PubMed PMID: 33908271; PubMed Central PMCID: PMC8285590.

Gonzales HM, **Taber DJ**, **Nadig S**, Patel N, Lin A, Baliga PK, Rohan VS. The impact of race on metabolic, graft, and patient outcomes after pancreas transplantation. *Am J Surg*. 2021 Jun 17. PubMed PMID: 34158161.

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# Accessing DDRCC Cores

## Quick Links for DDRCC and CDLD Core Use

A reminder that Full Members receive subsidized usage of our [cores](#). Below are some summary details for accessing the cores and initiating projects.

### Analytical Cell Models Core:

- The DDRCC and CDLD both **fully subsidize** the use of the ACC by its members.
- For iPSC projects, please contact the Core Director, [Dr. Steve Duncan](#).
- For primary cell isolation, please contact [Dr. Don Rockey](#).

### Advanced Imaging Core:

- The DDRCC and CDLD both provide **full members** with a **25% discount** on facility fees.
- For imaging projects, please contact the Core Director, [Dr. John Lemasters](#) and Core Manager [Monika Gooz](#).

### CDLD Animal Models Core:

- The CDLD **fully subsidizes** the use of the Animal Models Core for its **Junior Investigators**.
- Other **discounts** may currently apply for DDRCC members.
- For animal projects please contact the Core Director, [Dr. Suzanne Craig](#).
- For gnotobiotic mouse models, please contact [Dr. Caroline Westwater](#).
- For transgenic and CRISPR/Cas9 projects, please contact the TGE Director, [Dr. Alexander Awgulewitsch](#).

### DDRCC Proteomics Core (**updated**):

- **DDRCC full members** will now receive a **50% discount** from facility fees.
- For MS projects, please contact the Core Co-Director, [Dr. Lauren Ball](#).

## Clinical Component Core:

- The DDRCC and CDLD **fully subsidize** biostatistical consultations with the Clinical Component Core by all of its members, including biostatistical support and mentoring for its Junior Investigators and Pilot & Feasibility applicants and awardees.
- To start a project, visit the [SPARC website](#) and submit a Biostatistics, Design & Epidemiology request, and contact:
  - DDRCC Core Director, [Dr. Paul Nietert](#)
  - CDLD Director [Dr. Ramesh Ramakrishnan](#).

## CITE OUR GRANTS

### FOR THE DDRCC:

### FOR THE COBRE CDLD:

**P20 GM120457**

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For queries regarding DDRCC news, membership and cores, please contact the Center Manager:

For queries regarding the COBRE in Digestive and Liver Disease, please contact the COBRE PI:

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#### Visit the DDRCC Website:

<https://medicine.musc.edu/departments/dom/divisions/gastroenterology/research/labs-and-centers/ddrcc>

#### Visit the CDLD Website:

<https://medicine.musc.edu/departments/regenerative-medicine/cobre-digestive-liver-disease>

