

# GUT INSTINCT

MAKING SENSE OF IT ALL 2017 | Issue 5

A Newsletter of the Gastro-Intestinal Research Foundation and The University of Chicago Medicine Digestive Diseases Center



## MEET THE BALL CO-CHAIRS: BEE CRAIN AND KATIE CHUDNOVSKY

When 600-some supporters of the GI Research Foundation gather on May 20th to dine, dance, and mingle at the organization's 56th annual ball, black tie will be the order of the evening. But the money raised at the event will fund the work of people with an entirely different dress code: white coat.

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# MEET THE BALL CO-CHAIRS, BEE CRAIN AND KATIE CHUDNOVSKY

56th Annual GI Research Foundation Ball, May 20th, 2017

Anne Ford



Joseph B. Kirsner, MD, PhD, with longtime friend Bee Crain.

As the foundation's biggest fundraiser, the ball represents a tremendous opportunity for GI Research Foundation supporters to help improve life for patients. The proceeds from the event will fund a myriad of scientific and medical efforts for the benefit of the tens of millions of people who live with digestive diseases.

"Our goal is to fund as much research as we can," says Ball Co-Chair and GI Research Foundation board member Katie Chudnovsky. "The researchers whose studies we fund are the people the rest of the world is waiting for." In addition to comedian Dana Carvey and the music of the Larry King Orchestra, the evening will feature—in lieu of a silent or live auction—a paddle raise that will allow attendees to donate in support of a specific study or piece of medical equipment.

Chudnovsky and her ball co-chair, fellow GI Research Foundation board member Beatrice G. Crain, have worked hard for months to make the ball a success. Their commitment to the event's success reflects many years of devotion to GIRF and its leadership.

How many years, you ask? In her case, "let's say it's over 25," Crain says with a smile.

Actually, her involvement with the GI Research Foundation has its roots in World War II, when her husband and Joseph B. Kirsner, MD, founding father of the GI Research Foundation and longtime champion, met while serving in the military. After the war, their friendship continued, and once the GI Research Foundation was established in 1962, the Crains became avid supporters.

She remembers with great fondness that whenever she or her husband had a family member in the hospital, "even though they weren't his patients, Dr. Kirsner looked in on them and checked their charts, to see that everyone was being taken care of."

"He showed such loyalty to our family, and I in turn felt the same way about him," she says.

Chudnovsky, meanwhile, became involved with GI Research Foundation about four years ago. She has both family members and close friends affected by gastrointestinal disease, and "I want to make a difference where I can," she says. "This is something that I deal with personally, in my everyday life, and what the GI Research Foundation is doing is truly meaningful."

She's amazed by the number of breakthroughs she's seen in her time at the foundation. "Most studies are years and years from coming up with something," she points out. "I've seen multiple successes already."

The proceeds from this year's ball are expected to exceed last year's, which topped \$1 million. It's a far cry from the long-ago days when Dr. Kirsner was given \$100 to fund studies for an entire year. As Chudnovsky says, "It makes us feel really good to be able to do so much more."

*Tickets for the GI Research Foundation 56th Annual Ball are available at [giresearchfoundation.org](http://giresearchfoundation.org).*

## DID YOU KNOW?

- » 60 to 70 million people affected by all digestive diseases in the United States alone.
- » 20 percent of the population reports weekly symptoms of one of the most common digestive diseases, Gastroesophageal Reflux Disease.
- » Health care costs amount to \$141.8 billion annually.

Source: NIH, Health Information: Digestive Diseases

<https://www.niddk.nih.gov/health-information/health-statistics/digestive-diseases>

# SCIENTIST PROFILE: A. MURAT EREN, PHD

Robert Mitchum

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Ecology is everywhere, A. Murat Eren, likes to say. In the oceans and soil, in the human gut and on the skin, live microscopic worlds of astonishing diversity. The young science of using computational, molecular, and genetic approaches to study these complex ecosystems, often called the microbiome, promises to reveal rich new discoveries in biology and medicine.

Though trained as a computer scientist, Eren, who goes by Meren, was drawn to this emerging research as a graduate student at the University of New Orleans, later moving to the Marine Biological Laboratory to study microbial populations everywhere from plant leaf surfaces to city sewage systems. Now he's joined the University of Chicago Digestive Diseases Research Core Center to apply powerful computational tools to studying the role of the microbiome in health and disease.

"We believe that the field of microbial ecology is going to have a considerable impact on the future; how we address some of the outstanding questions related to human health as well as environmental health," said Meren, an Assistant Professor in the Department of Medicine and a member of the Committee on Microbiology.

A valuable method in this pursuit is called metagenomics. Instead of isolating a single organism and sequencing its genome, metagenomics takes a sample from soil, water, or a human and uses sequencing to reveal the bits and pieces of DNA from all organisms present in the environment.

Computation provides microbiome researchers with the ability to sift through the rising flood of metagenomic data to discover new insights and form new hypotheses. Meren's techniques determine what types of bacteria are present in an environment -- the colon of a patient with irritable bowel syndrome, for example -- and how that diversity compares to healthy individuals, or before and after treatment.

"We're like criminal investigators in a sense," Meren said. "We're trying to collect evidence, then go back and ask better questions, and do this over and over again. The more we understand, the more specific our questions become, and maybe between all the individuals we have run into at some point or another, we start seeing the emergence of a model."

In one recent study with Dr. David Rubin, Meren and the members of his lab applied some of the methods they have been developing to fecal microbiota transplantation (FMT), assaying the donor



A. Murat Eren, PhD (Meren)

microbial populations in two recipients following the procedure. The study offered important clues to the types of bacteria that successfully transfer from the donor and colonize recipients, perhaps informing future investigations and treatments that are better targeted and more effective.

"FMT is an interesting procedure that may teach us a lot about the ecology of microbes in the human gut, but studying FMTs with the level of attention and detail provided by genome-resolved metagenomics may also result in benefits for people who need this procedure," Meren said. "Although it is too early to suggest anything, I believe traveling this route may allow us to identify more precise strategies to deliver organisms with high colonization potential and metabolic benefits to ameliorate some of the intestinal disorders more effectively."

## FAST FACTS

- » *The entire microbiota in a person weighs only one to four and a half pounds.*
- » *100 trillion microorganisms live in the intestinal tract.*
- » *The colon has the highest recorded population densities for any microbial habitat.*
- » *The intestinal tract has no microbiome at birth.*

Source: *Nature*, [http://www.nature.com/nrrheum/journal/v12/n7/box/nrrheum.2016.85\\_BX1.html](http://www.nature.com/nrrheum/journal/v12/n7/box/nrrheum.2016.85_BX1.html)

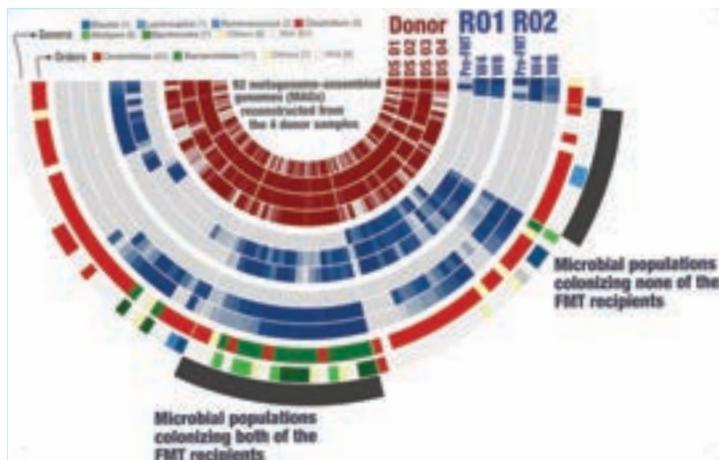
"WE BELIEVE THAT THE FIELD OF MICROBIAL ECOLOGY IS GOING TO HAVE A CONSIDERABLE IMPACT ON THE FUTURE . . . HUMAN HEALTH AS WELL AS ENVIRONMENTAL HEALTH."

# A. MURAT EREN

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As a fellow of the Marine Biological Laboratory, Meren is also interested in exploring how a better understanding of microbial life in the oceans could help us learn more about the microbial life in the human gut. One example is an unlikely contributor to human health, the sponge. Sponges enrich certain microbial populations very precisely, and their survival depends on the maintenance of these tight, symbiotic relationships. Unlocking how they promote the growth of certain types of microbes while suppressing others in an ocean full of microbes could have valuable medical applications.

“If we can find ways to understand mechanistic of simple host-microbe interactions, we may be able to learn things that can be translated to interactions taking place in our guts,” Meren said. “Marine habitats have many answers for us. Maybe we could learn from the sponge how to be very specific about what we target, or what we promote in our own guts.”



A visualization of tracking the microbial population genomes in FMT experiments from Meren's work.

## NEWS & ANNOUNCEMENTS

### GI RESEARCH FOUNDATION ANNUAL BALL

**SATURDAY, MAY 20**

56th annual gala to raise money for digestive disease physicians and researchers at UChicago Medicine.

*Tickets:* [giresearchfoundation.org](http://giresearchfoundation.org)

### THE CELIAC CENTER'S ANNUAL SPRING FLOURS GLUTEN-FREE GALA

**FRIDAY, APRIL 28**

*Tickets:* [cureceliacdisease.org](http://cureceliacdisease.org)

### EDUCATIONAL SEMINAR FOR PATIENTS AND FAMILIES

**WEDNESDAY, JULY 12**

An evening seminar featuring IBD multidisciplinary team. *Free.*

### ABOUT THE GASTRO-INTESTINAL RESEARCH FOUNDATION:

A non-profit dedicated to raising funds to support the physicians and scientists at The University of Chicago Medicine Digestive Diseases Center in their efforts to provide outstanding care, train future leaders and perform innovative clinical and laboratory research in order to treat, cure and prevent digestive diseases.

### THE UNIVERSITY OF CHICAGO DIGESTIVE DISEASES CENTER

is a collaborative, multidisciplinary network of physicians, researchers, and allied health professionals who share a legacy of innovation and a common purpose: to improve the lives of patients who suffer from digestive diseases.

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### NEWS IN BRIEF: UCM Fellows to Compete to Receive Research Awards from the GI Research Foundation

The annual Fellows Research Competition will be held on Wednesday, May 31st. The University of Chicago Medicine Fellows will present in progress research projects to the Board. Winners of the competition will receive grants in the amount of \$5,000 to continue their work.

### NEWS IN BRIEF: New study shows celiac disease may be triggered by a virus BANA JABRI, MD, PhD, Senior Author

“This study clearly shows that a virus that is not clinically symptomatic can still do bad things to the immune system and set the stage for an autoimmune disorder, and for celiac disease in particular,” said study senior author Bana Jabri, MD, PhD. The article can be found in *Science*, April 7, 2017