

# UC SAN DIEGO DIVISION OF GASTROENTEROLOGY

## LETTER FROM THE CHIEF

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Dear Friends and Colleagues,



The big news in this edition of our UC San Diego Division of Gastroenterology Newsletter is the move of most of our inflammation-orientated scientists from UC303 to the new BRF2 building.

This move integrates liver inflammation-orientated scientists (Brenner, Kisseleva, Seki, Schnabl, Feldstein, Loomba) and gut inflammation-orientated scientists (Crowe, Ernst, Eckmann, Chang, Rivera, Bode) into a single inflammation research unit. It also creates a place to emphasize translational research.

Rohit Loomba already has a functioning biobank related to non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH), and Bill Sandborn has just launched a biobank related to inflammatory bowel disease (IBD). These biobanks collect clinical information, archived imaging studies, and DNA, serum, tissue and stool. Translational studies linking the NIH-funded scientists (Brenner, Kisseleva, Seki, Schnabl, Feldstein, Crowe, Ernst, Eckmann, Chang, Rivera, Bode) and clinical researchers (Loomba, Sandborn, Levesque) are already underway in both NASH and IBD.



BRF2

This has been a dream of mine, from the moment that I accepted a position at UCSD, now almost 4 years ago, to create a translational research unit. To make it a reality, we had to find a way to move all of the Division inflammation scientists into a single integrated laboratory space, and to create robust clinical and clinical research programs in NASH and IBD. Over the last 3 ½ years, lots of hard work has gone into putting these building blocks in place, and now we can really begin to work together to realize the power that will come from linking UCSD science with UCSD medicine.

I wish all of you a happy summer.

Best Regards,

William J. Sandborn, MD  
Professor and Chief, Division of Gastroenterology

## SPOTLIGHT: TRANSLATIONAL RESEARCH UNIT

### A New Home for Many of the GI Division Investigators

By Sheila Crowe, MD

Early in 2014, many of the research faculty in the Division of Gastroenterology began moving to a new research building, Biomedical Research Facility Two (BRF2) on the UC San Diego La Jolla campus.

The new building (image at right) will house many UCSD researchers, including a group of investigators who study inflammatory conditions of the luminal digestive tract and the liver.



BRF2

The multidisciplinary inflammatory digestive diseases group includes researchers from the Departments of Medicine, Pediatrics and Pathology, with the majority based in the Division of

Gastroenterology. The group comprises Drs. Kim Barrett, Lars Bode (Pediatrics), David Brenner, John Chang, Sheila Crowe, Lars Eckmann, Ekihiro Seki, Ariel Feldstein (Pediatrics), Peter Ernst (Medicine/GI and Pathology), Jesus Rivera, and Bernd Schnabl.

*A single integrated laboratory space for all the UC San Diego Gastroenterology inflammation scientists*

The research laboratories for this group are located on the top (fifth) floor of the research tower and their offices, along with Dr. Rohit Loomba's office, are located on the sixth floor of the adjoining office section of the BRF2 building.

Half of the researchers in the GI Division who moved to BRF2 were vacating UC303, which was the home of the GI Division for many years.

When the UCSD East Campus Office Building (ECOB) opened in 2012, the administrative headquarters for the Division, including the clinical and educational programs and many of the clinical faculty, moved from UC303 to ECOB.

The UC303 research faculty and members of their laboratories celebrated the December holidays with an annual potluck dinner, which also served as a farewell to UC303 for many of the participants.

## TRANSLATIONAL RESEARCH UNIT

### Holiday Potluck Is a Farewell to UC303 for Some



UC303

Dr. Ravi Mittal and his research group will remain in UC303, which will expand to include clinical research in addition to Dr. Mittal's existing bench research program in gastrointestinal motility, housed at UC303 since earlier in 2013.

We hope the GI and Liver Inflammation Research Group had an uneventful move to the new building and we look forward to increased interactions among the investigators and successful new research collaborations!



## RESEARCH SPOTLIGHT



### Peter Ernst, DVM, PhD

*In the Department of Medicine:*

Professor of Medicine in the Division of Gastroenterology

*In the Department of Pathology:*

Director, Division of Comparative Pathology and Medicine

Co-Director, Center for Veterinary Sciences and Comparative Medicine

Peter B. Ernst, DVM, PhD, directs the new Center for Veterinary Sciences and Comparative Medicine (<http://vetsciences.ucsd.edu>). The center's purpose is to bring together expertise from various disciplines to enhance the teaching and research efforts of both veterinarians and physicians. For Dr. Ernst, it calls upon his dual backgrounds: veterinary medicine and biomedical research.

Most of the research faculty members have interests in GI research, he says, and some are involved in studies related to cancer, stem cells and infectious diseases.

There are 25 academic veterinarians in the San Diego area. The new center will support them in their research, education and clinical training efforts. Ways to solve human and animal health problems will be discovered more quickly and effectively through a fundamental understanding of comparative medicine.

In his biomedical research, Dr. Ernst is a widely known and respected investigator in the field of mucosal immunology, performing basic and translational research projects that examine comparative (human to mouse) mucosal immunology. Specifically, he studies immune-epithelial cell interactions involved in the microbial pathogenesis of acute and chronic diseases of the gastrointestinal tract.

His principal research interest is in immune-epithelial cell interactions involved in the microbial pathogenesis of acute and chronic diseases in the stomach and intestine. He has developed programs in comparative immunology to validate models using immune and inflammatory cells isolated from human gastrointestinal tissue. One aspect of the work has identified receptors for gastroenteric pathogens including class II MHC for *Helicobacter pylori* and Brain Angiogenesis Factor 1 (BAI1) as a pattern recognition receptor that binds LPS.

Dr. Ernst is an educator and mentor in mucosal immunology for students and up-and-coming investigators at UCSD. He is active in national and international organizations in the field, and he has served as councilor and then secretary-treasurer of the Society of Mucosal Immunology. In

*Hope: New Center for Veterinary Sciences and Comparative Medicine will help solve human and animal health problems more quickly*

## RESEARCH SPOTLIGHT: DR. ERNST

2013, he chaired the "Oral Abstract Session III: Epithelial Cells and Inflammation" session at the International Congress of Mucosal Immunology annual meeting as well as the program co-director for mucosal and regional immunity for the American Association of Immunologists.

Since he came to UCSD in 2011, Dr. Ernst has headed the Division of Comparative Pathology and Medicine in the Department of Pathology at UCSD. He also holds an appointment in the Department of Pathology, Microbiology and Immunology at the Veterinary College at UC Davis in addition to his serving as co-director of the Center for Veterinary Sciences and Comparative Medicine in San Diego.

Dr. Ernst earned his DVM and MSc degrees from the University of Guelph (1981) and his PhD in mucosal immunology at McMaster University (1985) in Ontario, Canada. He joined the McMaster faculty and served there until 1992, when he moved to the Department of Pediatrics at the University of Texas Medical Branch in Galveston. In 2001, he joined the Division of Gastroenterology in the Department of Medicine at the University of Virginia, a position he held until he moved to UCSD.

## JON I. ISENBERG ENDOWED LECTURE

### *Achieving the Highest Value Colon Cancer Prevention Program - Do We Have What It Takes?*

We conducted the 2013 Division of Gastroenterology Endowed Jon I. Isenberg Lecture on September 12, 2013, with guest lecturer John I. Allen, MD, MBA, AGAF, Clinical Chief of Digestive Diseases, Yale University and President-Elect of the American Gastroenterological Association.



His lecture was titled, "Achieving the Highest Value Colon Cancer Prevention Program - Do We Have What It Takes?"

*In the photo above, left to right: guest lecturer John I. Allen, MD, with Division of Gastroenterology faculty members Sheila Crowe, MD; Samuel Ho, MD; Rohit Loomba, MD; and William Sandborn, MD.*

The endowed lecture honors Dr. Jon I. Isenberg, who served as Chief of the Gastroenterology Division at UC San Diego for many years. We extend our deep appreciation to all the San Diego community and academic physicians who attended.

## RESEARCH SPOTLIGHT



Lars Eckmann, MD

Professor of Medicine

Lars Eckmann, MD, Professor of Medicine, conducts research in two major groups of human diseases: 1) Infection of the intestinal tract with microbial pathogens, such as Giardia and Escherichia coli, and 2) Mucosal inflammation.

Food- and waterborne pathogens are a major health concern in developed countries, and they are one of the leading causes of death among children in the developing world. The Eckmann laboratory investigates the cellular and molecular events that occur in the intestine and systemically in response to infection with enteric pathogens. Using cell and molecular biologic, biochemical, and genetic approaches in murine infection models of Giardia (causing giardiasis) and different bacteria, including disease-causing E. coli and Salmonella, Dr. Eckmann and colleagues work to define the critical immune regulators and effector molecules that control infection.

The goal of these studies is to understand the mechanisms governing infection-related intestinal disease and the host defenses against such pathogens as a basis for developing new treatment and prevention strategies.

In the area of inflammatory bowel diseases, or IBD, the Eckmann laboratory investigates the pathophysiology of intestinal inflammation. IBD in humans is characterized by chronic, relapsing intestinal inflammation, leading to bouts of diarrhea, abdominal pain, and nutritional deficiencies. Furthermore, chronic inflammation promotes the development of colorectal cancer.

The cause of IBD is poorly understood, but inflammation is believed to result from an interaction of the immune system and intestinal bacteria in a genetically susceptible host. The Eckmann laboratory uses murine and cell culture models to investigate different aspects of the inflammatory response to microbial and chemical challenges.

Recent findings from the Eckmann laboratory also include the potentially far-reaching discovery that slight alterations in the structural elements of a class of antimicrobial drugs, known as 5-nitroimidazoles, can restore and in some cases expand or improve their effectiveness. The finding holds promise in the development of effective tools against the growing problem of drug resistance in pathogens.

*Fighting the problem of drug resistance in pathogens*

## RESEARCH SPOTLIGHT: DR. ECKMANN

Dr. Eckmann received his MD in 1989 from the University of Hamburg Medical School in Hamburg, Germany. He conducted additional graduate studies at The Beatson Institute for Cancer Research in Glasgow, Scotland, and post-doctoral work in immunology at UCSD from 1990 to 1996. He joined the UCSD faculty in 1996.

Among the fellowships and awards Dr. Eckmann has received are student fellowships from the German Scholarship Foundation and the German Academic Exchange Service, a post-doctoral fellowship and career development award from the Crohn's and Colitis Foundation of America, and a midcareer investigator award from the National Institutes of Health.

## 2013 ACOG GI JEOPARDY



Wilson Kwong and Mike McTigue (pictured at left) did a great job representing UCSD at the 2013 American College of Gastroenterology GI Jeopardy competition.

There were 110 GI programs competing. This is the second time a UCSD team made the top five to advance and compete in ACG's 2013 GI Jeopardy.

UCSD competed against teams from Cleveland Clinic, Walter Reed, Mayo GME and UCLA. We had a group of faculty, fellows, and staff as well as former fellows (Thuy Anh Le and Erica Boettcher) in the audience cheering them on. We came in fourth, beating UCLA.



## 7TH ANNUAL UCSD GI RESEARCH SYMPOSIUM



The 7th annual UCSD GI Research Symposium was held on October 19, 2013, at the Goldberg Auditorium with great success. This year's retreat focused on future directions for gastrointestinal cancer research. The organizers were Drs. Pradipta Ghosh and Samir Gupta.

Dr. Scott Lippman led the introduction followed by Drs. Sheila Crowe, Razelle Kurzrock, Robert Mattrey, Elena Martinez, Thomas Savides and William Sandborn. The keynote speakers included Dr. Gregory Gores and Dr. Frank A. Sinicrope from the Mayo Clinic.

All attendees showed great enthusiasm toward the potential for developing groundbreaking research in the area of gastrointestinal cancer through collaborative research across San Diego.

## CLINICAL TRIAL



### Patton ELAD® Clinical Study: New Hope for Treating Acute Liver Failure

UCSD and principal investigator Heather Patton, MD, Health Sciences associate professor in the Division of Gastroenterology and director of the Transplant Hepatology Program, are participating in a pivotal clinical study testing the benefit of ELAD®, a human cell-based bio-artificial liver support system, in patients with acute liver failure due to alcohol-induced liver decompensation and acute alcoholic hepatitis.

In previous trials, ELAD showed trends indicating the potential to increase survival rates in patients with acute liver failure.

Prior to the initiation of the ongoing Phase 3 clinical trial program, more than 150 subjects received ELAD therapy in seven clinical trials.

ELAD is being developed by Vital Therapies, Inc., a biotherapeutics company based in San Diego, CA.

For more information please contact Amber Faulise at 858-657-5175.



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## AWARDS, PRESENTATIONS AND ABSTRACTS

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### Grants

#### Amir Zarrinpar:

Received a Seed Grant from San Diego Center for Systems Biology (co-PI with Dr. Satchin Panda).

Was also invited to go to the AGA-AASLD Academic Skills Workshop.

### Awards to Fellows

To Dr. Ekihiro Seki's postdoctoral fellow **Yoon Seok Noh, DVM, PhD**:  
17th International Symposium on Cells of the Hepatic Sinusoid Young Investigator Travel Award 2013.  
2013 AASLD Young Investigator Travel Award

### Poster Presentations and Abstracts

#### Brigid Boland:

**Boland BS**, Hillman J, Proudfoot J, Pola S, Copur-Dahi N, Levesque B, Firestein GS, Boyle D, Chang JT, Sandborn WJ. "Detection and Measurement of Changes in mRNA Colonic Expression of Inflammatory Genes in Biopsies from Patients with

Ulcerative Colitis: A Validation Study." A360, 2013 Advances in Inflammatory Bowel Diseases, Hollywood, FL.  
Fellows **Brigid Boland** and **Michael Chang** presented their research at the 2014 Fellows Research Forum conducted by the San Diego Gastroenterology Society in March.

#### Ekihiro Seki:

**Abstracts to AASLD 2013 meeting:** [Oral Presentation] Song J, Inokuchi S, Roh YS, Yang L, **Seki E**. The contribution of Toll-like receptor signaling to the development of hepatic fibrosis and carcinogenesis in hepatocyte specific TAK1 deleted mice. **64th Annual meeting of American Association for the Study of Liver Diseases**. Nov 1-Nov 5, 2013. Washington, DC.

[Poster Presentation] Roh YS, Yang L, Song J, Zhang B, Park EJ, **Seki E**. Hepatocyte gp130-mediated signaling promotes hepatocellular carcinogenesis through activation of

mTORC1 and stat3. **64th Annual meeting of American Association for the Study of Liver Diseases**. Nov 1-Nov 5, 2013. Washington, DC.

### Other Presentations

#### Kim Barrett:

Keynote Speaker: Physiological consequences of interactions with 'good' and 'bad' bacteria in the gut." Annual Meeting of the Arizona Physiological Society, Phoenix, AZ, November 2013.

Delivered the Spitzer Lecture at Louisiana State University Health Science Center in October, 2013.

Keynote speaker: "Epithelial biology in the gastrointestinal system: insights into normal physiology and disease pathogens." Joint Themed Meeting in Epithelial & Membrane Transport and Vascular & Smooth Muscle Physiology, The Physiological Society of the UK, Dublin, Ireland, December 2013.

## Keep in Touch

### Faculty, Fellows and Alumni:

Join us on Facebook by logging into your Facebook account and typing in the search menu "UCSD Gastroenterology Fellows and Alumni" and click "ask to join."

You can also go to <http://www.facebook.com/groups/114277778649025>

A great way for alumni to keep in touch with the GI fellows and a way for fellows to contact alumni.

Includes interesting links, photos of the fellows, faculty and alumni, and division and fellowship events.

## GASTROENTEROLOGY MISSION STATEMENT



### ORGANIZATION STATEMENT

The UCSD GI Division will provide the best clinical care to those afflicted with gastrointestinal and liver diseases, investigate at the clinical and basic levels the best way to improve those diseases, and educate trainees on how to best approach the care of patients with those diseases. The UCSD GI Division will strive to be nationally recognized through its faculty as well as innovations that will improve the care of patients with gastrointestinal and liver diseases nationwide.

The UCSD GI Division was founded in 1970 by Henry Wheeler, MD, who served as its first division chief. Later, Jon I. Isenberg, MD, led the division from 1979 to 1993, followed by C. Richard Boland, MD, from 1995 to 2003, John M. Carethers, MD, from 2004 - 2009 and William J. Sandborn from 2011-present. The GI Fellowship Training Program commenced in 1974 and the NIH Training Grant was initially funded in 1976. The division has trained several local gastroenterologists in San Diego, as well as developed several academicians at University-based medical schools, including some with leadership and administrative positions.

#### Making the Most of Your Charitable Gifts

Here are just a few options on how you can support UC San Diego Division of Gastroenterology:

**Option 1** – The simplest way to donate is a **gift of cash** (including checks and credit cards). Remember if you itemize you may be able to receive a charitable deduction for 2014 for your gifts received on or before December 31<sup>st</sup>. You may contribute directly to UCSD GI by visiting our page at <http://www.gastro.ucsd.edu> and clicking on the ABOUT tab and choosing “Support Our Work” on the left hand column.

**Option 2** – A gift of **appreciated securities** also offers an attractive opportunity to support the Division of Gastroenterology. By contributing appreciated securities that you have held longer than 12 months, you will receive a charitable income tax deduction, in most cases for their full fair market value, and avoid any capital gains tax liability. It is important to remember that your securities must be transferred to the UC San Diego Foundation by December 31<sup>st</sup> for the 2014 tax year.

#### GI Division Office

9500 Gilman Drive (MC 0956)  
La Jolla, CA 92093  
East Campus Office Building  
V: 858-657-5284 | F: 858-657-5022

#### UCSD GI Clinical Referral

General GI	619-543-2347
Hepatology	619-543-6303
Interventional Endoscopy	858-657-6882
Motility	619-543-6834
IBD	858-657-8787
Celiac	619-543-2347

#### VA Medical Center

Gastroenterology Section (111D)  
3350 La Jolla Village Drive  
San Diego, CA 92161  
Tel: (858) 552-8585 x2631  
Fax: (858) 552-4327



Our Fellows are an important part of the Division of Gastroenterology. They are a very bright and talented group who work extremely hard at their research and clinical work. Their dedication to their field in turn is an excellent representation of this Institution and beyond.

To assist our Fellows, the Division of Gastroenterology has implemented the Fellowship Education Fund to support their Fellowship education. These funds go directly to support our Fellows in their education during their course of their tenure at UCSD. There are currently little or no funds to support such endeavors, and the Division is appealing to you as a former Fellow, former Faculty or an affiliated physician with UCSD to consider contributing with a tax-free donation to the Fellowship Education Fund.

Please complete the information below, and mail your donation in the enclosed self-addressed, stamped envelope. We will also send you a receipt for tax purposes. Your donation is greatly appreciated.

**Note:** for tax purposes your envelope needs to be postmarked by Dec 31, 2014.

### DONATION

Donor Name: \_\_\_\_\_

Address: \_\_\_\_\_

Suggested Contribution:

\$5,000	_____	\$500	_____
\$2,000	_____	\$250	_____
\$1,000		\$100	
		Other	_____

**Make checks payable to UC Regents (Tax ID# 95-6006144-W)**

**or**

**Donate online, go to <http://gastro.ucsd.edu> under the About tab - Support our Work.**