

DIDACTIC CURRICULUM/ ENRICHMENT PROGRAM

- 1) Examples of Formal Course Work:
 - a) Ethics of Scientific Research (MEHU 6101, 1 credit)
 - b) Clinical Research: Tools and Techniques
 - c) Grant Writing Skills
 - d) Cell Biology (BBSC 6402, 4 credits)
 - e) Molecular Biology and Genetics (BBSC 6403, 4 credits)
 - f) Methods in Health Services Research (PMCH 6314, 3 credits)
 - g) Survival Analysis (PMCH 6321, 3 credits)
 - h) Outcomes Research (PMCH 6387, 3 credits)
- 2) Surgical Grand Rounds/Translational Science Seminar Series: Fellows will attend Surgical Grand Rounds which is regularly scheduled every Wednesday morning. Once a month, these Grand Rounds will feature a clinical problem which has been impacted by historical and recent scientific studies. The goal of these seminars will be to stimulate surgical residents to critically evaluate the literature, and ask relevant research questions.
- 3) Journal Club: Fellows will be expected to read, evaluate, and present clinical trial data and basic science papers that have translational relevance in conjunction with the clinical residents in the general surgery program at UTMB.
- 4) Seminars. The trainees will participate in seminars presented by other departments such as the Division of Gastroenterology, the Department of Biochemistry and Molecular Biology, the Sealy Centers, Cancer Center Grand Rounds sponsored by the Sealy Center for Cancer Cell Biology, and Topics in Translational Research sponsored by the Institute for Translational Sciences (ITS).
- 5) Distinguished lecture series: Twice a year, the trainees will invite an accomplished surgeon-scientist of their choosing who will present a formal departmental Grand Rounds and, in more informal sessions, the trainees will present their work to the distinguished guests for their critiques and suggestions. Funds to support the travel and honoraria for the guest lecturers will be provided by the Department of Surgery.
- 6) Interaction with investigators at the Institute for Translational Research (<http://www.its.utmb.edu/>). Many of our investigators are members of the Institute for Translational Research and members of Multidisciplinary Translational Teams.

SUMMARY OF ESSENTIAL DISTINGUISHING FEATURES OF THE UTMB GI TRAINING PROGRAM

- A greater than 35 year history of training junior faculty, residents, fellows and students.
- A nurturing environment with a proven track record for the development of surgeon scientists.
- An academic community at UTMB with established interest in GI-related diseases composed of faculty from multiple departments and centers.
- Our program is further enhanced by other centers and institutes at UTMB with overlapping interests which provide a rich resource for additional mentors and a different focus on problems.
- All fellows have the opportunity to complete requirements for an advanced degree. This rigorous program requires the fellow to work under the direction of a supervisory committee, thus increasing the interactions of our trainees with other scientists on campus.
- Fellows are mentored in not only the science of experimentation, but also the fine points of successful abstract and manuscript writing, how to prepare an effective presentation, and how to write successful proposals for funding. These aspects of the research are crucial to a successful academic career and are strongly emphasized in our program.

G.I. Laboratory Research Fellowship positions are now available for two years to qualified surgical residents who have an interest in academic surgery. Full-time stipends for these positions are supported by a National Cancer Institute T-32 training grant. Please direct any inquiries to and send letter of interest and C.V. to:

**Mark R. Hellmich, Ph.D.
Department of Surgery, UTMB
301 University Boulevard
Galveston, TX 77555-0722
mhellmic@utmb.edu
409-772-1285**

UTMB & GALVESTON

As the first academic health center in Texas and among the oldest in the nation, the University of Texas Medical Branch campus includes six hospitals, a major medical library, classroom buildings, specialty centers, extensive research laboratories and office buildings, all of which advance UTMB's threefold mission to provide scholarly teaching, innovative scientific investigation, and state-of-the-art patient care. Galveston is a Texas Gulf Coast city with a semitropical climate and natural harbor, making it long favored as a tourist resort and port.



Department of Surgery



*"Chance Favors the Prepared Mind."
-Louis Pasteur*



For more information, please contact us at:
mhellmic@utmb.edu or 409-772-1285

INTRODUCTION

The UTMB gastrointestinal (GI) training program is specifically focused on the inter-disciplinary training of young, academic surgeons interested in diseases of the GI tract, liver, and pancreas. The goal of the research training program is to provide a rigorous, scientific foundation and to prepare and mentor young, academic surgeons to be independent scientists. Our program represents an intensive and integrated two-year research experience which offers the individual trainee a highly structured and mentored research experience in fundamental aspects in the study of GI diseases through one of two tracks: Basic Science or Clinical/Outcomes Research. All fellows have the unique opportunity to obtain formal education and an advanced degree in the area of their interest. Fellows learn to present the results of their studies in informal and national forums, to write manuscripts for publication, and to write competitive research grant proposals.

1. Basic Science Track:

- 35 year history of successfully training and mentoring investigators in surgery and related fields of basic science; many now leaders in this country and abroad.
- Fellows learn to define research objectives, to develop independent research protocols, to apply the techniques of experimental design, to perform experiments, and to evaluate experimental results.
- Fellows will be integrally involved in conducting cutting-edge research in one of three broad areas of study as they pertain to surgical diseases of gastrointestinal tract, liver and pancreas:
 - a) cancer cell biology, b) inflammation, c) GI hormones/receptors
- Individuals in the basic science track may enroll in and complete requirements for a Master of Medical Science (MMS) degree offered through the Graduate School of Biomedical Sciences at UTMB. Requirements for the MMS degree include writing a research proposal, identification of a supervisory committee, defense of the proposal and writing a thesis and peer-reviewed publication.

2. Clinical/Outcomes (Health Services) Research:

- Multidisciplinary and well-funded core of faculty with expertise in clinical investigation in the disciplines of surgery, medicine, rehabilitation science, biostatistics, sociology, health behavior, epidemiology and health economics.
- Mentoring team supports each trainee to become proficient as a health services research investigator.
- Fellows may enroll in a degree program offered through the division of Preventive Medicine and Community Health within the Graduate School of Biomedical Sciences at UTMB.
 - a) Clinical Sciences Graduate Program—Health Services Research Track (<http://www.utmb.edu/pmch/geClinical-Science.htm>).
 - b) Clinical Sciences Graduate Program—Clinical Research Track.
 - c) Master of Public Health—(<http://www.utmb.edu/pmch/mp/default.htm>).

INVESTIGATORS

Program Director: Mark R. Hellmich, PhD
Associate Directors: Celia Chao, MD (Basic Science)
Taylor S. Riall, MD, PhD (Health Services)



Hellmich



Chao



Riall



Cicalese



Rastellini



Mileski



Greeley

LABORATORIES

Mark Hellmich, PhD

- Project: Pancreatic Cancer
Translational Relevance: This project involves the downregulation of tumor suppressor genes in the metastatic spread of pancreatic cancer. Orthotopic and metastatic animal models of pancreatic cancer will be used.
- Project: Molecular mechanisms of inflammation-induced pancreatic cancer
Translational Relevance: Pancreatitis is an inflammatory process that has been implicated in the etiology of pancreatic cancer. This project involves the study of peptide hormone receptor-mediated pathways become dysregulated during acute pancreatitis and contribute to pancreatic cancer development.

Celia Chao, MD

- Project: Cancer Associated Fibroblasts in Colorectal and Pancreatic Cancer
Translational Relevance: This study focuses on the pro-tumorigenic functions of fibroblasts isolated from primary colon and pancreatic tumors.

Luca Cicalese, MD

- Project: Development of bioartificial intestinal segment using acellular matrix scaffold.
Translational Relevance: Short bowel syndrome is a devastating clinical problem that may ultimately require small bowel transplantation. Methods to extend native bowel need to be developed as a viable alternative.

- Project: Development of New Treatments for Hepatocellular Carcinoma (HCC)
Translational Relevance: The surgical treatments for HCC include liver transplantation and ablative techniques. Our lab is interested in developing new immunological-based treatment for HCC as well as improving ablative methods.

Cristina Rastellini, MD

- Project: Islet cell Transplantation
Translational Relevance: Chronic pancreatitis is a debilitating disease that eventually results in both exocrine and endocrine failure. This project will focus on 1) understanding mechanisms that can jeopardize islets physiology following isolation and 2) develop strategies to preserve beta cell viability and proliferation following transplantation. The aim of our studies will consist in optimizing islet transplant outcome in patient affected by chronic pancreatitis and requiring pancreatectomy and in insulin-dependent diabetic patients. Studies will be performed with human pancreatic islets and animal models

William Mileski, MD

- Project: Studies in Trauma and Critical Care
Translational Relevance: Perturbations of the gastrointestinal tract and intraabdominal organs commonly occur in the trauma and/or critical care patient population. Various projects on understanding basic pathophysiology as well as development of potential therapies are ongoing.

George H. Greeley, Jr., PhD

- Project: Obesity and gastrointestinal hormones apelin and gherlin
Translational Relevance: Obesity is a growing medical problem in the United States. The contribution of these peptide hormones in the regulation of glucose/adipose tissue homeostasis will be investigated.

Taylor S. Riall, MD, PhD

- Project: Utilization and patterns of care in patients with pancreatic cancer
Translational Relevance: This project using Surveillance, Epidemiology, and End Results (SEER)—Medicare linked data and broadly focuses on patterns of care across the spectrum of patients with pancreatic cancer including underutilization of surgical resection for patients with early stage cancer, use of hospice care at the end of life, and survivorship. By analyzing patterns of care and barriers to receipt of appropriate care this type of research has the potential to impact health policy.
- Project: Adherence to guidelines/management of complicated gallstone disease in elderly patients
Translational Relevance: This study uses Medicare data to study current adherence to guidelines regarding definitive therapy for complicated gallstone disease, which has not been systematically studied in older patients. It identifies risk factors for not receiving appropriate care and has national health policy implications. In addition, these data are used to implement policy locally at UTMB by implementation of clinical pathways.