SECTION OF GASTROENTEROLOGY

Overview of Educational, Research, and Clinical Activities

Education

The Section of Gastroenterology, under the leadership of Dr. M. Michael Wolfe continued to excel in all aspects of academic medicine in 2008 by gaining widespread prominence in clinical activities, basic and clinical research, and particularly for its commitment to the education of trainees at all levels. The educational mission continues to constitute a top priority, and the faculty and fellows provide what is universally regarded as the best educational services within the entire BU medical community. In addition to serving as outstanding role models, GI faculty members have consistently proven to be outstanding mentors and educators to not only residents, but also to students and our own fellows. Dr. Robert C. Lowe, in particular, is one of the top educators at BU and serves as GI Fellowship Program Director, a Robert Dawson Evans Educator, and Director of the entire *Biology of Disease* (BOD) Course. Under his able guidance, the Section plays a leadership role in the education offered throughout the Department of Medicine and BUSM.

All Section faculty members are regarded as thought leaders in their respective fields, and they participate in the lecture series delivered to fellows, residents, and students rotating through the Gastroenterology consult service, which educates trainees with a broad array of topics and enable them to gain considerable expertise during their short rotation on the clinical service. In addition to the Section's formal didactic sessions, Radiology and Pathology conferences are held on alternating Tuesday mornings and enable GI fellows and other trainees to obtain proficiency in important ancillary services considered integral to the care patients with digestive disorders. Two additional weekly conferences provide important components to the education of medical students, residents, and fellows. The Tuesday afternoon Gastroenterology/Surgery conference is a multidisciplinary meeting of surgeons, gastroenterologists, medical and surgical oncologists, and radiation oncologists that serves as a forum to discuss patients with gastrointestinal malignancies and other digestive disorders that cross the borders of medical and surgical care required for their optimal management.

The second conference, Gastroenterology Grand Rounds, is held weekly on Thursday afternoons. Fellows direct what constitutes the most important didactic venue offered by the Section by presenting cases and management issues of interest, followed by an in-depth discussion by attending physicians within the Section. This forum also serves as a venue for visiting scholars to present contemporary research or clinical lectures to the faculty and trainees. Finally, these sessions provide a forum for fellows to present their research in progress, to review presentations for various national meetings, and for BUSM faculty to familiarize others with their own areas of investigation.

Research

During 2008, faculty members within the Section of Gastroenterology continued their record of productivity and achieved continued success in their efforts to procure federal and private research funding, including industry. These extramural sources included the NIH, the Hartwell Foundation, the Massachusetts Department of Health, and The Center for

Integration of Medicine and Innovative Technology. The total amount of extramural funding (direct costs) for the Section in 2008 was \$2,110,000.

Basic biomedical research within the Section focuses on the biology of gastrointestinal regulatory peptides and their role in obesity and other metabolic disorders, stem cell and epithelial cell biology, gastrointestinal carcinogenesis, and oral biology. Specific areas of research include the role of glucose-dependent insulinotropic polypeptide (GIP) on lipid homeostasis and the development of obesity, as well as its role in obesity-related GI neoplasia. In addition, collaborative efforts among faculty members within the Section involve the elucidation of the mechanisms by which GIP stimulates intestinal nutrient absorption. These studies will have important implications with regard to the pathogenesis of obesity and to potential future treatment modalities.

Other collaborative efforts that have incorporated expertise within both the Section and the BU School of Engineering is the development of methods for using endoscopic spectrophotometry to detect neoplastic and metaplastic lesions in the esophagus and the colon, including the use of elastic scattering spectroscopy for cancer detection. In addition, collaboration between the Section and the Department of Chemistry on the Charles River Campus was established to examine the role of bombesin-like peptide receptors in colorectal cancer (CRC). This research includes the regulation of GRP-receptor expression and the role of agonist stimulation in colorectal and pancreatic cancer tumorigenesis.

Research within the Section is being conducted to investigate the barrier and transport processes that maintain epithelial cell intracellular pH within the intestinal mucosa. Another area of investigation is examination of the role of the bombesin receptor subtype-3 (BRS-3) in obesity and diabetes, with current efforts focused on its role in glucose metabolism in adipopcytes. Other efforts include the examination of the expression of mucin glycoproteins in the oral cavity and GI tract, as well as investigation of mucin gene expression in inflammatory bowel disease (IBD).

Two laboratories within the Section have been engaged in stem cell research, including the genetic manipulation of stem cells via gene transfer and their potential use for stem cellbased therapy for ameliorating several diseases. This research also focuses on the use of different stem cell populations, including embryonic stem cells, induced pluripotent stem (iPS) cells, hematopoietic stem cells, and intestinal stem cells and their genetic manipulation by lentiviral vectors. Another exciting novel area of research involves the transfer of programmed stem cells into the upper small intestine, which, following successful engraftment, will express therapeutic peptides to treat various systemic disorders.

The clinical research effort within the Section is significant and has been highly successful in terms of productivity and visibility. One area involves a determination of the natural history of Barrett's esophagus and the impact of obesity on the development of gastroesophageal reflux disease (GERD) in women in the Nurse's Health Study. Other work focuses on defining the role of shared decision-making as a strategy for increasing patient adherence to CRC screening recommendations, developing a prediction model for advanced colorectal neoplasia based on epidemiologic risk factors alone, and quality improvement issues related to screening colonoscopy.

Collaborative efforts with faculty members of the BU Department of Radiology and the BU School of Public Health have been ongoing to explore the clinical feasibility and validity of novel screening tests, such as CT colography and stool-based DNA testings. In addition, collaborative research with the Section of Infectious Diseases involves the investigation of interactions in individuals co-infected with hepatitis C and HIV. Studies are also in progress to examine the significance of hyperplastic polyps as an alternative pathway in the development of CRC. Finally, collaborative studies are being performed with the Section of Endocrinology to examine mechanisms of vitamin D malabsorption in patients with IBD.

Other areas of clinical investigation include the evaluation of various treatment modalities for hepatitis C and other hepatitides, and the development of an IBD dysplasia and cancer registry. Research is being performed to develop and apply endoscopic approaches for the diagnosis and management of pancreaticobiliary tract disorders, gastrointestinal hemorrhage, and gastrointestinal malignancies. Finally, research aimed at the evaluation of various strategies for the management of functional bowel disorders is being conducted.

Clinical Activities

The GI Section's clinical service under the guidance of Dr. Wolfe and Dr. Francis A. Farraye, Clinical Director of the Section, continues to be highly regarded in terms of quality and quantity, and new, contemporary, and innovative services were added during the past academic year. The Section includes exceptional physicians who possess specific areas of clinical expertise, and who provide outstanding and expeditious clinical service.

Endoscopic services, administered by Dr. David R. Lichtenstein, Director of Endoscopy at BMC, constitute an integral component of the Section's clinical effort. Although the

number of patient visits increased significantly, the number of endoscopic procedures stabilized (Figure 1), owing in part to the departure of three busy clinical faculty members. However, the total number of cases has increased by more than 3-fold since 1996, when Drs. Lichtenstein and Wolfe arrived at BU/BMC. Moreover, the faculty continues to perform



well above (~12.5%) the national mean for faculty within other academic Sections of Gastroenterology in the U.S.

The Endoscopy Center of Brookline, an independent ambulatory endoscopy center located at 930 Commonwealth Avenue, which was established in 2004, continues to provide endoscopic services in a conveniently located facility. This facility is the only endoscopy center in Brookline, and it offers the additional resources necessary to meet the growing demand for screening colonoscopy. It affords patients the option of receiving necessary endoscopic services in an urban, non-hospital-based setting, and it provides the Department of Medicine and BMC the potential for a significant new patient population base. In addition to screening colonoscopy, the number of pancreaticobiliary cases continued to increase in 2008. Endoscopic ultrasonography (EUS) services have also steadily increased BMC's, and more than 200 cases were performed last year. The Section also continues to keep pace with the rapidly expanding technologies offered in the field of gastroenterology. In addition to utilizing capsule video endoscopy, which permits visual examination of the small intestine, the cumbersome tube-based system ambulatory esophageal pH monitoring was replaced by Bravo® capsule technology, which enables wireless pH monitoring for up to 48 hours. Improved patient receptiveness to this new system led to the more accurate diagnosis of GERD and its extraesophageal manifestations. In addition, the Section offers several other diagnostic tests, such as esophageal and anorectal manometry and a variety of breath tests, including *H. pylori* and hydrogen, the latter for intestinal malabsorption.

In addition to the Section's efficient and well-respected inpatient consult service, Drs. Farraye and Steven Sentovich, Chief of Colon and Rectal Surgery at BMC, co-direct the daily activities of the Center for Digestive Disorders (CDD). The CDD, which offers multidisciplinary care for patients with digestive diseases, continued to make impressive strides in 2008 in improving the efficiency and quality of care of patients. Its proficiency and efficiency have enabled it to achieve acclaim throughout Boston's medical community.

The Section's "GUTS" beeper system offers healthcare providers within the BMC, Quincy Medical Center, and the affiliated neighborhood health center network the opportunity to receive expeditious phone consultation and to schedule patients for urgent consultative and endoscopic evaluation. All healthcare providers, including attending physicians, fellows, and other non-physician staff in the Section, are recognized for their prompt and cooperative efforts, expertise, and excellence in providing consultative expertise and care for hospitalized patients with various gastrointestinal disorders. Finally, the GUTS Clinic, an extra clinical session, was added in 2008 to further improve expeditious patient access.

Major Accomplishments in 2008

During 2008, Section faculty members engaged in basic biomedical and clinical research continued to be invited frequently to deliver lectures in various venues throughout Boston, New England, and the United States, as well as in international forums. They also continue to deliver medical grand rounds at BMC and at other hospitals throughout New England and the United States. In addition, numerous manuscripts resulting from Section members' research were published in several high-impact journals during the past year.

Dr. Wolfe was one of only 12 scientists in the U.S. to be named a Hartwell Foundation Scholar in 2008 to fund his cutting-edge research on his proposed use of engineered stem cells to treat diabetes mellitus and other systemic disorders. Moreover, for the fourth consecutive year, he was included in the Castle Connolly list of "Best Doctors in America" and was named one of the "Top Docs" in Boston in 2008.

In 2008, Dr. Farraye continued to serve as Chair of the Board of Governors and a member of the Board of Trustees of the American College of Gastroenterology (ACG). Dr. Schroy continued his leadership roles, including membership on Leadership Team of the

Massachusetts Comprehensive Cancer Control Coalition, Chair of the Massachusetts Comprehensive Cancer Control Coalition's Steering Committee of the Colorectal Cancer Working Group, and Chair of the American Cancer Society/Centers for Disease Control and Prevention's Nominating Committee of the National Colorectal Cancer Roundtable. Dr. Lichtenstein served as the 2008 Co-Director of the Annual Boston International Live Endoscopy (BILE) Course, and he serves on the ASGE Annual Scientific Program Committee as a Subchair of the ERCP Section. Dr. Jacobson serves as the ASGE representative to the National Quality Forum and as a member of the five-member panel of the Nation Quality Forum GI technical advisory panel. Finally, Dr. Singh received a Translation Research Award from the Coulter Foundation to investigate the use of elastic scattering spectroscopy for cancer detection.

Faculty Members Within the Section of Gastroenterology

M. Michael Wolfe, M.D.



Title: Section ChiefFaculty rank: Professor of Medicine; Research Professor of Physiology and BiophysicsUndergraduate college: Ohio State University, Columbus, OHMedical school: Ohio State University, Columbus, OHResidency: Medical College of Pennsylvania, Philadelphia, PA

Chief Residency: Medical College of Pennsylvania, Philadelphia, PA Fellowship: University of Florida, Gainesville, FL Clinical area of interest: Acid-peptic disorders, neuroendocrine tumors Research area of interest: GI regulatory peptides, obesity, GI malignancies

The major interest in Dr. Wolfe's laboratory has always revolved around the physiological and pathological significance of gastrointestinal regulatory peptides. His lab has been conducting investigation aimed at determining the physiological and pathological significance of glucose-dependent insulinotropic polypeptide (GIP). Presently, the lab is investigating the role of GIP in lipid homeostasis and intestinal nutrient absorption. He and his colleagues recently also identified GIP receptors on various malignant cell lines, and they have demonstrated that GIP, which is overexpressed in obesity, increases the proliferation of these cells. Accordingly, the lab has initiated studies to evaluate the role of GIP in obesity-related carcinogenesis. Finally, he and his collaborators are conducting studies aimed at developing methods to program stem cells to synthesize insulin and other therapeutic peptides. They plan to eventually introduce these programmed cells into the upper small intestine, where they will engraft and synthesize and release the peptide into the circulation to treat type 1 diabetes mellitus and other deficiency states.

Uri Avissar, M.D.

Faculty Rank: Assistant Professor of Medicine Undergraduate college: Yale University, New Haven, CT Medical school: University of Rochester School of Medicine, Rochester, NY Residency: University of Pittsburgh Medical Center, Pittsburgh, PA Fellowship: University of Cincinnati, Cincinnati, OH Clinical area of interest: Hepatology, liver transplantation Research area of interest: Liver transplantation

Dr. Avissar's clinical research interests include all aspects of nonalcaholic fatty liver disease (NAFLD), as well as the treatment of viral hepatitis. His other research interest revolves around medical education and fellowship training and he is currently involved in assessing the use of standardized patients for training evaluation during the postgraduate period.

Wanda P. Blanton, M.D.



Faculty Rank: Instructor in Medicine Undergraduate college: Washington University, St. Louis, MO Medical school: Univ. of Kansas School of Medicine, Kansas City, KS Residency: Barnes Jewish Hospital, St. Louis, MO Fellowship: Boston University School of Medicine, Boston, MA Clinical area of interest: General Gastroenterology Research area of interest: Stem cell research

Dr. Blanton's current research uses an *in vivo* model of stem cell transplantation to examine the effects of B-lymphocyte development and proliferation, with the goal of applying these techniques to pursue further research in gastrointestinal diseases as a physician-scientist.

Charles M. Bliss, M.D.



Faculty Rank: Assistant Professor of Medicine Undergraduate college: Amherst College, Amherst, MA Medical school: Boston University School of Medicine, Boston, MA Residency: Boston City Hospital, Boston, MA Fellowship: Boston University School of Medicine, Boston, MA Clinical area of interest: Colon cancer screening, *H. pylori* infection

Research area of interest: Colon cancer screening

Dr. Bliss has assisted in clinical research regarding colon cancer screening and at present, he principally provides subjects for clinical research conducted by others.

Michael O. Boylan, Ph.D.

Faculty Rank: Research Assistant Professor of Medicine Undergraduate college: McGill University, Montreal, Canada Graduate School: McGill University, Montreal, Canada Postdoctoral Fellowship: Massachusetts Institute of Technology, Cambridge, MA Brigham and Women's Hospital, Boston, MA Research area of interest: GI regulatory peptides and their role in obesity; stem cell mediated delivery of therapeutic peptides

Dr. Boylan's research involves the use of a sophisticated molecular approach to engineer embryonic stem (ES) cells and induced pluipotent stem (iPS) cells that synthesize and secrete therapeutic peptides. He is also developing methods for delivering transgenic ES and iPS cells to intestinal mucosa and is studying and evaluating "suicide genes" that will be used to eliminate transgenic ES and iPS cells "on demand.

Francis A. Farraye, M.D., M.Sc.



Title: Clinical Director Faculty Rank: Professor of Medicine Undergraduate college: SUNY at Stony Brook, Stony Brook, NY Graduate school: Harvard School of Public Health, Boston, MA

Medical school: Albert Einstein College of Medicine, Bronx, NY

Residency: Beth Israel Hospital, Boston, MA

Fellowship: Beth Israel Hospital, Boston, MA Clinical area of interest: Inflammatory Bowel Diseases (IBD) Research area of interest: Dysplasia in IBD, hyperplastic polyps and colorectal cancer

Dr. Farraye's clinical interests involve the care of patients with inflammatory bowel disease and the management of colon polyps and colorectal cancer. He is studying newer methods to diagnose dysplasia and cancer in patients with inflammatory bowel disease, vitamin D absorption in patients with Crohn's disease, and predictors of pouchitis after ileal pouch anal anastomosis. In the area of colorectal cancer he is he is examining the role of hyperplastic polyps as an alternative pathway in the development of colorectal cancer.

Albena Halpert, M.D.



Faculty Rank: Assistant Professor of Medicine Undergraduate college: College Peter Beroun, Varna, Bulgaria Medical school: Charles University, Prague, Czech Republic Residency: St. Louis University, St. Louis, MO Fellowship: St. Louis University, St. Louis, MO Research Fellowship: Univ. of North Carolina, Chapel Hill, NC Clinical area of interest: Functional GI and motility disorders

Research area of interest: IBS-related clinical research

Dr. Halpert is funded by a career development grant from the American College of Gastroenterology (ACG) to support her research to evaluate various strategies for the management of functional bowel disorders. She has also received pharmaceutical research support to investigate the efficacy of various agents to treat constipation-dominant irritable bowel syndrome and other functional disorders.

Christopher Huang, M.D.



Faculty Rank: Assistant Professor of Medicine Undergraduate college: Cornell University, Ithaca, NY Med school: Univ. of Medicine and Dentistry New Jersey, Newark, NJ Residency: Brigham and Women's Hospital, Boston, MA Fellowship: Boston University School of Medicine, Boston, MA Clinical area of interest: Pancreaticobiliary diseases, therapeutic

endoscopy, endoscopic ultrasonography Research area of interest: Serrated colonic polyps

Dr. Huang is conducting research aimed at examining the significance of hyperplastic polyps as an alternative pathway in the development of colorectal cancer. Goals of his work in this topic include identifying risk factors for serrated polyps that may have malignant potential, increasing awareness of these polyps, and improving our ability to recognize important serrated lesions that warrant removal and surveillance.

Brian C. Jacobson, M.D., MPH



Title: Associate Director of Endoscopy Faculty Rank: Associate Professor of Medicine Undergraduate college: Amherst College, Amherst, MA Graduate school: Harvard School of Public Health, Boston, MA Medical school: Albert Einstein College of Medicine, Bronx, NY Residency: Brigham and Women's Hospital, Boston, MA

Chief Residency: Brigham and Women's Hospital, Boston, MA Fellowship: Brigham and Women's Hospital, Boston, MA Endoscopy Fellowship: Massachusetts General Hospital, Boston, MA Clinical area of interest: Interventional endoscopy, endoscopic ultrasound, GI cancers Research area of interest: GERD, Barrett's esophagus, colonoscopy outcomes.

Dr. Jacobson conducts epidemiological research investigating risk factors for gastroesophageal reflux disease and Barrett's esophagus. He also conducts colonoscopy outcomes research.

David R. Lichtenstein, M.D.



Title: Director of Endoscopy Faculty Rank: Associate Professor of Medicine Undergraduate college: University of Pennsylvania, Philadelphia, PA Medical school: University of Pennsylvania, Philadelphia, PA Residency: Duke University, Durham, NC Chief Residency: Duke University, Durham, NC

Fellowship: Beth Israel Hospital, Boston, MA
Endoscopy Fellowship: Brigham and Women's Hospital, Boston, MA
Clinical area of interest: Pancreaticobiliary diseases, therapeutic endoscopy
Research area of interest: Gastrointestinal endoscopy, pancreaticobiliary and acid-peptic disorders.

Dr. Lichtenstein's research interests include the clinical application of gastrointestinal endoscopy and development of new instrumentation, and the study of pancreaticobiliary and acid-peptic disorders.

Robert C. Lowe, M.D.



Title: Education Director; Fellowship Training Director Faculty Rank: Associate Professor of Medicine Undergraduate college: Harvard University, Cambridge, MA Medical school: Harvard Medical School, Boston, MA Residency: Brigham and Women's Hospital, Boston, MA Chief Residency: Brigham and Women's Hospital, Boston, MA Fellowship: Boston University School of Medicine, Boston, MA

Clinical area of interest: Viral hepatitis, metabolic liver diseases, cirrhosis and portal hypertension

Research area of interest: Medical education

Dr. Lowe's research interests include new treatments for viral hepatitis, the management of cirrhosis, treatments for the complications of advanced liver disease and cirrhosis, and the management of metabolic liver diseases.

T. Carlton Moore, M.D.



Faculty Rank: Assistant Professor of Medicine Undergraduate college: Yale University, New Haven, CT Medical school: Johns Hopkins University, Baltimore, MD Residency: Hospital of University of Pennsylvania, Philadelphia, PA Fellowship: Boston University School of Medicine, Boston, MA Clinical area of interest: General GI, acid-peptic disorders Research area of interest: GI regulatory peptides, obesity

Dr. Moore is performing laboratory studies to characterize GIP-induced intracellular signaling in adipocytes. He has focused on the mammalian target of rapamycin (mTOR) and

mitogen-activated protein kinase (MAP kinase) signaling pathways that are critical for protein synthesis and cell growth. Initial studies are being performed in an *in vitro* 3T3L1 adipocyte cell culture model and in *ex vivo* rodent fat analysis. A more thorough understanding of the molecular mechanisms through which GIP exerts its insulinotropic effects on adipocytes may result in novel treatments for obesity in the future.

Gustavo Mostoslavsky, M.D., Ph.D.



Faculty Rank: Assistant Professor of Medicine Medical school: National University of Tucuman, Argentina Graduate School: The Hebrew University, Jerusalem, Israel Postdoctoral Fellowship: Harvard Medical School, Boston, MA Research area of interest: Stem cells, gene transfer

Dr. Gustavo Mostoslavsky's research goal is to advance our understanding of stem cell biology with a focus on their genetic manipulation via gene transfer and their potential use for stem cell-based therapy. We believe that by discovering the mechanisms involved in stem cell self-renewal and differentiation we will be able to manipulate stem cell fate and use it as the basis for the correction of several diseases. Project areas in the lab focuses on the use of different stem cell populations, including embryonic stem cells, induced pluripotent stem (iPS) cells, hematopoietic stem cells, and intestinal stem cells and their genetic manipulation by lentiviral vectors.

David P. Nunes, M.D.



Title: Director of Hepatology Faculty Rank: Associate Professor of Medicine Undergraduate college: Univ of Dublin, Trinity College, Dublin, Ireland Medical school: University of Dublin, Trinity College, Dublin, Ireland Residency: Meath Hospital, Dublin, Ireland Fellowship:

Clinical area of interest: Viral hepatitis, metabolic liver diseases, cirrhosis and portal hypertension

Research area of interest: Hepatology

Dr. Nunes enjoys active collaboration with the Section of Infectious Diseases at Boston University School of Medicine as a Co-Investigator of a grant from the NIH that evaluates interactions in individuals co-infected with hepatitis C and HIV (the "HALO" Study). Dr. Nunes has also obtained funding from industry to evaluate various treatment modalities for hepatitis C and other hepatitides.

Gwynneth Offner, Ph.D.

Faculty Rank: Associate Professor of Medicine Undergraduate college: Wellesley College, Wellesley, MA Graduate School: Boston University School of Medicine, Boston, MA Postdoctoral Fellowship: Boston University School of Medicine, Boston, MA Research area of interest: Mucins, epithelial protection and repair, proteomics

Research in Dr. Offner's lab is focused on understanding the contributions of mucin glycoproteins to epithelial protection and repair in the GI tract. The 20 known mucin genes can be divided into two classes: secreted and membrane associated. GI epithelia synthesize mucins of both types, and the aims of her current work are to elucidate how mucins interact to form a protective scaffold and to identify other proteins which contribute to the scaffold through protein-protein interactions. The integrity of the mucin scaffold may have particular relevance to the pathogenesis of inflammatory bowel disease and this is being investigated through cell-based models.

Marcos Pedrosa, M.D., MPH

Faculty Rank: Associate Professor of Medicine
Medical school: Universidade Federal do Rio de Janeiro, Brasil
Graduate school: Boston University School of Public Health, Boston, MA
Residency: Faulkner Hospital, Boston, MA
Chief Residency: Hospital dos Servidores do Estado, Rio de Janeiro, Brasil
Fellowship: New England Medical Center, Boston, MA; Scientist II, USDA Human Nutrition Research Center Aging at Tufts University, Boston, MA
Clinical area of interest: Endoscopic ultrasound, endoscopic mucosal ablation of dysplasia, Hepatitis C
Research area of interest: Hepatitis C, endoscopic ultrasound, Barrett's esophagus,

Outcomes in endoscopy

Dr. Pedrosa is engaged in trials evaluating hepatitis C treatment protocols, utilizing various agents to treat this very common disorder. He has also been an active participant in VA cooperative studies evaluating the use of colchicine and other agents in the treatment of alcoholic liver disease.

Elihu Schimmel, M.D.



Faculty Rank: Professor of Medicine Undergraduate college: University of Illinois, Urbana, IL Graduate school: Mass Institute of Technology, Cambridge, MA Medical school: Yale University School of Medicine, New Haven, CT Residency: Yale-New Haven Hospital, New Haven, CT Chief Residency: Yale-New Haven Hospital, New Haven, CT Fellowship: Massachusetts General Hospital, Boston, MA

Clinical area of interest: Esophageal disease, nutrition Research area of interest: Barrett's Esophagus

Dr. Schimmel has focused his clinical investigation on several gastrointestinal disorders particularly prevalent in the population of military veterans: Barrett's esophagus, inflammatory bowel diseases, and chronic pancreatitis. He maintains an active role in the emerging modalities of Biophotonics as applied to the gastrointestinal tract, including photodynamic therapy, optical coherent tomography, and diagnostic developments for enhanced endoscopic recognition of metaplasia and dysplasia in the esophagus, small intestine, and colon.

Paul C. Schroy III, M.D., MPH



Title: Director of Clinical Research Faculty Rank: Professor of Medicine Undergraduate college: Haverford College, Haverford, PA Graduate school: Boston Univ. School of Public Health, Boston, MA Medical school: Jefferson Medical College, Philadelphia, PA Residency: Cornell II (North Shore University Hospital/Memorial Sloan-Kettering Cancer Center)

Fellowship: Memorial Sloan-Kettering Cancer Center Clinical area of interest: GI Oncology Research area of interest: Colorectal cancer screening and surveillance

Dr. Schroy's research activities focus primarily on the development, implementation and evaluation of model programs for community-based colorectal cancer control. Current ongoing studies include: (1) exploring the role of shared decision-making as a strategy for increasing patient participation in colorectal cancer screening; (2) developing a risk assessment tool for predicting the presence of advanced neoplasia at screening colonoscopy; (3) evaluating the feasibility and validity of novel colorectal cancer screening strategies such as stool-based DNA testing and virtual colonoscopy; and (4) implementation of quality measures related to colorectal cancer screening.

Satish K. Singh, M.D.



Faculty Rank: Assistant Professor of Medicine Undergraduate college: Boston University, Boston, MA Medical school: Boston University, Boston, MA Residency: Strong Memorial Hospital, Rochester, NY Fellowship: Yale University School of Medicine, New Haven, CT Clinical area of interest: Diarrheal diseases, endomicroscopy Research area of interest: Biomedical optics and engineering, nanotechnology, intestinal transport, functional imaging, in vivo and live-cell microscopy, clinical translation, technology transfer

Dr. Singh's lab is focused on translational research spanning concept to clinical application. His main interests are (1) novel biophotonic approaches to endoscopic diagnosis and treatment (2) advances in point-of-service molecular diagnostics using nanoscale microfluidic technologies, and (3) hormonal regulation of intestinal epithelial nutrient transport related to obesity and diabetes mellitus.

H. Christian Weber, M.D.



Faculty Rank: Assistant Professor of Medicine
Medical school: Hamburg University, Hamburg, Germany
Residency: Mainz University, Mainz, Germany; MetroWest
Medical Center, Framingham, MA
Fellowship: Georgetown University, Washington D.C.
National Institutes of Health, Bethesda, MD
Clinical area of interest: Acid-peptic disorders,
neuroendocrine tumors, functional GI disorders, GI polyposis
syndromes

Research area of interest: GI regulatory peptides, obesity, GI malignancy

Dr. Weber's research involves the molecular biology and pharmacology of regulatory peptides of the bombesin/gastrin-releasing peptide family and their respective G proteincoupled receptors. His specific interest is directed toward the understanding of fundamental mechanisms of their regulation in obesity and cancer. Dr. Weber also conducts clinical research both at Boston University as well as the VA Boston Healthcare System. One project comprises several studies regarding the epidemiology of irritable bowel syndrome and related healthcare utilization in a multiracial population.