The Saint Louis University Health Sciences Center

The Health Sciences Center is a 365-bed quaternary care hospital that serves as a major medical center in the metropolitan St. Louis area. The medical center, established in 1930, has a long tradition of community service, patient care, education, and research.

The Division of Gastroenterology and Hepatology

The Division of Gastroenterology and Hepatology at Saint Louis University is one of 15 divisions within the Department of Internal Medicine. During the three-year program, subspecialty residents receive training in the cognitive aspects of consultative gastroenterology and hepatology, in gastrointestinal endoscopy and liver biopsy, and have opportunities for research activities.

The Gastroenterology and Hepatology Subspecialty Residency (Fellowship) Program at Saint Louis University School of Medicine is designed to provide superior training in all aspects of clinical and endoscopic gastroenterology and hepatology. Thus, we expect that graduates of our program will excel in both the cognitive and the procedural aspects of gastroenterology. During the three-year training period, subspecialty residents will have an opportunity to spend 6 to 12 months in laboratory-based or clinical research. An amalgamation of these clinical, procedural, and research experiences will provide the foundation for a future career in academic medicine, as well as clinical practice. The role of the gastrointestinal specialist has been modified with the changes in healthcare delivery and the advent of managed care. We are cognizant of these changes and have tried to design our program to be sufficiently flexible to meet the needs of our trainees and to allow our graduates to be successful in these changing times.

Complex problems in gastroenterology often require a team approach. We are fortunate in having excellent collaborative relations with GI and liver transplant surgeons, diagnostic and therapeutic radiologists, and GI pathologists who interact with us regularly in the care of our patients and in our research efforts. Saint Louis University has active liver and pancreas transplantation programs.
1) Clinical Service

The participating hospitals in the training program are Saint Louis University Hospital, the John Cochran Veterans Affairs Medical Center, and St. Mary's Health Center. A different spectrum of patients and diseases is seen at each of these hospitals.

Subspecialty residents thereby learn consultative gastroenterology and hepatology, and patient management in the setting of a tertiary/quaternary university hospital, a public hospital, and a community hospital. Presently, patient management responsibilities for the division are distributed between several separate services, namely, the Gastroenterology, Liver, Advanced Endoscopy, and Pancreaticobiliary Services.

During the first year of training, subspecialty residents rotate on the Gastroenterology Service at Saint Louis University Hospital and John Cochran Veterans Affairs Medical Center. Subspecialty residents become proficient in basic endoscopic procedures including upper endoscopy and colonoscopy, endoscopic biopsy, polypectomy, esophageal dilatation, endoscopic hemostasis, and percutaneous endoscopic gastrostomy.

The second and third years of training include rotations on the Liver Service, the Advanced Endoscopy Service, the Pancreaticobiliary Service, the general Gastroenterology Service at St. Mary's Health Center, and electives. Electives are presently available in gastrointestinal radiology, pathology, nutrition, pediatric and adolescent gastroenterology, gastrointestinal motility, research, and liver transplant.

When working with the Liver Service, subspecialty residents receive extensive training in the outpatient evaluation and management of patients with a variety of liver diseases. The inpatient experience on the Liver Service includes the evaluation and management of acute liver disease, and pre- and post-transplant problems. Subspecialty residents gain extensive experience in performance of liver biopsy and paracentesis.

When working with the Pancreaticobiliary Service, subspecialty residents attain extensive experience in the evaluation and management of inpatient and complicated outpatient pancreatic and hepatobiliary disorders. At completion of this rotation, subspecialty residents have generally become proficient in the basic aspects of ERCP (e.g., cannulation of the bile and pancreatic ducts). Although subspecialty residents have the opportunity to observe and assist in the more advanced aspects of biliary work (e.g., sphincterotomy, stent placement, lithotripsy, stone removal, sphincter of Oddi manometry, etc.), proficiency in these areas usually cannot be expected without additional training and/or experience.

Subspecialty residents on the Advanced Endoscopy Service receive further training in endoscopic hemostasis and performance of technically complex endoscopic procedures. Subspecialty residents assist in laser, tumor probe, esophageal endoprosthesis, endosonography, enteroscopy, variceal band ligation, and complex polypectomy. However, proficiency in all of these areas usually cannot be expected without additional training.

Subspecialty residents rotating through the motility elective will see outpatients in the Motility Clinic and provide subspecialty consultation for motility related problems on the inpatient service. Subspecialty residents will learn the performance and interpretation of esophageal manometry, ambulatory pH studies, antr-o-duodenal manometry, and anorectal manometry. Subspecialty residents will gain
exposure to the use and interpretation of scintigraphic gastric techniques and will learn techniques used for pelvic floor retraining (constipation) and anal sphincter retraining (fecal incontinence). They will be exposed to autonomic function testing and the use of behavioral techniques in the treatment of functional bowel disorders. By the end of the rotation, the subspecialty residents will have an excellent grasp of evaluation and management strategies in functional bowel disorders and motility disorders. True proficiency requires additional training.

2) Research
Second year subspecialty residents will be involved in a research project under the direction of a faculty preceptor. Current research activities include investigation into mechanisms of hepatic fibrogenesis, gene regulation of hepatic collagen synthesis, regulation of hepatic stellate cell activation, effects of Kupffer cell products on hepatic stellate cells, molecular virology of hepatitis C, role of oxidative stress in hepatic injury, transcriptional activation in Kupffer cells, hepatic cytoplasmic transport of amphipathic molecules, mechanisms of inflammation and fibrosis in the pancreas, pancreatic glutathione metabolism, mechanisms of regulation of iron homeostasis, and intracellular signaling in stellate cells and Kupffer cells. Subspecialty residents are encouraged to interact with investigators in the basic science departments of the university according to their specific research interests and career plans.

A variety of clinical projects are also ongoing. These include evaluation of the efficacy of various types of interferons in chronic hepatitis C, multi-drug therapy for hepatitis C, new drug therapy in hepatitis B, new therapies for alcoholic hepatitis, evaluation of medical therapy in irritable bowel syndrome and sphincter of Oddi dysfunction, evaluation of new methods for endoscopic control of gastrointestinal hemorrhage, identifying the role of the hemochromatosis gene in liver disease, evaluation of new methods for sedation for endoscopic procedures, and management of medical problems in the post-transplant setting. Subspecialty residents are encouraged to present the results of their research experiences at an annual national meeting, such as the American Gastroenterological Association, the American Association for the Study of Liver Diseases, or the American College of Gastroenterology.

3) Goal of Training
The goal of training in the second and third years is for subspecialty residents to develop specific skills in keeping with their career goals. Thus, for someone interested in general gastroenterology practice, involvement in all clinical areas would be appropriate, whereas for someone interested in a research-oriented academic career, an emphasis on research would be appropriate. For someone interested in a career in academic clinical hepatology, extensive work in the Liver Clinic, with the Liver Transplant Service, and with several clinical research projects would be reasonable. The flexibility of the curriculum in the second and third years allows the subspecialty residents to tailor their training according to their career choices.

4) Didactic Teaching
Subspecialty residents and faculty participate in a variety of weekly one-hour conferences. These include:

a) GI/Hepato/Tumor Pathology Conference is held on the first and third Wednesday of each month. This multidisciplinary conference provides an approach to the diagnosis and management of tumor cases with participation from pathology, radiology, and surgery.

b) GI Case Conference is held on alternate Fridays of each month at St. Mary's Health Center (SMHC). Subspecialty residents present two cases in a stepwise fashion with audience participation discussing diagnostic and therapeutic points of relevance.

c) GI Faculty Conference alternates with Case Conference on Friday at SMHC. These are one-hour didactic presentations devoted to pathophysiologic and/or basic science aspects of gastroenterology and results of clinical research presented by SLU GI Faculty, other SLU faculty, or visiting professors.

d) GI Journal Club is held on the first and third Fridays of each month. Subspecialty residents and faculty review major clinical and
research articles in depth.
e) **GI Research Conference** is held on the second Friday of each month. This provides a forum to present research in progress for visiting professors and other SLU faculty in addition to GI faculty and subspecialty residents.
f) **GI Radiology Conference** is held on the fourth Wednesday of each month.
g) **GI Physiology and Pathophysiology Conference** is held on the first Wednesday of each month.
h) **Liver Transplant Conference** is held on Monday afternoon. Patients who are being evaluated or listed for liver transplantation are presented and discussed.
i) **GI Pathology Conference** is held weekly to review interesting biopsy material from the liver service, general GI service, and the colorectal service.

**Recent Visiting Professors**
We have an active visiting professor program. Recently the following individuals visited Saint Louis University:

Richard W. McCallum, M.D.
Chief, Division of Gastroenterology and Hepatology
Professor of Medicine
University of Kansas Medical Center
Kansas City, Kansas

Wendell K. Clarkston, M.D.
Assistant Dean for Graduate Medical Education
Professor of Medicine
Section of Gastroenterology and Hepatology
University of Missouri–Kansas City
Kansas City, Missouri

Carmen Cuffari, M.D.
Assistant Professor of Pediatrics
Department of Pediatrics
Division of Gastroenterology and Nutrition
John Hopkins University
Baltimore, Maryland

Lawrie W. Powell, M.D.
Director, Queensland Institute of Medical Research
Professor of Medicine
The University of Queensland
Brisbane, Australia

Satish S.C. Rao, M.D., Ph.D., FRCP (Lon)
Director of Neurogastroenterology and GI Motility
Associate Professor of Medicine
Division of Gastroenterology and Hepatology
University of Iowa College of Medicine
Iowa City, Iowa

Phillip Rosenthal, M.D.
Associate Professor of Pediatrics
University of California
San Francisco, California

William B. Silverman, M.D.
Associate Professor of Medicine
Division of Gastroenterology and Hepatology
University of Iowa Hospitals and Clinics
Iowa City, Iowa

William J. Tremaine, M.D.
Director, IBD Clinic
Associate Professor of Internal Medicine
Mayo Clinic
Rochester, Minnesota
St. Louis is a historical city which offers a blend of urban sophistication and Midwestern friendliness, internationally recognized cultural institutions, and major league sports. The cost of living in St. Louis is lower than nearly all other large metropolitan areas, and the housing market is ranked as one of the most affordable in the nation. Communities range from eclectic urban neighborhoods to sprawling country subdivisions. St. Louis has a diversified economy and is a center of high technology, services, healthcare, distribution, and office facilities with a remarkable concentration of corporate headquarters, with five of the nation's Fortune 100 industrial corporations located here. Based on a comprehensive analysis of climate, terrain, housing, healthcare, environment, crime, transportation, education, the arts, recreation, and economics, St. Louis is ranked in the top 10% of places to live in North America.

Some of the finest educational facilities in the country are located here with over 30 private, elementary, and secondary schools in the area. For higher education, there are approximately 20 universities and colleges.

There are numerous shopping centers around St. Louis as well as many fine specialty shops, antique shops, department stores, museums, galleries, and many fine restaurants.

For sports enthusiasts, we have it all — the St. Louis Rams football team, the St. Louis Blues hockey team, the St. Louis Cardinals baseball team, the Saint Louis University Billiken basketball team and the Vipers roller hockey team.

St. Louis offers access to excellent cultural opportunities, many of which have free or low admission. To name a few, Forest Park is a 1,300 acre park comprised of the prestigious St. Louis Art Museum, which is considered to be among the nation's top ten museums, the renowned St. Louis Zoo, St. Louis Symphony Orchestra, the Muny Theater, and the St. Louis Science Center. Another major attraction in St. Louis is the Missouri Botanical Garden which houses the first geodesic dome and the largest traditional Japanese garden in North America.
A spectacular view of the city skyline and of the Mississippi River with its river boats which offer gambling, restaurants, and excursions can be seen from the top of the Gateway Arch. Located by the Mississippi River in downtown St. Louis is historic Laclede's Landing with cobblestone streets lined with shops, dining, entertainment, and horse-drawn carriages.

Missouri has numerous state parks, lakes and rivers for outdoor recreational activities for those who like to camp, fish, hunt, canoe, and swim. Serious bicyclists can ride the Katy Trail, a 38-mile breathtaking route along the Missouri River Valley which goes into the heart of wine country, or ride the Great River Road which runs along the Mississippi River with its fantastic bluffs. St. Louis is never dull, since there is always something going on. It is a fantastic place to live!