

MILLER, FRANK.

Northwestern University
Feinberg School of Medicine

Department of Radiology
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NORTHWESTERN
UNIVERSITY

November 15, 2007

Richard Green, MD
Associate Professor
Chief, Division of Hepatology
303 E Chicago Ave., Ward 1-003
Chicago, IL 60611-3008

Dear Dr. Green,

I have participated in the Medical Student Summer Research Program in the past and have enjoyed working with medical students. The students have been very helpful to my research and I think that they have benefited significantly from the research experience. I have included a brief summary of my research experience and am happy to discuss in more detail. Enclosed please find a copy of my biosketch.

Sincerely,

A handwritten signature in cursive script that reads "Frank Miller, M.D.".

Frank Miller, M.D.
Professor of Radiology
Chief, Body Imaging Section and Fellowship and GI Radiology
Director, MR Imaging Northwestern Memorial Hospital

**Medical Student Summer Research Program (MSSRP)
and Research Thesis Program (RTP)
Mentor Information**

1) Research description

Dr. Frank Miller is chief of body imaging section and fellowship in the department of radiology. His interests are in abdominal imaging related to gastrointestinal and genitourinary radiology. He has numerous ongoing projects related to evaluation of imaging of tumors as well as other projects. Recent projects with research trainees including medical students, residents and fellows include: pancreatic MR imaging for pancreatic cancer and inflammation, diffusion MR imaging of the liver, CT imaging of paraduodenal hernias as well as imaging of patients with Yttrium therapy. He is also writing 2 books related to GI and GU radiology.

Dr. Miller has worked with numerous (over 20) medical students from Northwestern and other institutions in Chicago and other countries. These students have published multiple papers and have the opportunity to present their work at national meetings. He would be happy to discuss specifics with the applicant. It would be best if there is a concentrated amount of time available to do the research.

Future projects will likely relate to abdominal imaging most likely related to MR or CT. The project will be selected based on the skills and interests of the applicant with many projects ongoing.

2) Cover letter explaining the reasons for your interest in becoming a mentor.

See Enclosed

3) Current Biosketch

See Enclosed

4) Trainees over the past 5 years (undergraduate, medical or graduate students; post-doctoral fellows)

MinMin Hwang, MD

Ana Keppke, MD

Kshitij Dalal, MD

Sagar Shroff, (current M2 Northwestern)

Numerous Body Imaging Fellows- Nancy Rini, Steve Herwick, Gagan Ahuja

Research area:

(x) Clinical Science

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

| | | | |
|--|---|----------------|-------------------------------------|
| NAME Frank H. Miller, MD | POSITION TITLE Professor of Radiology Director of Body Imaging Section, Director of MRI Chief of Gastrointestinal Radiology | | |
| eRA COMMONS USER NAME | | | |
| EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i> | | | |
| INSTITUTION AND LOCATION | DEGREE <i>(if applicable)</i> | YEAR(s) | FIELD OF STUDY |
| Northwestern University Medical School | BS/MD | 1988 | Six Year Medical Program |
| Northwestern Memorial Hospital | | 1989 | Internal Medicine Internship |
| Northwestern Memorial Hospital | | 1993 | Radiology Residency |
| Brigham and Women's Hospital/Harvard University | | 1994 | Body Imaging Fellowship |
| Hospital of University of Pennsylvania | | 1994 | GI Radiology Fellowship (4mons.) |

A. POSITIONS AND HONORS

Positions and Employment

1994 -2007 Director, GI Radiology Northwestern Memorial Hospital/ Northwestern University
 2002 - Director, Body Imaging Section and Fellowship, Northwestern Memorial Hospital/
 Northwestern University

Honors

- Chief Resident Diagnostic Radiology, Northwestern University 1992-1993
- Picker – AUR Faculty Development Program Representative (\$1000) – AUR San Diego, attended by 40 selected junior radiology faculty members, 1995
- Excellence in Teaching Award, awarded by radiology residents 1997-1998
- Expert Panelist, Gastrointestinal Tract Radiology, Continuous Professional Improvement (CPI) Series sponsored by American College of Radiology 1998 – Present
- Editor, Radiologic Clinics of North America. Pancreas, Gallbladder, and Biliary Imaging
- Figley Fellowship in Radiology Journalism, competitive fellowship where 2 people are selected per year for an editorial program with the American Journal of Roentgenology. 2002
- Selected Fellow, Society of Body Ct and MR, 2007.
- Selected Fellow, Society of Genitourinary Radiology, 2007.
- Roscoe Miller award for best scientific paper in meeting-2007 Society of Gastrointestinal Radiology.

B. Selected peer-reviewed publications

(Publications selected from 47 peer-reviewed publications)

1. **Miller FH**, Butler RS, Hoff FL, Fitzgerald SW, Nemcek AA, Gore RM. Using triphasic helical CT to detect focal hepatic lesions in patients with neoplasms. AJR Am J Roentgen 1998; 171:634-649.
2. Brown DL, Doubilet PM, **Miller FH**, Frates MC, Laing FC, DiSalvo DN, Benson CB, Lerner M. Benign and malignant ovarian masses: selection of the most discriminating gray-scale and Doppler sonographic features. Radiology 1998; 208(1):103-110.
3. **Miller FH**, Whitney WS, Fitzgerald SW, Miller EI. Seminomas complicating undescended intra-abdominal testes in patients with prior negative surgical exploration. AJR Am J Roentgen 1999;172:425-428.
4. Sica GT, Braver J, Cooney MJ, **Miller FH**, Chai JL, Adams DF. Comparison of endoscopic retrograde cholangiopancreatography with Magnetic Resonance Cholangiopancreatography in patients with pancreatitis. Radiology 1999; 210:605-610.
5. Gore RM, **Miller FH**, Pereles FS, Yaghamai V, Berlin JW: Helical CT in the evaluation of the acute abdomen. Centennial Dissertation. AJR Am J Roentgen 2000; 174: 901-913.
6. Ly JN, **Miller FH**. Periportal contrast enhancement and abnormal signal intensity on state-of-the-art MR images. AJR Am J Roentgen 2001; 176:891-897.

7. **Miller FH**, Ma JJ, Scholz FJ. Imaging features of enterohemorrhagic E. coli. *AJR* 2001; 177:619-623.
8. Baskaran V, Pereles FS, Nemcek AA, Carr JC, **Miller FH**, Ly J, Krupinski E, Finn JP. Gadolinium-enhanced 3D MR Angiography: A pilot comparison of maximum intensity projection, multiplanar reformatting, and 3D volume-rendering postprocessing algorithms. *Acad Radiol* 2002; 9: 50-59.
9. Sica GT, **Miller FH**, Rodriguez G, McTavish J, Banks PA. Magnetic resonance imaging in patients with pancreatitis: evaluation of signal intensity and enhancement changes. *J Magn Reson Imaging* 2002; 15: 275-284.
10. **Miller FH**, Hwang CM, Gabriel H, Goodhartz L, Omar AJ, Parsons WG. The features of choledocholithiasis on contrast-enhanced helical CT. *AJR Am J Roentgen* 2003;181:125-130.
11. Betts, MT, Huo EJ, **Miller FH**. Gastrointestinal and genitourinary smooth muscle tumors. *AJR Am J Roentgenol*. 2003 Nov;181(5):1349-54.
12. Johnson DC, Toledano AY, Herman BA, Dachman AH, McFarland EG, Barish MA, Brink, JA, Ernst RD, Fletcher JG, Halvorsen RA, Jr, Hara AK, Hopper KD, Koehler RE, Lu DSK, Macari M, MacCarty RL, **Miller FH**, Morrin M, Paulson EK, Yee J, Zalis M. The American College of Radiology Imaging Network (ACRIN) A6656. Computerized Tomographic Colonography: Performance Evaluation in a Retrospective Multicenter Setting. Short title: Performance at CT Colonography. *Gastroenterology*. 2003 Sep;125(3):688-95. Multi-Institutional ACRIN trial
13. Reeders JWAJ, Yee J, Gore RM, **Miller FH**, Megibow AJ. Gastrointestinal infection in the immunocompromised (AIDS) patient. *European Radiology*. 2004; 14 (3): E84-102.
14. **Miller FH**, Hwang CM. An initial experience: using helical CT imaging to detect obscure gastrointestinal bleeding. *Clinical Imaging*. 2004; 28 (4): 245-251.
15. Nikolaidis P, Hwang CM, **Miller FH**, Papanicolaou N. The non-visualized appendix: incidence of acute appendicitis when secondary inflammatory changes are absent. *AJR Am J Roentgen* 2004; 183:889-92
16. Gabriel H, Pizzitolla V, McComb EN, Wiley E, **Miller FH**. Adrenal Lesions with Heterogeneous Suppression on Chemical Shift Imaging: Clinical Implications. *J Magn Reson Imaging*. 2004; 19: 308-316.
17. Buchman AL, **Miller FH**, Chowdhry AA, Wallin A, Ahn C. Videocapsule Endoscopy versus Barium Contrast Studies for the Diagnosis of Crohn's Disease Recurrence Involving the Small Intestine. *The American Journal of Gastroenterology* 2004; 99 (11), 2171-2177.
18. **Miller FH**, Keppke A, Dalal K, Kammler VA, Sica GT. MR imaging of pancreatitis and its complications: part 1, acute pancreatitis. *AJR Am J Roentgen* 2004. 183: 1637-1644.
19. **Miller FH**, Keppke A, Wadhwa A, Ly JN, Dalal K, Kammler VA. MR imaging of pancreatitis and its complications: part 2, chronic pancreatitis. *AJR Am J Roentgen* 2004. 183:1645-1652.
20. **Miller FH**, Kraemer E, Dalal K, Keppke A, Huo E, Hoff FL. Unexplained renal colic: what is the utility of IV contrast. *Clin Imaging* 2005; 29: 331-336.
21. Nikolaidis P, Siddiqi AJ, Carr JC, Vogelzang RL, **Miller FH**, Chrisman HB, Omary RA. Incidence of Non-Viable Fibroids on Contrast Enhanced Pelvic MRI in Patients Referred for Uterine Artery Embolization. *J Vasc Interv Radiol* 2005; 16: 1465-1471.
22. Deng J, Rhee TK, Salem R, Haines K, Paunesku T, Mulcahy MF, **Miller FH**, Omary RA, Larson AC. In vivo diffusion weighted imaging of liver tumor necrosis in the VX2 rabbit model at 1.5 Tesla. *Investigative Radiology* 2006; 41:410-414.
23. Deng J, **Miller FH**, Salem R, Omary RA, Larson AC. Multishot diffusion weighted PROPELLER magnetic resonance imaging of the abdomen. *Invest Radiol*. 2006 Oct;41(10):769-75.
24. **Miller FH**, Rini N, Keppke A. MR imaging of Adenocarcinoma of the Pancreas. *AJR Am J Roentgen* 2006 Oct;187(4):W365-74.
25. Deng J, **Miller FH**, Rhee TK, Sato KT, Mulcahy MF, Salem R, Omary RA, Larson AC. Diffusion-Weighted MRI for Determination of Hepatocellular Carcinoma Response to Yttrium-90 Radioembolization. *J Vasc Interv Radiol* 2006; 17: 1195-1200.
26. Herwick S, **Miller FH**, Keppke A. MR imaging of islet cell tumors of the pancreas. *AJR Am J Roentgen* 2006 Nov;187(5):W472-80.

27. Keppke AL, Salem R, Reddy DH, Huang J, Jin J, Larson A, **Miller FH**. Imaging of hepatocellular carcinoma following treatment with Yttrium-90 microspheres. *AJR*. 2007; 188:765-767.
28. **Miller FH**, Keppke AL, Reddy DH, Huang J, Jin J, Mulcahy MF, Salem R. Tumor response of liver metastases following intra-arterial treatment with Yttrium-90 microspheres: role of size, necrosis and PET Imaging. *AJR*. 2007;188:776-783.
29. **Miller FH**, Keppke AL, Yaghmai V, Gabriel H, Hoff F, Chowdhry A, Smith N. CT diagnosis of chyluria following partial nephrectomy. *AJR* 2007; 188: W25-28.
30. Lewandowski R, Wang D, Gehl J, Atassi B, Ryu R, Sato K, Nemcek A, **Miller F**, Mulcahy M, Kulik L, Larson A, Salem R, Omary RA. A Comparison of Chemoembolization Endpoints Using Angiographic vs Transcatheter Intraarterial Perfusion (TRIP) - MRI Monitoring. *JVIR* 2007;18:1249-1257.

C. Research support

Ongoing

Northwestern Memorial Foundation Grant 01/01/2000 – 12/31/06
 Frank H. Miller, M.D. (PI)
 “Computed Tomographic Colonoscopy Program”
 The goal of this project is to start a CT colonoscopy program at Northwestern Memorial Hospital

U01 DK062467 NIH/NIDDDKD 09/17/02-8/31/09
 NIH Collaborative Grant. #5
 “Adult Liver Doner Liver Transplant – a Comparative Analysis”
 The goal of this project is to research the impact of Hepatic Steatosis in Donor and the impact of HCC staging in Recipient.
 Role: Co-Investigator

RO1 CA 095279-01A1 07/01/03-06/30/08.
 NIH/NCI
 Yosida (PI)
 Principal Investigator Hiroku Yoshida, PhD, University of Chicago; serving as consultant Computerized Detection of polyps in CT colonography Serving as consultant. The main objective of this project is to advance the early detection of colon cancer. To this end the goal of the project is to develop a high-performance computer-aided diagnosis (CAD) scheme for the automated detection of polyps in TC to assist radiologists in detecting polyps quickly and accurately by providing them with a “second opinion” regarding the locations of suspicious polyps
 Role: Consultant

Northwestern Memorial Hospital Excellence in Academic Medicine Program. 07/01/02 – 03/31/06
 “3D Multimedia Laboratory/Imaging Program”
 Project directors. Drs. Matthew T. Walker, Eric J. Russell
 Role: Co-Investigator

Completed

Given Imaging Ltd. Yoqneam Israel 01/01/03 – 12/31/03
 Alan L. Buchman, M.D. (PI)
 “Performance evaluation of the Given Video Capsule System in the Endoscopic assessment of Crohn’s disease”.
 The goal of this project was to assess the ability of the Given Video Capsule system to assist in detection and evaluation of Crohn’s Disease compared to conventional small bowel series.
 Role: Co-Investigator