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NORTHWESTERN
UNIVERSITY

November 12, 2007

Re: Medical Student Summer Research Program (MSSRP) and Research Thesis Program (RTP)

Dear MSSRP/RTP Committee Members:

I am writing this letter to express my strong interest in becoming a mentor for the MSSRP/RTP programs. I have been a faculty member in the Division of Hepatology and Organ Transplantation since 2005 and have had a longstanding interest in medical education. I personally benefited from early mentoring experiences at the National Cancer Institute and Howard Hughes Medical Institute and understood then the value and importance of a mentor. Throughout my training I have received outstanding mentorship from junior and senior clinicians, and learning from those experiences, I have developed the facility needed when it comes to presenting at meetings and publishing papers. One of those mentors, Dr. Andre Kalil, was a transplant infectious physician at the University of Nebraska who helped me develop the skills required for developing clinical research projects. What was also notable about Dr. Kalil was that he was only a few years out of fellowship, and, as such, had the drive and energy to mentor me and work closely with me, providing the right balance of guidance and independence.

I feel that I am now at a similar stage in my career as Dr. Kalil was when he acted as my mentor. I have the background, training and enthusiasm necessary in order to positively affect the career development of physicians-in-training. I was the chief fellow at the University of Chicago during my gastroenterology fellowship and have recently been managing the transplant hepatology fellowship at Northwestern, both of which have given me significant insight into training and mentorship. I am also near completion of a Masters in Clinical Investigation at Northwestern and have received grant support to perform transplant research from the American Association for the Study of Liver Diseases. Over the last two years, I do have experience mentoring residents and fellows on research projects, one of which led to a publication and others currently being prepared for abstract and manuscript submissions. All of these experiences have given me the necessary background to provide mentorship. The MSSRP/RTP program would allow me to have more focused relationships with trainees, and as a result, dedicate the time and effort toward their career development. I believe I have the background, skills, dedication, and energy to participate in this program and hope to form long term relationships with my trainees preparing for academic careers.

Enclosed is a description of my clinical/translational research interests in the field of liver transplantation, as well as my biosketch and list of prior trainees. If there is any further information required, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Josh Levitsky".

Josh Levitsky, MD
Assistant Professor of Medicine and Surgery

Phone: 312-695-4413

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Levitsky (MSSRP), Research Description

As a transplant hepatologist, I have specific research interests in transplant immunology and have focused my career on minimizing complications of immunosuppressive (IS) therapy to improve long-term outcomes after transplantation. My recent aims have been directed towards converting patients to less toxic IS therapy or minimizing/withdrawing IS altogether. It is known that of all organ transplant recipients, liver recipients have the highest likelihood of favorable withdrawal from IS therapy (tolerance). However, previous data have shown that only 20% of patients were able to be successfully withdrawn. Therefore, novel strategies are needed to induce "tolerance" after transplantation and evaluate the ability to withdraw, thereby enabling the selection of patients that will have a higher rate of withdrawal success (i.e. 40-50%). To do this and improve on the 20% rate, immunologic testing of patient's blood and tissues (liver graft, bone marrow) may be required to potentially predict which patients will have the highest likelihood of successful IS withdrawal. These approaches, which include testing patients and possibly withdrawing IS in select candidates, are central to my research in transplantation. At Northwestern, I have strong collaborations with members of the transplant surgery division, who can measure these tests of immunological function in their respective laboratories and provide clinical and laboratory guidance. I am part of a group of investigators that work closely together (weekly individual and group meetings) to apply these basic immunological tests to the clinical setting, with the hopes of affecting patient management and outcomes. I have also received a junior investigator grant from the American Association for the Study of Liver Diseases to support much of this research. Multiple clinical and translational opportunities for MSSRP/RTP investigation would be available along these lines, as well as other related clinical transplant investigations. They are outlined as follows:

- 1) Comparison of immunological function and tests of tolerance in combined liver-kidney transplant recipients vs. liver alone vs. kidney alone. Hypothesis would be that liver-kidney recipients may have a tolerant profile at baseline, particularly in comparison to kidney recipients alone, and potentially able to be withdrawn off IS.
- 2) Comparison of tolerance profiles of different IS therapy, with the hypothesis that certain IS drugs (sirolimus, mycophenolate mofetil) may promote a higher state of immunological tolerance compared to other IS therapies (tacrolimus, cyclosporine). Potential studies involve testing transplant patients or laboratory investigations involving *in vitro* testing of agents.
- 3) Current protocols are being developed that involve measurement of immunological profiles after converting patients from tacrolimus to sirolimus and also pre- and post-IS withdrawal in patients treated or not treated with a prior lymphocyte depletion therapy (alemtuzumab). Opportunities to be involved in project development, performance, and analysis will be available.
- 4) Analyzing outcomes of patients treated with different IS induction or long term therapies, such as alemtuzumab, sirolimus, and mycophenolate mofetil, in comparison to more standard IS regimens.
- 4) Other potential clinical transplant projects:
 - a. Retrospective review of hepatitis C treatment after liver transplantation
 - b. Hepatic artery stenosis after liver transplantation: clinical utility of early diagnosis and management by ultrasonography (prospective trial)
 - c. Pegylated interferon induced graft dysfunction during hepatitis C therapy after liver transplantation: retrospective, multicenter review (risk factors, outcomes)
 - d. Mycophenylate mofetil monotherapy after liver transplantation: retrospective review

BIOGRAPHICAL SKETCH

NAME Levitsky, Josh		POSITION TITLE Assistant Professor of Medicine	
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 (if applicable)	YEAR(s)	FIELD OF STUDY
University of Michigan, MI	B.S.	1993	Biology (High Distinction)
Albert Einstein College of Medicine, NY	M.D.	1998	Medicine (Alpha Omega Alpha)
Northwestern University, IL	M.S.	Expected graduation, 2008	Clinical Investigation

A. Positions and Honors**Positions and Employment**

1998-2001	Resident, Internal Medicine, University of Chicago Hospitals, Chicago, IL
2001-2004	Fellow, Gastroenterology, University of Chicago Hospitals, Chicago, IL (Chief Fellow 2002-2003)
2003-2005	Fellow, Transplant Hepatology, University of Nebraska Medical Center, Omaha, NE
2005-Present	Assistant Professor of Medicine, Northwestern University Feinberg School of Medicine, Division of Hepatology, Chicago, IL
2007-Present	Fellowship Director, Transplant Hepatology (non ACGME), Northwestern Memorial Hospital, Chicago, IL

Other Experiences and Professional Membership

2000-Present	Illinois State Medical License
2001	American Board of Internal Medicine – Internal Medicine
2003-2006	Iowa State Medical License
2003-2006	Nebraska State Medical License
2004	American Board of Internal Medicine - Gastroenterology
2006-Present	American Association for the Study of Liver Diseases
2006-Present	American College of Gastroenterology
2006-Present	American Gastroenterological Association
2006-Present	American Society of Transplant Surgeons
2006-Present	American Society of Transplantation
2007	American Board of Internal Medicine – Transplant Hepatology
2007-Present	International Liver Transplantation Society

Honors

1993	Class Honors, University of Michigan, MI
1993	Angell Scholar, University of Michigan, MI
1993	Student Research Training Fellowship, National Cancer Institute, MD
1994	Research Training Award, Howard Hughes Medical Institute, University of Michigan, MI
1998	Alpha Omega Alpha (AQA) Medical Honor Society
2004-2005	Training Award, AASLD/Schering Hepatology Fellowship Award, NE
2006-2008	Loan Repayment Program (Clinical Research), National Institutes of Health
2008-2010	AASLD Career Development Award in Liver Transplantation (start July 2008)

B. Selected Peer-reviewed publication (in chronological order)Original Peer-Reviewed Research Articles:

1. Levitsky J, Te HS, Cohen SM. The safety and outcome of joint replacement surgery in liver transplant recipients. *Liver Transplantation* April 2003; 9(4): 373-6.
2. Levitsky J, Hart J, Cohen SM, Te HS. The effect of immunosuppressive regimens on the recurrence of primary biliary cirrhosis after liver transplantation. *Liver Transplantation* July 2003; 9(7): 733-6.
3. Ehrenpreis ED, Jani AB, Levitsky J, Hong JJ, Ahn J. A prospective, randomized, double-blind, placebo-controlled trial of retinol palmitate (vitamin A) for symptomatic radiation proctopathy. *Diseases of the Colon and Rectum* January 2005; 48(1): 1-8.
4. Levitsky J, Kalil A, Meza JL, Hurst GE, Freifeld A. Herpes zoster infection after liver transplantation: a case-control study. *Liver Transplantation* March 2005; 11(3): 320-325.
5. Cohen SM, Te HS, Levitsky J. Operative risk of total hip and knee arthroplasty in cirrhotic patients. *The Journal of Arthroplasty* June 2005; 20(4): 460-466
6. Levitsky J, Kalil A, Meza JL, Hurst GE, Freifeld A. Chicken pox after pediatric liver transplantation. *Liver Transplantation* 2005 Dec;11(12):1563-1566.
7. Kalil A, Levitsky J, Lyden E, Stoner J, Bargenquast K, Lesiak B, Freifeld AG. The efficacy of pre-emptive and universal prophylaxis strategies to prevent organ disease by cytomegalovirus in solid organ transplant recipients: a systematic review and metaanalysis. *Annals of Internal Medicine* 2005; 143: 870-880.
8. Norvell JP, Blei AT, Jovanovic BD, Levitsky J. Herpes simplex virus hepatitis: an analysis of the published literature and institutional cases. *Liver Transplantation* 2007 Oct;13(10):1428-34
9. Levitsky J, Singh N, Wagener M, Abecassis MA, Ison MG. A survey of cytomegalovirus prevention strategies after liver transplantation. *American Journal of Transplantation* 2007 Oct 31; [Epub ahead of print]
10. Singh N, Wagener M, Cacciarelli TV, Levitsky J. Antifungal management practices in liver transplant recipients. *American Journal of Transplantation* (in press)
11. Levitsky J, Freifeld AG, Puumala S, Bargenquast K, Hardiman P, Gebhart C, Wrenshall L, Langnas A, Kalil A. Cytomegalovirus viremia in solid organ transplantation: does the initial viral load correlate with risk factors and outcomes. *Clinical Transplantation* (in press)

Editorial, Reviews, Chapters, Books, Commentaries:

1. Levitsky J, Gurell D, Frishman W. Sodium ion/hydrogen ion exchange inhibition: a new pharmacologic approach to myocardial ischemia and reperfusion injury. *Journal of Clinical Pharmacology* October 1998; 38(10): 877-897.
2. Levitsky J: Urinary incontinence. In: Halasyamani LK, Lucas BP, eds. *Pocket Primary Care*. Lippincott Williams & Wilkins: Philadelphia; 2001:140-141.
3. Levitsky J: Constipation. In: Halasyamani LK, Lucas BP, eds. *Pocket Primary Care*. Lippincott Williams & Wilkins: Philadelphia; 2001: 97-98.
4. Levitsky J. American Association for the Study of Liver Diseases- 53rd Annual Meeting report, 1-5 November 2002, Boston, MA, USA. *The Investigational Drugs Journal* January 2003; 6(1): 30-3.
5. Levitsky J, Ehrenpreis ED: Proctitis and proctopathy. In: Johnson LR, ed. *Encyclopedia of Gastroenterology*. Volume 3. Elsevier: San Diego; 2004: 236-241.
6. Levitsky J, Konda VJ, Samarasinghe SP, Faust TW: AIDS, Hepatic manifestations of. In: Johnson LR, ed. *Encyclopedia of Gastroenterology*. Volume 1. Elsevier: San Diego; 2004: 16-20.
7. Levitsky J, Troy TN, Faust TW: Hepatorenal syndrome. In: Johnson LR, ed. *Encyclopedia of Gastroenterology*. Volume 2. Elsevier: San Diego; 2004: 351-354.
8. Levitsky J, Mailliard M. Diagnosis and treatment of alcoholic liver disease. *Seminars in Liver Disease* August 2004; 24(3): 233-247.
9. Levitsky J, McCashland TM: Portopulmonary hypertension. In: Reddy KR, Faust TW, eds. *Clinicians's Guide to Liver Disease*. SLACK Inc: New Jersey; 2006: 283-293.

10. Levitsky J, McCashland TM: Hepatopulmonary syndrome. In: Reddy KR, Faust TW, eds. Clinicians's Guide to Liver Disease. SLACK Inc: New Jersey; 2006: 271-280.
11. Levitsky J, Cohen SM. The liver transplant recipient: what the family physician needs to know. Journal of Family Practice 2006 Feb; 55(2):136-44.
12. Levitsky J. Approach to the critically ill patient with chronic liver disease. In: Hall JB, Schmidt GA, eds. Just the Facts: Critical Care. McGraw Hill: New York.
13. Levitsky J, Sorrell MF. Hepatobiliary complications of hematopoietic cell transplantation. In: Schiff ER, Sorrell MF, Maddrey WC, eds. Schiff's Diseases of the Liver. 10th Edition. Lippincott Williams & Wilkins: Philadelphia.
14. Levitsky J. Probiotics: application of "healthy" bacteria to liver transplant recipients. Hepatology. 2006 Aug;44(2):507-10.
15. Ahya SN, Jose Soler M, Levitsky J, Battle D. Acid-base and potassium disorders in liver disease. Semin Nephrol. 2006 Nov;26(6):466-70.
16. Levitsky J, Sorrell MF. Hepatic complications of hematopoietic cell transplantation. Curr Gastroenterol Rep. 2007 Mar;9(1):60-5.

Case Reports, Technical Notes, Letters:

1. Levitsky J, Harrison JR, Cohen RD. Crohn's disease and Takayasu's arteritis. Journal of Clinical Gastroenterology April 2002; 34(4): 454-6.
2. Levitsky J, Faust TW, Cohen SM, Te HS. Group G streptococcal bacteremia and de novo hepatocellular carcinoma after liver transplantation. Liver Transplantation June 2002; 8(6): 572.
3. Levitsky J, Te HS, Faust TW, Cohen SM. Varicella infection following varicella vaccination in a liver transplant recipient. American Journal of Transplantation October 2002; 2(9):880-2.
4. Levitsky J, Hong JJ, Jani AB, Ehrenpreis ED. Oral vitamin A therapy for a patient with a severely symptomatic post radiation anal ulceration: report of a case. Diseases of the Colon and Rectum May 2003; 46(5): 679-682.
5. Levitsky J, Alli TA, Wisecarver J, Sorrell MF. Fulminant hepatic failure associated with the use of black cohosh. Digestive Diseases and Sciences March 2005; 50(3):538-9.

C. Research Support. List selected ongoing or completed research projects (federal and non-federal support). Begin with the projects that are most relevant to the research proposed in this application. Briefly indicate the overall goals of the projects and your role (e.g. PI, Co-Investigator, Consultant) in the research project. Do not list award amounts or percent effort in projects.

1. "Immune Tolerance Profiles after Conversion from Tacrolimus to Sirolimus in Liver Transplant Recipients", PI: Levitsky J. AASLD Career Development Award in Liver Transplantation and Pharmaceutical Support. Funding Agency: AASLD, Wyeth Pharmaceuticals. Period of Support: begin 7/08.
2. "Immune tolerance and alloreactivity in liver transplant recipients on different monotherapy immunosuppressive agents", PI: Levitsky J. Pilot and Feasibility Grant. Funding Agency: Division of Organ Transplantation (T32 Training Grant in Transplantation), Northwestern Memorial Hospital. Period of Support: 7/07-present.
3. "Probiotics: a new approach to correct intestinal permeability of patients with cirrhosis awaiting liver transplant", PI: Levitsky J. Pharmaceutical support and General Clinical Research Center (GCRC). Funding Agency: VSL Pharma, GCRC, Northwestern Memorial Hospital. Period of Support: 6/06-present.
4. "Predictors of Outcomes with Pegylated Interferon Treatment After Liver Transplantation: A Multicenter Case-Control Study", PI: Levitsky J. Pharmaceutical support. Funding Agency: Schering-Plough. Period of Support: begin 11/07.

List of Trainees (Levitsky)

2006-present	John Paul Norveli, MD Resident, Internal Medicine	Northwestern Memorial Hospital
2006-present	Amisha Wallia, MD Resident, Internal Medicine	Northwestern Memorial Hospital
2006-present	Neehar Parikh, MD Resident, Internal Medicine	Northwestern Memorial Hospital
2005-2007	Eva Sotil, MD Fellow, Hepatology	Northwestern Memorial Hospital
2007- present	Kavitha Reddy, MD Fellow, Hepatology	Northwestern Memorial Hospital

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

- 1) Research description (maximum 1 page):
 - a) General research description
 - b) Description of potential MSSRP or RTP projects
- 2) Cover letter explaining the reasons for your interest in becoming a mentor
- 3) Current Biosketch
- 4) Trainees over the past 5 years (undergraduate, medical or graduate students; post-doctoral fellows)

Research area (check all that apply):

- Basic Science
- Translational Science
- Clinical Science
- Other _____