

Petros C. Karakousis, M.D.

CURRICULUM VITAE

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointment:

Assistant Professor

Department of Medicine, Johns Hopkins University School of Medicine

Department of International Health, Johns Hopkins Bloomberg School of Public Health

Education and Training (in chronological order):

Year, Degree/Certificate, Institution, Discipline

- Undergraduate: 1994, B.A., Johns Hopkins University, Natural Sciences
- Doctoral/graduate: 1998, M.D., Washington University School of Medicine, Medicine
- Postdoctoral: 1999, Internship, Hosp. of the Univ. of PA, Internal Medicine
2001, Residency, Hosp. of the Univ. of PA, Internal Medicine
2005, Fellowship, Johns Hopkins Univ. School of Medicine, Infectious Diseases

Professional Experience (in chronological order, earliest first)

Dates	Positions	Institutions
Jan-Jun/1994	Research Assistant	Dept. of Medicine, Johns Hopkins
Jul-Dec/2000	Research Assistant	Dept. of Ophthalmology, Univ. of Pennsylvania
Jan-Jun/2002	Clinical Instructor	Dept. of Medicine, Univ. of Pennsylvania
Jun/2005-	Assistant Professor	Dept. of Medicine, Johns Hopkins

RESEARCH ACTIVITIES

Peer-reviewed Research Publications:

1. Ahmad Z, Klinkenberg LG, Pinn ML, Fraig MM, Peloquin CA, Bishai WR, Nuermberger EL, Grosset J, **Karakousis PC**. Cessation of isoniazid's potent early bactericidal activity in the guinea pig model of tuberculosis is not associated with the emergence of drug resistance (in press).
2. Rao NA, Albin TA, Kumaradas M, Pinn ML, Fraig MM, **Karakousis PC**. Experimental ocular tuberculosis in guinea pigs (in press).
3. Converse PJ, **Karakousis PC**, Klinkenberg LG, Kesavan AK, Ly LH, Allen SS, Grosset JH, Jain SK, Lamichhane G, Manabe YC, McMurray DN, Nuermberger EL, Bishai WR. The role of the DosR/DosS two-component regulatory system in *Mycobacterium tuberculosis* virulence in three animal models. *Infect. Immun.* 2009;77:1230-37.

4. Klinkenberg L, Sutherland L, Bishai WR, **Karakousis PC**. Metronidazole lacks activity against *Mycobacterium tuberculosis* in an *in vivo* hypoxic granuloma model of latency. *J Infect Dis*. 2008;198:275-83.
5. **Karakousis PC**, Williams EP, Bishai WR. Altered expression of isoniazid-regulated genes in drug-treated dormant *Mycobacterium tuberculosis*. *J Antimicrob Chemother*. 2008;61:323-31.
6. Lee, J-H, **Karakousis PC**, Bishai WR. Characterization of sigma factor regulation in *Mycobacterium tuberculosis* by SigB and SigF. *J Bacteriol*. 2008;190:699-707.
7. Williams EP, Lee JH, Bishai WR, Colantuoni C, **Karakousis PC**. *Mycobacterium tuberculosis* SigF regulates genes encoding cell wall-associated proteins and directly regulates the transcriptional regulatory gene *phoY1*. *J Bacteriol*. 2007;189:4234-42.
8. Jain SK, Hernandez-Abanto, Cheng Q-J, Singh P, Ly LH, Klinkenberg LG, Morrison NE, Converse PJ, Nuermberger EL, Grosset J, McMurray DN, **Karakousis PC**, Lamichhane G, Bishai WR. Accelerated detection of *Mycobacterium tuberculosis* genes essential for bacterial survival in guinea pigs compared with mice. *J Infect Dis*. 2007;195:1634-42.
9. Riddell J 4th, Kaul DR, **Karakousis PC**, Gallant JE, Mitty J, Kazanjian PH. *Mycobacterium avium* complex immune reconstitution inflammatory syndrome: Long term outcomes. *J Transl Med*. 2007;5:50.
10. **Karakousis PC**, Sifakis FG, Montes de Oca R, Amorosa VC, Page, KR, Manabe YC, Campbell J. Medical resident familiarity with national tuberculosis guidelines. *BMC Infect Dis*. 2007;7:89.
11. **Karakousis PC**, Yoshimatsu T, Lamichhane L, Woolwine SC, Nuermberger EL, Grosset J, Bishai WR. Dormancy phenotype displayed by extracellular *Mycobacterium tuberculosis* within artificial granulomas in mice. *J Exp Med*. 2004; 200:647-57.
12. **Karakousis PC**, Bishai WR, Dorman SE. *Mycobacterium tuberculosis* cell envelope lipids and the host immune response. *Cell Microbiol*. 2004; 6:105-116.
13. **Karakousis PC**, Moore RD, Chaisson RE. *Mycobacterium avium* complex in patients with HIV infection in the era of highly active antiretroviral therapy. *Lancet Infect Dis*. 2004; 4:557-65.
14. Coppola AG, **Karakousis PC**, Metz DC, Go MF, Mhokashi M, Howden CW, Raufman JP, Sharma VK. Hepatitis C knowledge among primary care residents: is our teaching adequate for the times? *Am J Gastroenterol*. 2004; 99:1720-5.
15. **Karakousis PC**, John SK, Behling KC, Surace EM, Smith JE, Hendrickson A, Tang W-X, Bennett J, Milam AH. Localization of pigment epithelium derived factor (PEDF) in developing and adult human ocular tissues. *Mol Vis*. 2001; 7:154-163.
16. Canning BJ, Udem BJ, **Karakousis PC**, Dey RD. Effects of organotypic culture on parasympathetic innervation of guinea pig trachealis. *Am J Physiol*. 1996; 271:L698-L706.

Inventions, Patents, Copyrights (pending, awarded)

Date	Title
09/06/2005	Hollow fiber technique for <i>in vivo</i> study of cell populations (pending)

Extramural Funding (current, pending, previous)

Current Grants:

K08 AI64229-01 3/15/05-02/28/10

NIH/NIAID

Modeling latent TB infection.

This study will investigate the genetic requirements of *Mycobacterium tuberculosis* survival in a novel in vivo granuloma model of latent TB infection.

Role: Principal Investigator

Bill and Melinda Gates Foundation 11/01/07-10/31/09

TB Drug Accelerator (RFP GH-TB-06)

Pharmacokinetics and pharmacodynamics of sterilizing activity across experimental models

This study will evaluate the sterilizing activity of standard and novel anti-TB agents in the guinea pig aerosol and mouse hollow fiber models of TB infection.

Principal Investigator: Jacques H. Grosset

Role: Co-Principal Investigator

Current Contracts:

N01 AI 30036 8/22/03 - 8/21/10

NIH-NIAID-DMID

TB gene function in animal models

This study will investigate the role of specific genes in *Mycobacterium tuberculosis* virulence in mice, guinea pigs, and rabbits.

Principal Investigator: William R. Bishai

Role: Co-investigator

Previous funding:

Potts Memorial Foundation 2/31/05-12/30/06

Pathogen and host factors involved in latent TB infection

This study investigated the role of host microenvironmental conditions on *Mycobacterium tuberculosis* dormancy in a novel in vivo granuloma model of latent TB infection.

Role: Principal Investigator

Potts Memorial Foundation 8/31/03-08/30/04

The hollow fiber encapsulation/implantation technique as a model for latent tuberculosis infection

This study helped establish a dormancy model of *Mycobacterium tuberculosis* using semi-diffusible hollow fibers in vivo.

Role: Principal Investigator

Pending:

1R01AI083125-01 07/01/09-06/30/14

NIH/NIAID

Regulatory networks involved in *Mycobacterium tuberculosis* persistence

The major goals of this study are to investigate regulatory pathways involved in *Mycobacterium tuberculosis* persistence, including the roles of RelA and inorganic polyphosphate.

EDUCATIONAL ACTIVITIES

Educational Publications:

1. Albin TA, **Karakousis PC**, Rao NA. Interferon-gamma release assays in the diagnosis of tuberculous uveitis. *Am J Ophthalmol*. 2008;146:486-8.
2. **Karakousis PC**, Magill SS, Gupta A. Paraplegia due to invasive spinal aspergillosis- Reply from the authors. *Neurology*. 2007;69:222-23.
3. **Karakousis PC**, Magill SS, Gupta A. Paraplegia due to invasive spinal aspergillosis. *Neurology*. 2007;68:158.
4. Brastianos PK, Swanson J, Torbenson M, Sperati J, **Karakousis PC**. Tuberculosis-associated hemophagocytic syndrome. *Lancet Infect Dis*. 2006;6:447-54.
5. **Karakousis PC**, Trucksis M, Dumler JS. Chronic Q fever in the United States. *J Clin Microbiol*. 2006;44:2283-7.
6. **Karakousis P**, Moore RD, Chaisson RE. Non-tuberculous mycobacteria in HIV-infected patients: geographic, behavioural, and immunological factors - Authors' reply. *ancet Infect Dis*. 2005; 5:396.
7. **Karakousis PC**, Page KR, Bishai WR. From the IDSA meeting—Important new findings in HIV treatment and pathogenesis, 2003. *Hopkins HIV Rep*. 2004;16:2-3.
8. Page KR, **Karakousis PC**, Maslow J. Postoperative pneumococcal cellulitis in systemic lupus erythematosus. *Scand J Infect Dis*. 2003; 35:141-3.
9. **Karakousis PC**, Lee MS, Grostern RJ, Nichols CW. The role of conjunctival biopsy in the diagnosis of Wegener's granulomatosis: a case report. *Can J Ophthalmol*. 2002;37:179-181.
10. **Karakousis PC**, Page KR, Varello MA, Howlett PJ, Stieritz DD. Waterhouse-Friderichsen syndrome after infection with Group A streptococcus. *Mayo Clin Proc*. 2001;76:1167-1170.
11. **Karakousis PC**, Tomaszewski JE. Ulcerating subcutaneous nodules and advanced renal failure: is it time for a new liver? *Nephrol Dial Transplant*. 2001;16: 2095-2096.

Book chapters

Karakousis PC. "Mechanisms of Action and Resistance of the Antimycobacterial Agents" in *Antimicrobial Drug Resistance*, Mayers D, ed. (Humana Press, 2009).

Karakousis PC, Chaisson RE. Mycobacterial infections and HIV infection. In: Fishman AP, Elias JA, Fishman JA, Grippi MA, Senior RM, Pack AI. *Fishman's Pulmonary Diseases and Disorders*. 4th edition. New York: McGraw Hill, 2008:2487-2497.

Other media

Karakousis PC. "XDR-TB Scare", Fox National News, 11:00 AM, Thursday, May 31, 2007.

Karakousis PC, Bishai WR, Chaisson RE. Management of community-acquired pneumonia: Improving patient outcomes; a satellite symposium preceding the 40th IDSA Annual Meeting. JHU antibiotic guide website (<http://hopkins-abxguide.org>). Posted December 2002.

Karakousis PC, Bishai WR. Synopsis of key presentations at the 40th annual meeting of IDSA (October 24-27, 2002, Chicago). JHU antibiotic guide website (<http://hopkins-abxguide.org>). Posted November 2002.

Karakousis PC, Page KR, Bishai WR. Greetings from sunny (most of the time) San Diego: Highlights from the 41st annual meeting of the Infectious Diseases Society of America. JHU antibiotic guide website (<http://hopkins-abxguide.org>). Posted November 2003.

Mentoring (pre- and post-doctoral)

Graduate Students

Julia Drewes Graduate student, Cellular and Molecular Medicine
04/08-06/08 Lab Rotation

Post-doctoral Trainees

Lee G. Klinkenberg, PhD	Post-doctoral fellow, JHUSOM	09/05 –present
Potts Memorial Foundation	Postdoctoral Fellowship recipient, Sept 2006-Sept 2008	
Zahoor Parry, PhD	Post-doctoral fellow, JHUSOM	01/08-present
Seema Thayil, PhD	Post-doctoral fellow, JHUSOM	05/08 –present

Short-Term Trainees

Tonya Jackson	Minority student	06/05-08/05
Omar A. Contreras	JHU Summer Minority Internship Program	06/05-08/05
Present position: NIH Academy Student, Section on Cellular Neurobiology		
Lesley Sutherland		05/07-08/07, 05/08-08/08
Present position: Senior, Connecticut College		

Oral examination committee member for Maia Schoonmaker, graduate student in Cellular and Molecular Medicine, JHU, Oct 9, 2007

CLINICAL ACTIVITIES

Certification

Medical Licensure: State of Pennsylvania, 2000, expired
 State of Maryland, 2005, D0063686
Diplomate Internal Medicine 2002, American Board of Internal Medicine

Diplomate Infectious Diseases 2005, American Board of Internal Medicine

Clinical (Service) Responsibilities (dates, specialty, role, time commitment)

Jul–Aug 2006, Infectious Diseases Inpatient Consult Service, Johns Hopkins Hospital, Attending Physician

Dec 2006-Jan 2007, Polk Inpatient HIV service, Johns Hopkins Hospital, Attending Physician

Oct-Nov 2007, Polk Inpatient HIV service, Johns Hopkins Hospital, Attending Physician

Sept-Oct 2008, Polk Inpatient HIV service, Johns Hopkins Hospital, Attending Physician

ORGANIZATIONAL ACTIVITIES

Editorial Activities

Journal peer review:

Journal of Experimental Medicine

Journal of Clinical Investigation

Lancet Infectious Diseases

PLoS Pathogens

American Journal of Respiratory and Critical Care Medicine

Molecular Microbiology

Journal of Bacteriology

Infection and Immunity

Journal of Clinical Microbiology

Microbiology

Antimicrobial Agents and Chemotherapy

Journal of Antimicrobial Chemotherapy

Current Microbiology

Tuberculosis

Transplant Infectious Disease

Advisory committees, Review groups

Advisory committees

WorkLife Committee, Department of Medicine, Johns Hopkins University School of Medicine, 2007-08

FDA, Anti-Infective Drugs Advisory Committee (AIDAC), June 3, 2009

Professional Societies:

2000-present: American College of Physicians

2002-present: Infectious Disease Society of America

2002-present: American Society for Microbiology

2004-present: American Thoracic Society

RECOGNITION

Awards, Honors

2008 Junior Faculty Basic Science Award Finalist

2005 Arthur M. Dannenberg, Jr. Award for Postdoctoral Research

2004 Best abstract, Assembly of Microbiology, Tuberculosis, and Pulmonary Infections, American Thoracic Society (ATS) annual meeting

2004 ATS Travel Grant to ATS annual meeting
2004 Basic Research Award Nominee, Department of Medicine Research Retreat
2003 Special citation, Infectious Diseases Society of America Annual Meeting
2003 Basic Research Award Nominee, Department of Medicine Research Retreat
2001 Edward W. Holmes Resident Research Award
2000 Maurice F. Attie Resident Teaching Award
1998 Alpha Omega Alpha
1998 Missouri State Medical Association Award
1997 Hellenic Medical Student Scholarship
1995 Antoinette Frances Dames Prize in Cell Biology and Physiology
1994 Distinguished Alumni Scholarship (full-tuition academic scholarship at Washington University School of Medicine)
1994 Phi Beta Kappa
1993 National Science Foundation Scholarship
1992 Ford Foundation Scholarship
1990-4 Dean's List

Conference oral presentations

The hollow fiber model of latent tuberculosis infection. Oral presentation at the Infectious Diseases Society of America Annual Meeting, San Diego, October 9, 2003.

An in vivo granuloma model of latent tuberculosis infection. Oral presentation at the American Thoracic Society Annual Meeting, Orlando, May 18, 2004.

The regulatory role of sigF in Mycobacterium tuberculosis. Oral presentation at the Infectious Diseases Society of America Annual Meeting, Toronto, October 13, 2006.

Transcriptional profile of dormant Mycobacterium tuberculosis following isoniazid exposure. Oral presentation at the American Thoracic Society Annual Meeting, San Francisco, May 21, 2007.

Transcriptional profile of dormant Mycobacterium tuberculosis following isoniazid exposure. Oral presentation at the American Thoracic Society Annual Meeting, San Francisco, May 21, 2007.

A guinea pig model of TB chemotherapy? Oral presentation at the 43rd Annual US-Japan Tuberculosis and Leprosy Conference, Baltimore, July 10, 2008.

A novel phosphate-starvation model of M. tuberculosis dormancy. Oral presentation at the 48th ICAAC/46th IDSA Annual Meeting, Washington, D.C., October 26, 2008.

Invited Talks

Dormancy phenotype displayed by extracellular Mycobacterium tuberculosis within artificial granulomas in mice. Microbial Pathogenesis Interest Group Seminar Series, Johns Hopkins University School of Medicine, Baltimore, September 24, 2004.

Mycobacterium tuberculosis: The persistent pathogen. Depts. of Molecular Microbiology, and Medicine, Division of Infectious Diseases, Washington University School of Medicine, St. Louis, December 8, 2006.

Mycobacterium tuberculosis pathology in the mouse model. Many Hosts of Mycobacteria Meeting, Ames, Iowa, September 26, 2007.

Towards establishing a high-burden guinea pig model for TB chemotherapy, First International Workshop on Clinical Pharmacology of Tuberculosis Drugs, Toronto, May 15, 2008.

Mycobacterium tuberculosis dormancy: Tracking TB 'sleeper cells', Grand Rounds, Department of Pathology, Johns Hopkins University School of Medicine; July 14, 2008.

Mycobacterium tuberculosis: The persistent questions. MMI Seminar series, Department of Molecular Microbiology and Immunology, Johns Hopkins Bloomberg School of Public Health; September 11, 2008.

Modeling Mycobacterium tuberculosis latency and persistence, Jiao Tong University School of Medicine, Shanghai, China; November 11, 2008.

Regulatory pathways in Mycobacterium tuberculosis dormancy, Public Health Clinical Center, Fudan University School of Medicine, Shanghai, China; November 12, 2008.

Mycobacterium tuberculosis: More than meets the eye, Grand Rounds, Department of Ophthalmology, Doheny Eye Institute, University of Southern California School of Medicine; March 20, 2009.

Mecanismos de regulación involucrados en la persistencia de Mycobacterium tuberculosis, Facultad de Ciencias, Universidad de la Republica, Montevideo, Uruguay; March 30, 2009.

Mycobacterium tuberculosis: A tale of persistence, Prokaryotic Seminar Series, University of Pennsylvania School of Medicine, September 25, 2009.

Inorganic polyphosphate and Mycobacterium tuberculosis persistence, University of Maryland, Department of Cell Biology and Molecular Genetics Seminar Series; October 9, 2009.