

CURRICULUM VITAE

FREDERICK PAUL HEINZEL, MD, FACP

Staff Physician and Researcher, James A Haley VAMC

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Born May 15, 1954; Redding, California

Licensure: Ohio, 1991

Board Certification: 1984 Internal Medicine
1987 Infectious Diseases

EDUCATION

1977 BS, University of California, Davis, Biochemistry (summa cum laude)
1981 MD, University of California, Irvine
1981-84 Internship and Residency in Internal Medicine (traditional program), University of Washington Affiliated Hospitals, Seattle, WA
1984-86 Fellowship in Infectious Disease, University of Washington, Seattle, WA

HONORS AND AWARDS

1972 UC Regent's Scholar
1980 Alpha Omega Alpha, UCI School of Medicine
1981 Senior Achievement Award, UCI School of Medicine
1981 UCI Alumni Service Award, UCI School of Medicine
1987 AFCR Western Regional Post-Doctoral Trainee Award
1989 National Foundation for Infectious Diseases Young Investigator Matching Grant Award

PROFESSIONAL APPOINTMENTS

Staff/Faculty Appointments (most recent first)

2006- Staff Physician, Infectious Diseases and Medical Research Service
James A Haley VAMC

2006-2007 Unpaid/Part-Time Associate Professor
Case Western Reserve University, School of Medicine

1991-2006 Staff Physician, Infectious Diseases/Medical Service and
Medical Research Service
Cleveland VA Medical Center

2002-2006 Associate Professor, Center for Global Health and Disease
Adjunct Associate Professor, Department of Pathology
Case Western Reserve University, School of Medicine

1999-2003 Associate Professor with Tenure
Adjunct Associate Professor, Department of Pathology
Case Western Reserve University, School of Medicine

1996-1999 Associate Professor, Department of Medicine
Adjunct Associate Professor, Department of Pathology
Case Western Reserve University School of Medicine

1991- 1996 Assistant Professor, Department of Medicine
Case Western Reserve University School of Medicine

1988-1991 Assistant Professor in Residence, Department of Medicine
UCSF School of Medicine

1986-1988 Instructor in Residence, Department of Medicine
UCSF School of Medicine

Professional and Scientific Membership

1996- 1999 American Society of Tropical Medicine and Hygiene

1987- American Association of Immunologists

1988-1994 American Society for Microbiology

1988-1996 American Federation for Clinical Research

PROFESSIONAL SERVICES ACTIVITIES

Editorial Boards and National Advisory Groups

2000-2002 Section Editor for the Journal of Immunology

1998 Associate Editor for the Journal of Immunology

1997 VA representative to VA/DOD/FDA/CDC Gulf War Research Advisory Panel on Serologic Testing

Extramural

2002 Block symposium coordinator and co-chair for "Modulation of Effector host responses", Experimental Biology. New Orleans, LA

2001 Block symposium coordinator co-chair for the symposium block "Vaccine development and immune based therapies", Experimental Biology. Orlando, FL

1999 Co-chairperson for Mini-symposium "Cytokines and infectious diseases", FASEB meeting Washington, D.C.

1999 Temporary member, NIH study section (Tropical Medicine and Parasitology)

1997-1999 Member of National Program Committee, American Society of Tropical Medicine and Hygiene

1997 Co-chairman for "Kinetoplastid Immunology", mini-symposium at the 46th annual meeting of the American Society of Tropical Medicine & Hygiene, Orlando, FL

1996 Co-chairperson for mini-symposium on "In vivo regulation of cytokines", American Association of Immunologists (AAI). New Orleans, LA

1995 Co-chairperson for mini-symposium on Proinflammatory Cytokines, Experimental Biology (FASEB). Atlanta, GA

1993 Discussion of Leishmaniasis and Gulf War syndrome on Channel 43 News (12/93)

1995, 1992 Ad hoc reviewer for VA Merit Review Immunology study section

1991, 1993, 2002 Ad hoc reviewer for NIH Allergy and Immunology study section

1991 Lecturer and Laboratory Preceptor, Woods Hole Course on the Biology of Parasitism

1989-1991 Co-chairman, Advances in Infectious Diseases CME Program, University of California, San Francisco, CA

Intramural

2010 Chairman, Subcommittee for Research Safety, James A Haley VAMC and USF

2007 Member, Research and Development Committee, James A Haley VAMC

2005 Designed, installed and maintained website for the Center for Global Health and Diseases

2003-2005 Judge, Lepow Student Research Day

2001, 2003 UH Medicine Grand Rounds “From Oriental Sore to Kala-Azar: Clinical and therapeutic aspects of the leishmaniasis”, 5/15/01

1999-2006 Director of the weekly Host Defense Seminar Series

1999-pres CWRU MSTP candidate interviewer

1996-2002 Cleveland VAMC Research and Development Committee

1996-pres Infectious Diseases/Geographic Medicine Fellowship Selection Committee, CWRU

1993-1997 Chairman, Research Biosafety Committee, Cleveland VAMC

1992 Medicine Today CME Lecture “Tick borne diseases of North America”

1992 UH Medicine Grand Rounds “Leishmaniasis”

Administrative Positions

1991-pres Staff Physician, Cleveland VA Medical Center

EDUCATIONAL AND TEACHING LEADERSHIP ACTIVITIES

2000-2005 BBD-I lectures: “Viral Vaccines” and “Bacterial Vaccines”

1999-2002 12th, 13th, 14th and 15th CWRU Course in International Health. One hour lectures on: “Leprosy” and “Leishmaniasis”

1999-2005 Lecturer at various CWRU-sponsored CME: “Leishmaniasis”, “Dermal manifestations of parasitic disease”, “Leprosy”, “Trypanosomiasis”

- 2000 Mentor, John H. Wallace Summer Teacher American Association of Immunologists (AAIO) Research Fellowship Program. (Provided 8 weeks AAI-sponsored training for Shaker Heights High teacher Linda Loeffler)
- 2000 Immunology of Infectious diseases Pathology Seminar course “Host-parasite interactions in protozoan infections”
- 1998 12th CWRU Course in International Health. One hour lectures on: “Leprosy”, “Leishmaniasis” and “Malnutrition in parasitic infection”
- 1998 Lecture, Path 481, Immunology of infectious diseases
- 1998-2001 BBDI Small group seminar, “MHC and transplantation”
- 1998 BBD-1 Lecture, “Development of Parasite Vaccines”
- 1997 11th CWRU Course in International Health. One hour lectures on: “Leprosy”, “Leishmaniasis” and “Malnutrition in parasitic infection”
- 1997 Lecture, Path 451/465 Advanced Immunology
- 1997 BBDI Small group seminars “MHC and transplantation”, “Parasite Laboratory” and “Antibody detection methods”
- 1997 Lecture, CWRU Infectious Diseases Fellows Conference Series, "Leishmaniasis and Trypanosomiasis"
- 1996 Lecture, Path 481, Immunology of infectious diseases
- 1996 BBDI Small group seminars “MHC and transplantation”, “Parasite Laboratory” and “Antibody detection methods”
- 1995 Lecture, MoBiol 451C, Molecular Biology of Parasitic Diseases

RESEARCH SUPPORT

(F.P. Heinzl is P.I. on all unless otherwise noted)

Current

- 2008 DOD PT073012 Traumatic Brain Injury Concepts Grant “Pathogenesis of Heterotopic Ossification in Traumatic Brain Injury”, \$140,358 total direct costs (03/17/08- 09/16/09)
- 2003 VA Merit Review Award "Immunotherapy of chronic infection", \$125,000 yearly direct cost (4/01/03-3/31/06)

- 2003 Frederick Heinzl (PI), NIH Training Grant T32-AI07024-26 "Training in Geographic Medicine and Infectious Diseases", \$247,945 yearly direct cost (9/1/03 - 8/31/08)
- Past
- 2000 NIH RO1 AI 45602 "Endotoxin tolerance as a model for immune paralysis", \$800,000 total direct cost (4/01/2000 - 3/31/2004)
- 1998 NIH R01 AI35979-06 "Interleukin-12 as immunotherapy in leishmaniasis", \$787,217 total direct cost (6/01/98 - 5/31/2002)
- 2001 NIH-NIAMS Skin Diseases Research Center. Project director: Kevin Cooper, M.D. Pilot Project (SDRC-P&F 53): "UV effects on murine cutaneous leishmaniasis", direct costs \$30,600 (5/01/2001 - 4/30/2002)
- 1999 Steris Corporation, "Clinical Immune Paralysis: Mechanisms for deficient innate cellular immunity following cardiothoracic surgery", Robert Salata and Jai Lee (Co-investigators). \$20,598 total direct cost (4/1/99 - 3/31/2000)
- 1998 Smith-Kline Beecham Pharmaceuticals Research Fellowship grant for Inger Kremer Ph.D. "UV immunosuppression in cutaneous leishmaniasis", \$25,000 total direct cost. Preceptor: Kevin Cooper M.D., Ph.D., Dermatology. Co-Preceptor: F.P. Heinzl, M.D.
- 1996 VA Merit Review Award renewal "Vaccine mediated immunity against Leishmania", \$242,000 total direct cost (10/01/96-9/31/99)
- 1994 NIH K04 AI01229 "Interleukin-12 function during murine leishmaniasis", \$315,537 total direct cost (9/01/94-8/31/99)
- 1994 NIH R01 AI35979 "Interleukin-12 as immunotherapy in leishmaniasis", \$393,666 total direct cost (9/01/94-5/31/98)
- 1996 Fogarty/NIH training award "Visceral Leishmaniasis in Kenya: Training in new surveillance techniques", \$50,000 total direct cost. F.P. Heinzl, P.I. Supplement to PO 1 AI33061 "Parasitic Diseases Research in Africa", P.I. Adel Mahmoud, M.D., Ph.D. (10/01/96-12/31/98)
- 1992 VA Merit Review award "Vaccine mediated immunity against Leishmania", (3 yrs) \$185,123 total direct cost
- 1991 VA RAG award "Vaccine mediated immunity against Leishmania", (1 yr) \$48,000
- 1988 NIH R29 AI27461 "Cytokine function in murine leishmaniasis", (5 yrs) \$310,746

Reviewer

Journal of Immunology (Section Editor), Journal of Experimental Medicine, Journal of Infectious Diseases, Parasitology Today, Cellular Immunology, Microbial Pathogenesis and Infection & Immunity

Invited Lectures and Other National Recognition

Poster Presentation. Messengale J, Tran J, Schwartz T, Groer S, Scott S, McCarthy M, Richardson R, **Heinzel P**. Prevalence of Intracranial Infection among a Consecutive Series of VHA Patients. Federal Interagency Conference on Traumatic Brain Injury, Washington Hilton, 03/15/11 – 03/15/2011

Invited Speaker, CD40 and IFN gamma increase IRF3 amount and activation in dendritic cells: Synergistic increases in IL-12 p70 and IFNalpha production. Inflammation Research Center, Baylor College of Medicine, 3/27/06

Invited Speaker, Adaptability of the innate immune response. Microbiology and Immunology Seminar, Ohio State University, 6/02/04

Invited Speaker, Endotoxin tolerance and immune paralysis: Two sides of the same coin? Immunology Seminar series, Cleveland Clinic Foundation/Lerner Research Institute, 6/06/01

Invited Speaker, Murine leishmaniasis as a model for testing novel immunotherapies during chronic infection. 2nd Annual Immunology of Infectious Diseases Symposium. Uniformed Services University of the Health Sciences, Bethesda MD, 05/30/01

Invited Speaker, The Immune Pathogenesis of Leishmaniasis. Harvard School of Public Health, Dept of Microbiology and Immunology, Boston, MA, 05/07/01

Invited Speaker, Therapeutic resetting of deleterious T cell responses in advanced murine leishmaniasis by sequential CD4+ cell depletion and Th1-selective reconstitution. 1999 FASEB, Washington, DC, 04/18/99

Invited Speaker, Altered CD40 function as a contributory factor in the pathogenesis of progressive murine leishmaniasis. 1998 FASEB, San Francisco, CA, 04/22/98

Invited Speaker, The cellular basis for CD40 ligand mediated IL-12 production in murine leishmaniasis. International Centers for Tropical Disease Research meeting, NIH, Bethesda, MD, 1997

Invited Speaker, Interleukin-12: Regulation and self-regulation. Department of Microbiology and Immunology, Medical College of Ohio, Toledo, OH, 1997

Invited Speaker, Regulation and self-regulation of IL-12 in endotoxemic shock. CWRU Immunology Seminar Series, 1996

Invited Speaker, IL-12 and the pathogenesis of infectious diseases. Wayne State School of Medicine Immunology Seminar, Detroit, MI, 1995

Distinguished Alumnus Lecturer, Bacterial superantigens and immunopathogenesis of toxic shock syndromes. Conference “Infectious Diseases: New Problems, New Treatments”, University of California, Irvine Conference, 1995

Invited Speaker, Regulation and function of IL-12 during murine Leishmaniasis. Cleveland Clinic Foundation Research Institute Seminar, 05/24/95

Invited Speaker, Leishmaniasis. NIAID Symposium, 1995

Invited Speaker, IL-12 in infection: Prospects for prophylactic and therapeutic intervention. NIAID Symposium 1995

Invited Speaker, The role of IL-12 in the differentiation of T cell subsets during murine leishmaniasis. International symposium: Colley's toxin and the biology of interleukin-12 in cancer Immunotherapy sponsored by the Cancer Research Institute, New York, 1994

Invited Speaker, Production and function of IL-12 in murine leishmaniasis. CWRU Immunology Seminar Series, 1994

Research featured in Journal Highlights. American Society for Microbiology News. 60:658, 1994

Invited Speaker, Clinical aspects of leishmaniasis. Seminar, Northeast Ohio Association for Clinical Microbiology, 1994

Invited Speaker, IL-12 cures murine leishmaniasis. Gordon Research Conference on Immunochemistry and immunobiology, Oxnard, CA, 1992

Invited Speaker, IL-12 biology in murine leishmaniasis. CWRU Immunology Seminar Series, 1992

Invited Speaker, The role of IL-12 in Th1 lymphocyte development during murine leishmaniasis. NIAID International Centers for Tropical Disease Research. Second annual meeting. Bethesda, MD, 1992

PEER-REVIEWED PUBLICATIONS

1. Portillo JA, Muniz-Feliciano L, **Heinzel F**, Subauste C. CD40 and TNF-alpha Cooperate to Upregulate NOS2 Expression in Macrophages. *Immunology*, in press 2011
2. Meyer R, Stone T and **Heinzel FP**. Direct Sulf hydrolysis of cyclic AMP: A one-step synthesis of the cyclic ribonucleotide of 6-mercaptopurine. *J Heterocyclic Chemistry* 1978; 15:1511-1512

3. Sadick MD, **Heinzel FP**, Shigekane VM, Fisher WL, and Locksley RM. Cellular and humoral immunity to *Leishmania major* in genetically susceptible mice following in vivo depletion of L3T4⁺ T cells. *J Immunol* 1987; 139:1303-1309
4. Locksley RM, **Heinzel FP**, Shepard HM, Agosti J, Eessalu TE, Aggarwal BB, and Harlan JM. Tumor necrosis factors alpha and beta differ in their capacities to generate IL-1 release from endothelial cells. *J Immunol* 1987; 139:1891-1895
5. **Heinzel FP**, Sadick MD and Locksley RM. *Leishmania major*: Analysis of lymphocyte and macrophage phenotypes during infection of susceptible and resistant mice. *Exp Parasit* 1988; 65:258-268
6. Locksley RM, **Heinzel FP**, Fankhauser JE, Nelson CS, and Sadick MD. Cutaneous host defense in leishmaniasis. Interaction of isolated, dermal macrophages and epidermal Langerhans cells with the insect-stage promastigotes. *Infect Immun* 1988; 56:336-342
7. Locksley RM, **Heinzel FP**, Sadick MD, Holaday BD and Gardner KD, Jr. Murine cutaneous leishmaniasis. Susceptibility correlates with differential expansion of helper T-cell subsets. *Ann Inst Pasteur / Immunol* 1987; 138:744-749
8. Locksley RM, Crowe S, **Heinzel FP**, McGrath MS and Mills J. 1987. Release of interleukin-1 inhibitory activity (contra-IL-1) by human monocyte-derived macrophages infected with human immunodeficiency virus in vitro and in vivo. *J Clin Invest* 1987; 82:2097-2105, 1988
9. **Heinzel FP**, Sadick MD, Holaday BJ and Locksley RM. Reciprocal expression of interferon-gamma or interleukin-4 during the resolution or progression of murine leishmaniasis. Evidence for expansion of distinct helper T-cell subsets. *J Exp Med* 1989; 169:59-72
10. Sadick MD, **Heinzel FP**, Holaday BJ, Pu RT, Dawkins RS and Locksley RM. Cure of murine leishmaniasis with anti-IL-4 monoclonal antibody. Evidence for a T cell-dependent, IFN- γ -independent mechanism. *J Exp Med* 1989; 171:115-127
11. Gibbons RA, Martinez OA, Matli MR, **Heinzel FP**, Bernstein MS and Warren RS. The regulation of interleukin-6 production by recombinant interleukin-4 in vitro. *Lymphokine Res* 1990; 9:283-293
12. **Heinzel FP**. The role of interferon- γ in the pathology of experimental endotoxemia. *J Immunol* 1990; 145:2920-2924
13. Locksley RM, **Heinzel FP**, Holaday BJ, Mutha SS, Reiner SL and Sadick MD. Induction of Th1 and Th2 CD4⁺ subsets during murine *Leishmania major* infection. *Ann Inst Pasteur / Research in Immunology* 1991; 142:28-32
14. Jendroska K, **Heinzel FP**, Torchia M, Stowring L, Kretzschmar HA, Kon A, Stern A, Prusiner SB and DeArmond SJ. Proteinase-resistant prion protein accumulation in Syrian hamster brain correlates with regional pathology and scrapie infectivity. *Neurology* 1991; 41:1482-90

15. **Heinzel FP**, Sadick MD, Mutha S and Locksley RM. Production of interferon- γ , IL-2, IL-4 and IL-10 by CD4⁺ lymphocytes in vivo during healing and progressive murine leishmaniasis. *Proc Natl Acad Sci USA*. 1991; 88:7011-7015
16. Holaday BJ, Sadick MD, Wang ZE, **Heinzel FP**, Parslow TG and Locksley RM. Reconstitution of *Leishmania* immunity in scid mice using Th1 and Th2-like cell lines. *J Immunol* 1991; 147:1653-1658
17. **Heinzel FP**, Rerko RM, Hatam F and Locksley RM. Interleukin-2 is necessary for the progression of leishmaniasis in susceptible murine hosts. *J Immunol* 1993; 150: 3924-31
18. **Heinzel FP**, Schoenhaut D, Rerko R, Roesser L and Gately M. Recombinant murine IL-12 cures infection with *Leishmania major* in susceptible mice. *J Exp Med* 1993; 177:1505-1509
19. Wang Z, Reiner SL, Hatam F, **Heinzel FP**, Bouvier J, Turck CW and Locksley RM. Targeted activation of CD8⁺ Cells and infection of β 2-Microglobulin-deficient mice fail to confirm a primary protective role for CD8⁺ cells in experimental leishmaniasis. *J Immunol* 1993; 151:2077-86
20. **Heinzel FP**. Interleukin 12 and the regulation of CD4⁺ T cell subset responses during murine leishmaniasis. *Parasitol Today* 1994; 10:190-2
21. **Heinzel FP**, Rerko RM, Ling P, Hakimi J, Schoenhaut DS. Interleukin 12 is produced in vivo during endotoxemia and stimulates synthesis of interferon- γ . *Infect Immun* 1994; 62:4244-9
22. **Heinzel FP**. Th1 and Th2 cells in the cure and pathogenesis of infectious diseases. *Curr Opin Infect Dis* 1995; 8:151-5
23. Pearlman E, **Heinzel FP**, Hazlett FE and Kazura JW. Interleukin-12 modulation of T helper responses to the filarial helminth, *Brugia malayi*. *J Immunol*. 1995; 154: 4658-4664
24. **Heinzel FP**, Rerko RM, Ahmed F and Pearlman E. Endogenous interleukin-12 (IL-12) is required for control of Th2 cytokine responses capable of exacerbating leishmaniasis in normally resistant C57BL/6 mice. *J Immunol* 1995; 155: 730-739
25. **Heinzel FP**, Ahmed F, Hujer AM and Rerko RM. Immunoregulation of murine leishmaniasis by interleukin-12. *Res Immunol* 1995; 146:153-60
26. **Heinzel FP**, Rerko RM, Ahmed F and Hujer AM. Interferon-gamma independent production of interleukin-12 during murine endotoxemia. *J Immunol* 1996; 157:4521-8
27. **Heinzel FP**, Hujer AM, Ahmed F and Rerko RM. The in vivo production and function of IL-12 p40 homodimers. *J Immunol* 1997; 158:4381-8
28. **Heinzel FP**. From Oriental Sore to Kala-azar: Clinical and therapeutic aspects of the Leishmaniasis. *Clin Microbiol Newsletter* 1997; 19:121-6
29. **Heinzel FP**, Rerko RM, Hujer AM. Underproduction of interleukin-12 during progressive murine leishmaniasis is due to decreased CD40 activity. *Cell Immunol* 1998; 184: 129-142
30. **Heinzel FP**, Rerko RM, Hujer AM and Maier RA, Jr. Increased interleukin-2 synthetic capacity parallels disease progression in mice infected with *Leishmania major*. *Infect Immun* 1998; 66:4537-40

31. Yip HC, Karulin AY, Tary-Lehmann M, Hesse MD, Radeke H, Heeger PS, Trezza RP, **Heinzel FP**, Forsthuber T and Lehmann PV. Adjuvant guided type-1 and type-2 immunity: Infectious/noninfectious dichotomy defines the class of response. *J Immunol* 1999; 162: 3942-3949
32. Sang DK, Ouma JH, John C, Whalen CC, King C, Mahmoud AAF and **Heinzel FP**. Increased levels of soluble interleukin-4 receptor in serum of patients with visceral leishmaniasis. *J Infect Dis* 1999; 179: 743-6
33. Balkhy HH and **Heinzel FP**. Endotoxin fails to induce interferon- γ in endotoxin tolerant mice: Deficiencies in both IL-12 heterodimer production and IL-12 responsiveness. *J Immunol* 1999; 162: 3633-3638
34. **Heinzel FP** and Rerko RM. Cure of progressive murine leishmaniasis: IL-4 dominance is abolished by transient CD4⁺ T cell depletion and Th1-selective cytokine therapy. *J Exp Med* 1999; 189:1895-1905
35. **Heinzel FP** and Maier RA, Jr. IL-4 independent acceleration of cutaneous leishmaniasis in susceptible BALB/c mice following treatment with anti-CTLA4 antibody. *Infect Immun* 1999; 67:6454-6460
36. Martin D, Pearlman E, King CL and **Heinzel FP**. Interferon- γ is necessary, but not sufficient for anti-CD40 antibody-mediated inhibition of the Th2 response to *Schistosoma mansoni* eggs. *J Immunol* 2000, 164:779-85
37. Kremer IB, Gould MP, Cooper KD and **Heinzel FP**. Pre-treatment with recombinant Flt3 ligand partially protects against progressive cutaneous leishmaniasis in susceptible BALB/c mice. *Infect Immun* 2001; 69:673-680
38. Yadavalli GK, Auletta JJ, Gould MP, Salata RA, Lee JH and **Heinzel FP**. Deactivation of the innate cellular immune response following endotoxic and surgical injury. *Exp Mol Pathol* 2001; 71:209-221
39. Khatri S, Lass JH, **Heinzel FP**, Petroll WM, Diaconu E, Kalsow CM and Pearlman E. Regulation of endotoxin-induced keratitis by PECAM-1, MIP-2, and Toll-like receptor 4. *Invest Ophthalmol Vis Sci* 2002; 43:2278-84
40. Pantenburg B, **Heinzel FP**, Das L, Heeger PS and Valujskikh A. T cells primed by *Leishmania major* infection cross-react with alloantigens and alter the course of allograft rejection. *J Immunol* 2002; 169:3686-93
41. Garhart CA, **Heinzel FP**, Czinn SJ, and Nedrud JG. Vaccine-induced reduction of *Helicobacter pylori* colonization in mice is IL-12-dependent, but IFN- γ - and iNOS-independent. *Infect Immun* 2003; 71:910-21
42. Murray HW, Moreira AL, Lu CM, DeVecchio JL, Matsushashi M, Ma X and **Heinzel FP**. Determinants of response to interleukin-10 blockade immunotherapy in experimental visceral leishmaniasis. *J Infect Dis* 2003; 188:458-64
43. Garhart CA, Nedrud JG, **Heinzel FP**, Czinn SJ. Vaccine-induced protection against *Helicobacter pylori* in mice lacking both antibodies and interleukin-4. *Infect Immun* 2003; 71:3628-33
44. Murray HW, Brooks EB, DeVecchio JL, **Heinzel FP**. Immunoenhancement combined with amphotericin B as treatment in experimental visceral leishmaniasis. *Antimicrob Agents Chemother* 2003; 47:2513-7

45. Murray HW, Lu CS, Brooks EB, Fichtl RE, DeVecchio JL and **Heinzel FP**. Modulation of T cell costimulation as immuno- or immunochemotherapy in experimental visceral leishmaniasis. *Infect Immun* 2003; 71:6453-62
46. Gould MP, Greene J, DeVecchio J, Bhoj V and **Heinzel FP**. Distinct modulatory effects of lipopolysaccharide and CpG on IL-18-dependent interferon-gamma production. *J Immunol* 2004; 172:1754-62
47. Anthony DD, Yonkers NL, Post AB, Asaad R, **Heinzel FP**, Lederman MM, Lehmann PV and Valdez H. Selective impairments in dendritic cell-associated function distinguish hepatitis C virus and HIV infection. *J Immunol* 2004; 172:4907-16
48. Auletta JJ, DeVecchio JL, Ferrara M and **Heinzel FP**. Distinct phases in recovery of reconstituted innate cellular mediated immunity following murine syngeneic bone marrow transplantation. *Biology of Blood and Marrow Transplantation* 2004; 10:834-7
49. Johnson AC, **Heinzel FP**, Diaconu E, Sun Y, Hise AG, Golenbock D, Lass JH and Pearlman E. Activation of toll-like receptor (TLR) 2, TLR4 and TLR9 in the mammalian cornea induces MyD88-dependent corneal inflammation. *IOVS* 2005; 46:589-95
50. Yadavalli GK, Chien JW, Wener KM, DeVecchio JL, Gupta S, Salata RA, Lee JH, Caldeira C, Auletta JJ and **Heinzel FP**. IL-12 and interferon-gamma synthetic deficiency is associated with dendritic cell cytopenia after cardiac surgery. *Shock* 2005; 24:26-33
51. Das L, DeVecchio JL and **Heinzel FP**. Flt3L-based immunoprophylaxis against infection is improved by adjuvant treatment with anti-IL-10 antibody. *J of Infect Dis* 2005; 192:693-702
52. Greene JA, DeVecchio JL, Gould MP, Auletta JJ and **Heinzel FP**. In vivo and in vitro regulation of type I IFN synthesis by synergistic effects of CD40 and Type II IFN. *J Immunol* 2006; 176:5995-6003
53. Gupta S, Gould MP, DeVecchio J, Canaday DH, Auletta JJ and **Heinzel FP**. CpG-Induced IFN γ expands TLR4-specific IL-18 responses in vivo. *Cell Immunol* 2006; 243:75-82
54. Daehnel K, Gillette-Ferguson I, Hise AG, Diaconu E, Harling MJ, **Heinzel FP** and Pearlman E. Filaria/Wolbachia activation of dendritic cells and development of Th1-associated responses is dependent on Toll-like receptor 2 in a mouse model of ocular onchocerciasis (river blindness). *Parasite Immunol* 2007; 29:455-65

CHAPTERS AND REVIEWS

1. Locksley RM, **Heinzel FP**, Sadick MD and Keifer MC. 1986. Immunobiology of murine cutaneous leishmaniasis. In: Molecular Strategies of Parasite Invasion, UCLA Symposium on Molecular and Cellular Biology, Vol. 42, (eds.) Agabian N, Goodman H, Noguiera N; Alan R. Liss, Inc., New York, NY, 1986; 291-300
2. **Heinzel FP** and Root RK. Antibodies. In: Mandell FL, Douglas RG and Bennett JE, eds. Principles and Practice of Infectious Diseases. 3rd Edition. Churchill Livingstone Inc., 1990
3. **Heinzel FP** and Root RK. Introduction to infectious diseases: Pathogenic mechanisms and host responses. In: Wilson JD, Braunwald E, Fauci AS, Isselbacher KJ, Martin JB, Petersdorf RG and Root RK, eds. Harrison's Principles of Internal Medicine. 12th Edition. McGraw-Hill Book Company, 1990

4. Locksley RM, Sadick MD, Holaday BJ, Bernstein MS, Pu RT, Dawkins RS and **Heinzel FP**. CD4+ T cell subsets in murine leishmaniasis. In New Strategies in Parasitology, McAdam KP, Churchill WJ, eds. Livingstone, Inc., New York, N.Y. 1989; 147-157
5. **Heinzel FP**, Sadick MD, Holaday BJ, Dawkins RS, Pu RT and Locksley RM. Cytokine production and function during murine leishmaniasis. In: Agabian N and Cerami A, eds. Parasites: Molecular biology, drug and vaccine design. Vol. 131. Alan R. Liss, Inc., New York, NY, 1990
6. **Heinzel FP**. Infections in patients with humoral immunodeficiency. *Hospital Practice*. 1989; 24:99-130
7. **Heinzel FP** and Nutman TB. Parasitic Diseases. In: Frank MM, Austen KF, Claman HN and Unanue ER eds. Samter's Immunological Diseases, 5th Edition. Little, Brown and Company, Boston, MA, 1994
8. **Heinzel FP**. Antibodies. In: Mandell FL, Douglas RG and JE Bennett, eds. Principles and Practice of Infectious Diseases. 4th Edition. Churchill Livingstone Inc., 1994
9. **Heinzel FP** and Ravdin JI. Vaccines to prevent infection by gastrointestinal parasites. In: Lamm ME, Blaser M and Ravdin JI, eds. Infections of the Gastrointestinal Tract. 1st Edition. Raven Press, Ltd., New York, 1995
10. **Heinzel FP**. Parasitic infection. In: J. G. Bartlett, ed. Infectious Diseases Board Review. Clinical Communications, New York, 1996
11. **Heinzel FP**. Protozoan infections: Virulence and immunity. In: Mahmoud A, ed. Lung Biology in Health and Disease: Parasitic Lung Diseases. Vol 101. Marcel Dekker, Inc. New York, 1997
12. **Heinzel FP**. Antibodies. In: Mandell FL, Douglas RG and Bennett JE, eds. Mandell, Douglas and Bennett's Principles and Practice of Infectious Diseases. 5th edition. Churchill Livingstone Inc. New York, Nov 1999
13. **Heinzel FP** and Nutman TB. Parasitic Diseases. In: Austen HN, Frank MM, Atkinson JP and Cantor H, eds. Samter's Immunological Diseases, 6th Edition. Lippincott Williams & Wilkins, Philadelphia, PA, 2001.

GRADUATE STUDENT THESIS COMMITTEES

Alyssa Johnson (MD/PhD)	1995-1996	Dr. Paul Lehmann, advisor "Adjuvant guided T cell responses in experimental allergic encephalomyelitis"
Diana Martin (PhD)	1996-2000	Dr. Chris King and Dr. Fred Heinzel, co-advisors "CD40 activation and schistosomiasis"
Rose Chu (MD/PhD)	1997-1999	Dr. Cliff Harding, advisor "Effects of bacterial DNA on accessory cell function and antigen processing and presentation"

Erika Noss (MD/PhD)	1997-	Dr. Henry Boom, advisor "Effects of <i>M. tuberculosis</i> infection on accessory cell function"
Robin Jump (MD/PhD)	1999-	Dr. Alan Levine, advisor "T cell costimulation in the pathogenesis of inflammatory bowel disease"
Rish Pai (MD/PhD)	2001 -	Dr. Cliff Harding, advisor "Modulation of Ag processing by 19kDa lipoprotein of <i>Mycobacterium tuberculosis</i> "
Adam Gehring (PhD)	2001-	Dr. Henry Boom, advisor " <i>Mycobacterium tuberculosis</i> modulation of macrophage function and the host immune response"
Angela Gill (PhD)	2003-	Dr. Eric Pearlman, advisor "Toll receptor function in bacterial keratitis"
Michelle Ehtling (MD/PhD)	2005-	Dr. Alan Levine, advisor "Age-related pathogenesis of inflammatory bowel disease in mice"

POSTDOCTORAL TRAINEES

1996-1998	David Sang, PhD "PCR and recombinant ELISA diagnosis of leishmaniasis in Kenya." FP Heinzl, advisor.
1997-1999	Hanan Balkhy, MD (Pediatric Infectious Diseases) "Molecular mechanisms of endotoxin induced immune paralysis". FP Heinzl, advisor.
1997-1999	Inger Kremer, PhD (Dermatology) "Cutaneous immunology of leishmaniasis: Effects of UV irradiation and dendritic cell growth factors on outcome". FP Heinzl, co-mentor with Kevin Cooper.
1998-1999	Jason Chien, MD (Adult Infectious Diseases) "Immunoparalysis after cardiopulmonary bypass". FP Heinzl, advisor.
1999-2002	Samir Latifi, MD Pediatric Intensive Care "The role of IL-10 in murine peritoneal sepsis". Co-mentored with Dr. Alan Levine.
2000-2003	Gopala Yadavalli, MD (Adult Infectious Diseases) "Common mechanisms in endotoxin tolerance and clinical immune paralysis". FP Heinzl, advisor.
2000-05	Jeff Auletta, MD (Pediatric Infectious Diseases) "Effect of hematopoietic cytokines on the innate cellular immune response in a mouse model of bone marrow transplantation. FP Heinzl, advisor.

- 2001-04 Lopamudra Das, PhD (Indian Institute of Chemical Biology). "Regulation of dendritic cell expansion and phenotype in murine leishmaniasis: Implications for immunotherapy" FP Heinzl, advisor.
- 2001-05 Donald Anthony, MD, PhD (Adult Rheumatology) "Dendritic Cell function in HCV and HCV-HIV infection" FP Heinzl, co-mentor with Dr. Michael Lederman.
- 2002-06 Zahra Darejeh, MD (School of Medicine, Shiraz, Iran) "Molecular immunology of UV exposure in a model of murine leishmaniasis" Co-mentored with Dr. Kevin Cooper.
- 2004-06 Sameer Gupta, MD (Pediatric Intensive Care) "Mechanisms of immune paralysis after surgery" FP Heinzl, advisor.

DOCTORAL STUDENTS

- 1998-2000 Diana Martin. "CD40 activation and schistosomiasis"
F. Heinzl and C. King, co-advisors.

MISCELLANEOUS

Other teaching duties:

VAMC

Morbidity and Mortality Rounds, 2-4 hrs/yr, 1992-2005

1991-2005 Teaching on clinical wards as clinical attending: One month infectious diseases and two months medicine ward per year

Citywide

City-wide Infectious Diseases Case Conference. 0.5 hr of presentation/year for 1992-2005
Immunology journal clubs