

Denise M. Monack, Ph.D.

A. ACADEMIC HISTORY

Colleges and Universities Attended

1984 B.S. Genetics, University of California, Davis,
2002 Ph.D. Microbiology and Immunology, Stanford University School of Medicine

Scholarships and Honors

1984 High Honors upon receipt of Bachelor of Science, Genetics, University of California, Davis.
2001 Sydney Raffel Award for Outstanding Graduate Student, Department of Microbiology and Immunology, Stanford University
2008 Baxter Faculty Scholar, Donald E. and Delia B. Baxter Foundation
2008 Terman Fellow, Stanford University School of Medicine

Other Study and Research Opportunities

1980-84 Undergraduate research under Dr. Richard Criddle, University of California at Davis, CA
1983 Summer Intern, Fermentation Department, Genentech, Inc., South San Francisco, CA
1989 Part-time work at Affymax Research Institute, Palo Alto, CA

B. EMPLOYMENT HISTORY

1984-87 Life Science Technician, Department of Microbiology and Immunology, Stanford University School of Medicine, Dr. Stanley Falkow's Lab
1987-98 Research Assistant, Department of Microbiology and Immunology, Stanford University School of Medicine, Dr. Stanley Falkow's Lab
2002-07 Senior Research Scientist, Department of Microbiology and Immunology, Stanford University School of Medicine
Sep 2007 Acting Assistant Professor, Department of Microbiology and Immunology, Stanford University School of Medicine
Jun 2008 Assistant Professor, Department of Microbiology and Immunology, Stanford University School of Medicine

Teaching Experience

C. PUBLIC AND PROFESSIONAL SERVICE

Editorial Board

2007 to present *PLoS Pathogens*
2010 to present *Infection and Immunity*

Ad Hoc Reviewer

1998 to present *Proceedings of the National Academy of Sciences*
1998 to present *Molecular Microbiology and Cellular Microbiology*
1998 to present *Infection and Immunity*
1999 to present *Microbes and Infection*
2001 to present *Science*
2003 to present *Cell*
2005 to present *PLOS Pathogens*

Scientific Advisory Board

2009 to 2013 NIH/NIAID Systems Biology Working Group for Systems Biology Program at the University of Washington.

D. POST-DEGREE HONORS AND AWARDS, INCLUDING MEMBERSHIPS IN PROFESSIONAL SOCIETIES

1992 to present Member, American Society for Microbiology

E. BIBLIOGRAPHY

Peer-Reviewed Original Articles (55 total)

1. Stibitz, S., W. Aaronson, D. Monack and S. Falkow. 1988. The vir locus and phase-variation in *Bordetella pertussis*. J. Exp. Clin. Med. (Japan) 13(Suppl):223-226.
2. Arico, B., J.F. Miller, C. Roy, S. Stibitz, D. Monack, S. Falkow, R. Gross, and R. Rappuoli. 1989. Sequences required for expression of *Bordetella pertussis* virulence factors share homology with prokaryotic signal transduction proteins. Proc. Natl. Acad. Sci., U.S.A. 86:6671-5.
3. Monack, D.M., B. Arico, R. Rappuoli and S. Falkow. 1989. Phase variants of *Bordetella bronchiseptica* arise by spontaneous deletions in the vir locus. Mol. Microbiol. 3:1719-1728.
4. Monack, D., J. J. Munoz, M. G. Peacock, W. J. Black and S. Falkow. 1989. Expression of pertussis toxin correlates with pathogenesis in *Bordetella* species. J Infect Dis. 159(2): 205-210.
5. Stibitz, S., W. Aaronson, D. Monack and S. Falkow. 1989. Phase variation in *Bordetella pertussis* by frameshift mutation in a gene for a novel two-component system. Nature. 338(6212): 266-269.
6. Arico, B., V. Scarlato, D.M. Monack, S. Falkow. 1991. Structural and genetic analysis of the *bvg* locus in *Bordetella* species. Molec. Micro. 5:2481-2491.
7. Akerley, B.J. D.M. Monack, S. Falkow, J.F. Miller. 1992. The *bvgAS* locus negatively controls motility and synthesis of flagella in *Bordetella bronchiseptica*. J. Bacteriol. 174:980-990.
8. Monack, D.M. and S. Falkow. 1993. Cloning of *Bordetella bronchiseptica* urease genes and analysis of colonization by a urease-negative mutant strain in a guinea-pig model. Molec. Microbiol. 10:545-553.
9. Pascopella, L., B. Raupach, N. Ghori, D. Monack, S. Falkow, and PLC Small. 1995. Host restriction phenotypes of *Salmonella typhi* and *Salmonella gallinarum*. Infect. Immun. 63:4329-4335.
10. Monack D.M., B. Raupach, A.E. Hromockyj, and S. Falkow. 1996. *Salmonella typhimurium* invasion induces apoptosis in infected macrophages. Proc. Natl. Acad. Sci., USA 93:9833-9838.
11. Valdivia R.H., A.E. Hromockyj, D. Monack, L. Ramakrishnan, and S. Falkow. 1996. Applications for green fluorescent protein (GFP) in the study of host-pathogen interactions. Gene. 173:47-52.
12. Hensel M, J.E. Shea, B. Raupach, D. Monack, S. Falkow, C. Gleeson, T. Kubo, and D.W. Holden. 1997. Functional analysis of *ssaJ* and the *ssaK/U* operon, 13 genes encoding components of the type III secretion apparatus of *Salmonella* pathogenicity island 2. Mol. Microbiol. 24:155-167.
13. Monack, D.M., J. Meccas, N. Ghori, and S. Falkow. 1998. Yersinia signals macrophages to undergo apoptosis and YopJ is necessary for this cell death. Proc. Natl. Acad. Sci, USA 94:10385-90.
14. Cirillo, D.M., R. H. Valdivia, D.M. Monack, and S. Falkow. 1998. Macrophage-dependent induction of the *Salmonella* pathogenicity island 2-type III secretion system and its role in intracellular survival. Mol. Microbiol. 30:175-88.
15. Monack, D. M., J. Meccas, D. Bouley, and S. Falkow. 1998. Yersinia-induced apoptosis in vivo aids in the establishment of a systemic infection of mice. J. Exp. Med. 188:2127-37.
16. Hersch, D., D.M. Monack, M.R. Smith, N. Ghori, S. Falkow and A. Zychlinski. 1999. The *Salmonella* invasin SipB induces macrophage apoptosis by binding to caspase-1. Proc. Natl., Acad. Sci. U.S.A., 96:2396-401.
17. Monack, D. and S. Falkow. 2000. Apoptosis as a common bacterial virulence strategy. Int. J. Med. Microbiol. 290:7-13.
18. Monack, D.M. D. Hersh, N. Ghori, D. Bouley, A. Zychlinsky, and S. Falkow. 2000 *Salmonella* exploits caspase-1 to colonize Peyer's patches in a murine typhoid model. J. Exp. Med. 192:249-58.
19. Robbins, J.R., D. Monack, S.J. McCallum, A. Vegas, E. Pham, M.B. Goldberg, and J.A. Theriot. 2001. The making of a gradient: IcsA (VirG) polarity in *Shigella flexneri*. Mol. Microbiol. 41:861-72.
20. Monack, D. and J. Theriot. 2001. Actin-based motility is sufficient for bacterial membrane protrusion formation and host cell uptake. Cellular Microbiol. 3:633-47.

21. Monack, D., W. Navarre, and S. Falkow. 2001. *Salmonella*-induced macrophage death: the role of caspase-1 in death and inflammation. *Microbes Infect.* 3:1201-12.
22. Monack, D., C.S. Detweiler, and S. Falkow. 2001. *Salmonella* pathogenicity island 2-dependent macrophage death is mediated in part by the host cysteine protease caspase-1. *Cell. Microbiol.* 3:825-327.
23. Catron, D.M., M.D. Sylvester, Y. Lange, M. Kadekoppala, B.D. Jones, D.M. Monack, S. Falkow, and K. Haldar. 2002. The *Salmonella*-containing vacuole is a major site of intracellular cholesterol accumulation and recruits the GPI-anchored protein CD55. *Cell Microbiol.* 4:315-328.
24. Detweiler, C.S., D.M. Monack, I.E. Brodsky, H. Mathew, and S. Falkow. 2003. *virK*, *somA* and *rscC* are important for systemic *Salmonella enterica* serovar Typhimurium infection and cationic peptide resistance. *Mol Microbiol.* 48:385-400.
25. Kim, C.C., D. Monack, and S. Falkow. 2003. Modulation of virulence by two acidified nitrite-responsive loci of *Salmonella enterica* serovar Typhimurium. *Infect Immun.* 71:3196-3205.
26. Monack DM, DM Bouley, and S. Falkow. 2004. *Salmonella typhimurium* persists within macrophages in the mesenteric lymph nodes of chronically infected *Nramp1^{+/+}* mice and can be reactivated by IFN γ neutralization. *J. Exp. Med.* 199:231-241.
27. Mariathason S, K. Newton, D.M. Monack, D. Vucic, D.M. Franch, W.P. Lee, M. Roose-Girma, S. Erickson, V.M. Dixit. 2004. Differential activation of the inflammasome by caspase-1 adaptors ASC and Ipaf. *Nature* 430:213-8.
28. Monack, D.M., A. Mueller, and S. Falkow. 2004. Persistent bacterial infections: the interface of the pathogen and the host immune system. *Nat Rev Microbiol* 2:747-765.
29. Monack, D.M., D.M. Bouley, and S. Falkow. 2004. *Salmonella typhimurium* persists within macrophages in the mesenteric lymph nodes of chronically infected *Nramp1^{+/+}* mice and can be reactivated by IFN γ neutralization. *J Exp Med* 199:231-241.
30. Zhou, H. D.M. Monack, N. Kayagaki, I. Wertz, J. Yin, B. Wolf, and V.M. Dixit. 2005. *Yersinia* virulence factor YopJ acts as a deubiquitinase to inhibit NF-kappa B activation. *J. Exp. Med.* 202:1327-32.
31. Mariathasan, S., D.S. Weiss, K. Newton, J. McBride, K. O'Rourke, M. Roose-Girma, W.P. Lee, Y. Weinrauch, D.M. Monack, and V.M. Dixit. 2006. Cryopyrin activates the inflammasome in response to toxins and ATP. *Nature.* 440:228-32.
32. Brodsky, I.E., N. Ghorri, S. Falkow, and D. Monack. 2005. Mig-14 is an inner membrane-associated protein that promotes *Salmonella typhimurium* resistance to CRAMP, survival within activated macrophages and persistent infection. *Mol Microbiol* 55:954-972.
33. Mariathasan, S., D. Weiss, V. Dixit, D. Monack. Innate immune defense against *Francisella tularensis* requires the ASC/caspase-1 axis. *J Exp Med.* 202:1043-1049.
34. Lawley, T.D., K. Chan, L.J. Thompson, C.C. Kim, G.R. Govoni, and D.M. Monack. 2006. Genome-wide screen for *Salmonella* genes required for long-term systemic infection of the mouse. *PLoS Pathog.* Feb;2(2):e11. Epub Feb 24.
35. Raupach, B., S.K. Peuschel, D.M. Monack and Zychlinsky, A. 2006. Caspase-1-mediated activation of interleukin-1beta (IL-1beta) and IL-18 contributes to innate immune defenses against *Salmonella enterica* serovar Typhimurium infection. *Infect. Immun.* 74:4922-6.
36. Brotcke, A., D.S. Weiss, C.C. Kim, P. Chain, S. Malfatti, E. Garcia and D.M. Monack. 2006. Identification of MglA-regulated genes reveals novel virulence factors in *F. tularensis*. *Infect Immun* Dec;74(12):6642-55.
37. Mariathasan, S. and D.M. Monack. 2007. Inflammasome adaptors and sensors: intracellular regulators of infection and inflammation. *Nat. Rev. Immunol.* 7:31-40.
38. Weiss, D.S., A. Brotcke, T. Henry, J.J. Margolis, K. Chan and D.M. Monack. 2007. In vivo negative selection screen identifies genes required for *Francisella* virulence. *Proc. Natl. Acad. Sci. USA.* 104:6037-42.
39. Weiss, D.S., T. Henry, and D.M. Monack. 2007. *Francisella tularensis*: Activation of the inflammasome. *Ann. N.Y. Acad. Sci.* 1105:219-37.
40. Henry, T., A. Brotcke, D.S. Weiss, L.J. Thompson and D.M. Monack. 2007. Type I interferon signaling is required for activation of the inflammasome during *Francisella* infection. *J. Exp. Med.* 204:987-94.
41. Henry, T. and D.M. Monack. 2007. Activation of the inflammasome upon *Francisella tularensis* infection: Interplay of innate immune pathways and virulence factors. *Cell. Microbiol.* 9:2543-51.
42. Lawley, T.D., D.M. Bouley, Y.E. Hoy, C. Gerke, D.A. Relman and D.M. Monack. 2007. Host transmission of *Salmonella enterica* serovar Typhimurium is controlled by virulence factors and the indigenous intestinal microbiota. *76(1):403-16.*

43. Brotcke, A. and Monack, D.M. 2008. Identification of fevR, a novel regulator of virulence gene expression in *Francisella*. *Infect Immun.* Aug;76(8):3473-80 PMID: PMC2493208.
44. Lightfield, K. L., J. Persson, S. W. Brubaker, C. E. Witte, J. von Moltke, E. A. Dunipace, T. Henry, Y. H. Sun, D. Cado, W. F. Dietrich, D. M. Monack, R. M. Tsolis, and R. E. Vance. 2008. Critical function for Naip5 in inflammasome activation by a conserved carboxy-terminal domain of flagellin. *Nat Immunol* 9:1171-8.
45. Monack, D. M. 2008. The inflammasome: a key player in the inflammation triggered in response to bacterial pathogens. *J Pediatr Gastroenterol Nutr* 46 Suppl 1:E14.
46. Winter, S. E., P. Thiennimitr, S. P. Nuccio, T. Haneda, M. G. Winter, R. P. Wilson, J. M. Russell, T. Henry, Q. T. Tran, S. D. Lawhon, G. Gomez, C. L. Bevins, H. Russmann, D. M. Monack, L. G. Adams, and A. J. Baumler. 2009. Contribution of flagellin pattern recognition to intestinal inflammation during *Salmonella enterica* serotype typhimurium infection. *Infect Immun* 77:1904-16.
47. El-Etr, S. H., J. J. Margolis, D. Monack, R. A. Robison, M. Cohen, E. Moore, and A. Rasley. 2009. *Francisella tularensis* type A strains cause the rapid encystment of *Acanthamoeba castellanii* and survive in amoebal cysts for three weeks postinfection. *Appl Environ Microbiol* 75:7488-500.
48. McLaughlin, L. M., G. R. Govoni, C. Gerke, S. Gopinath, K. Peng, G. Laidlaw, Y. H. Chien, H. W. Jeong, Z. Li, M. D. Brown, D. B. Sacks, and D. Monack. 2009. The *Salmonella* SPI2 effector Ssel mediates long-term systemic infection by modulating host cell migration. *PLoS Pathog* 5:e1000671.
49. Margolis JJ, El-Etr S, Joubert LM, Moore E, Robison R, Rasley A, Spormann AM, Monack DM. 2009. *Francisella tularensis* subspecies novicida chitinases and Sec secretion system contribute to biofilm formation on chitin. *Appl Environ Microbiol.* Nov 30. [Epub ahead of print].
50. Thompson, L. J., S. J. Dunstan, C. Dolecek, T. Perkins, D. House, G. Dougan, T. H. Nguyen, T. P. Tran, C. D. Doan, T. P. Le, T. D. Nguyen, T. H. Tran, J. J. Farrar, D. Monack, D. J. Lynn, S. J. Popper, and S. Falkow. 2009. Transcriptional response in the peripheral blood of patients infected with *Salmonella enterica* serovar Typhi. *Proc Natl Acad Sci U S A* 106:22433-8.
51. Ghosn, E. E., A. A. Cassado, G. R. Govoni, T. Fukuhara, Y. Yang, D. M. Monack, K. R. Bortoluci, S. R. Almeida, and L. A. Herzenberg. 2010. Two physically, functionally, and developmentally distinct peritoneal macrophage subsets. *Proc Natl Acad Sci U S A* 107:2568-73.
52. Henry, T., G. S. Kirimanjeswara, T. Ruby, J. W. Jones, K. Peng, M. Perret, L. Ho, J. D. Sauer, Y. Iwakura, D. W. Metzger, and D. M. Monack. 2010. Type I IFN signaling constrains IL-17A/F secretion by gammadelta T cells during bacterial infections. *J Immunol* 184:3755-67.
53. Jones JW, N. Kayagaki, P Broz, T Henry, K Newton, K O'Rourke, S Chan, J Dong, Y Qu, M Roose-Girma, VM Dixit, DM Monack. 2010. Absent in melanoma 2 is required for innate immune recognition of *Francisella tularensis*. *Proc Natl Acad Sci U S A.* 2010 May 25;107(21):9771-6. Epub 2010 May 10.
54. Peng K and DM Monack. 2010. Indoleamine 2,3-dioxygenase 1 is a lung-specific innate immune defense mechanism that inhibits growth of *Francisella tularensis* tryptophan auxotrophs. *Infect Immun.* 2010 Jun;78(6):2723-33. Epub 2010 Apr 12.53.
55. Broz P, K. Newton, M. Lamkanfi, S. Mariathasan, VM Dixit and DM Monack. 2010. Redundant roles for inflammasome receptors NLRP3 and NLRC4 in host defense against *Salmonella*. *J Exp Med.* Jul 5.

Reviews

1. Monack, D.M. and S. Falkow. 2000. Apoptosis as a common bacterial virulence strategy. *Int. J. Med. Microbiol.* 290: 7-13.
2. Monack, D.M., W.W. Navarre, and S. Falkow. 2001. *Salmonella*-induced macrophage death: the role of caspase-1 in death and inflammation. *Microbes Infect.* 3: 1201-1212.
3. Monack, D.M., A. Mueller, and S. Falkow. 2004. Persistent bacterial infections: the interface of the pathogen and the host immune system. *Nat. Rev. Microbiol.* 2: 747-765.
4. Mariathasan S. and D.M. Monack. 2007. The inflammasome recognition of bacterial pathogens. *Nat. Rev. Immunol.* 7: 31-40.
5. Brodsky, I. E., and D. Monack. 2009. NLR-mediated control of inflammasome assembly in the host response against bacterial pathogens. *Semin Immunol.*

Book Chapters

1. Weiss, D. T. Henry and D.M. Monack. 2007. Tularemia: *Francisella tularensis* activation of the inflammasome. In: *Francisella tularensis: Biology, Pathogenicity, Epidemiology, and Biodefense*. Editors, Kwak, Y.A., D.W. Metzger, F. Nano, A. Sjostedt, and R. Titball, Ann. N.Y. Acad. Sci..
2. Monack D.M. "Intracytosolic Sensing of Pathogens: Nucleic Acid Receptors, NLRs, and the Associated Responses during Infections and Autoinflammatory Diseases." 2009. In: *Phagocyte-Pathogen Interactions*. Editors, Gordon S. and D. Russell.

Abstracts (there are too many to list here, but these are representative)

1. American Society for Microbiology General Meeting, Atlanta, GA. May 11, 1993. Poster abstract, "Cloning of *Bordetella bronchiseptica* urease genes and analysis of colonization by a urease-negative mutant strain in a guinea pig model".
2. American Society for Microbiology General Meeting, New Orleans, LA. May 9, 1996. Poster abstract, "*Salmonella* invasion triggers apoptosis in macrophages."
3. American Society for Microbiology General Meeting. Miami, FL. May 4, 1997. Poster abstract #B199, "*Yersinia* signal murine macrophages to undergo apoptosis".
4. Stanford Campus Report, May 1997 article entitled "Microbial guests induce host cell suicide" which was written by a staff writer on current research project.

Invited presentations by year

- 1996** Department of Microbiology and Immunology retreat, Fallen Leaf, CA
 "*Salmonella* invasion triggers apoptosis in macrophages"
- 1998** Bay Area Pathogenesis Meeting, San Francisco, CA. Invited speaker
 "*Yersinia pseudotuberculosis* yopJ mutant does not induce apoptosis in macrophages and is attenuated in mice"
- Gordon Research Conference, Bacterial Pathogenesis, Proctor Academy, NH. Invited speaker
 "*Yersinia*-induced apoptosis: a potential role in the murine of infection"
- 1999** Cold Spring Harbor meeting on Bacterial Pathogenesis, Cold Spring Harbor, NY. Invited speaker
 "*Salmonella* exploits caspase-1 to colonize the Peyer's patches during a murine infection"
- Department of Microbiology and Immunology Retreat, Fallen Leaf Lake, CA
 "Actin-based motility is sufficient for bacterial membrane protrusions and host cell uptake"
- 2000** American Society for Microbiology General Meeting, Orlando, FL
 "*Salmonella* exploits caspase-1 during infection"
- 2002** Immunity and Infection Symposium, Awaji, Japan
 "DNA Microarrays to Understand Persistent *Salmonella* Infections"
- The Max Plank Institute, Berlin, Germany. Invited seminar speaker
 "DNA Microarrays to Understand Persistent *Salmonella* Infections"
- 2004** Gordon Conference on Bacterial Pathogens and Toxins, Proctor Academy, NH
 "Persistent *Salmonella* Infection in the Mouse"
- 2005** Microbiology Symposium, Stanford University, Stanford, CA
 "Innate Defense against *Francisella* requires the ASC/caspase-1 axis"
- UCSF Molecular Pathogenesis journal club, San Francisco, CA
 "*Salmonella* Persistence Factors"

Foundation Merieux and the Salk Institute conference on Immune evasion strategies of human pathogens. Annecy, France
Moderator, Session: "Evasion from innate immunity"

Oregon State University, Department of Microbiology and Immunology, Portland, OR. Invited seminar speaker.
"Salmonella Persistence Factors"

2006 American Society for Microbiology Biodefense Research meeting, Washington, D.C. Session Chair
"Understanding Bacterial Virulence"

ASM Biodefense Research meeting. Washington, D.C., Invited speaker, plenary session
"Francisella tularensis and Innate Immunity".

American Society for Microbiology General Meeting, Orlando, FL. Invited speaker
"Intracellular replication of *Francisella tularensis*: the interface of the pathogen and innate immunity"

University of Washington, Department of Microbiology and Immunology. Invited seminar speaker
"Francisella tularensis replication in macrophages: activation of the inflammasome and innate immunity"

Cerus Corporation, Concord, CA. Invited speaker
"Francisella tularensis replication in macrophages: activation of the inflammasome and innate immunity"

Second Annual Meeting of the Pacific Southwest Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research. Reno, NV. Invited speaker. "Francisella tularensis replication in macrophages: activation of the inflammasome and innate immunity"

2nd ASM Conference on *Salmonella*: From Pathogenesis to Therapeutics, Victoria, BC, Canada.
Invited speaker.
"Salmonella Persistence and Transmission Factors"

University of California, Santa Cruz CA. Department of Environmental Toxicology. Seminar
"Francisella tularensis pathogenesis--From bacterial genomic screens to innate immunity"

Department of Microbiology and Immunology, Stanford University. Seminar
"Francisella tularensis pathogenesis--From bacterial genomic screens to innate immunity"

2007 University of California, Davis CA., Invited speaker
"The interface of cytosolic *Francisella tularensis* and the innate immune system"

American Society for Microbiology General Meeting, Toronto. Invited speaker and session chair
"Type I Interferon is required for inflammasome activation during *Francisella* infection"

Gordon Research Conference--Phagocyte, Bryant University Rhode Island. Invited speaker
"Type I Interferon is required for inflammasome activation during *Francisella* infection"

FASEB Conference on Host-Pathogen Interactions, Snowmass, CO. Invited speaker
"Type I Interferon is required for inflammasome activation during *Francisella* infection"

ICAAC general meeting, Chicago, IL. Invited speaker

“Bacterial activation of the inflammasome”

Rocky Mountain Laboratories, Hamilton, MT. Guest seminar series
“*Francisella* pathogenesis and innate immunity”

2008

University of Tennessee, Memphis TN. Invited speaker
“The interface of cytosolic *Francisella tularensis* and the innate immune system”

University of Ohio, Columbus OH. Invited speaker. “The interface of cytosolic *Francisella tularensis* and the innate immune system”

Digestive Disease Center Symposium in honor of Dr. Stanley Falkow. Invited speaker.
“*Salmonella* persistence and transmission: from genetic screens to the intestinal microbiota”

Wellcome Trust Advanced Course: Molecular Basis of Bacterial Infection 11-17 May 2008. Instructor
“Innate immunity and the Inflammasomes”

Novartis, Siena Italy. Invited speaker
“Innate immunity and the Inflammasome”

International Endotoxin and Innate Immunity Meeting in Edinburgh, UK, July 30 - August 2. Invited speaker
“*Francisella tularensis*: from genetic screens to innate immunity”

University of Texas, Southwestern. Invited speaker
“*Francisella tularensis*: from genetic screens to innate immunity”

2009

University of Victoria, B. C. Invited speaker
“*Francisella tularensis*: from genetic screens to innate immunity”

University of Virginia. Invited speaker
“*Salmonella* persistence and transmission: from genetic screens to the intestinal microbiota”

Uniformed Services University of the Health Sciences. Invited speaker
“*Salmonella* persistence and transmission: from genetic screens to the intestinal microbiota”

University of Kentucky. Invited speaker
“*Francisella* pathogenesis: from genetic screens to innate immunity”

American Society for Microbiology General Meeting. Philadelphia. Invited speaker
Salmonella transmission and virulence factors

University of California, Los Angeles. Invited speaker
“*Salmonella* persistence and transmission mechanisms”

American Society for Rickettsiology 23rd meeting. South Carolina. Keynote speaker
“The genetic and molecular mechanisms of intracellular bacterial pathogens, using *Salmonella* and *Francisella*, to study the complex host-pathogen interactions”

Cold Spring Harbor meeting on Bacterial Pathogenesis, Cold Spring Harbor, NY. Invited speaker
“Inflammasome activation during infections with intracellular bacterial pathogens”

6th International Conference on Tularemia, Berlin. Invited speaker
“Francisella and innate immunity”

Harvard School of Public Health Immunology and Infectious Diseases Department, Boston. Invited speaker
“Salmonella persistence and transmission” from genetic screens to the intestinal microbiota”

West Coast Bacterial Physiologists Meeting, Asilomar. Invited speaker.
“Salmonella persistence is mediated by a bacterial effector that modulates phagocyte migration”

2010

Emory University School of Medicine and Emory Vaccine Center, Atlanta. Invited speaker.
“Salmonella persistence mechanisms”

5th International Meeting on Inflammatory Bowel Disease, Capri Italy. Invited speaker.
“Bacterial infections and the Inflammasome”

1st International EMBO Workshop on Emerging themes in Infection Biology, la Colle sur Loup, France.
Invited speaker.
“Intracellular lifestyle of persisting Salmonella”

American Society for Microbiology General Meeting. San Diego. Invited speaker
“*Salmonella* transmission and virulence factors”

Banff Conference on Infectious Diseases, Banff Canada. Invited speaker.
“Innate immune recognition of intracellular bacterial pathogens”

University of Washington Pathobiology and Department of Global Health. Invited speaker.
“Mechanisms of Francisella pathogenesis and Innate Immunity”

Research Support

Active

NIH-NIAID AI-65359 5/20/05-4/30/14
(PI: Alan Barbour, UC-Irvine)
Pacific-Southwest Center for Biodefense and Emerging Infectious Diseases Research
Project: Molecular mechanisms of Francisella tularensis pathogenesis and immunity
Identify and characterize novel core and tissue-specific virulence factors in *F. tularensis*.
Role: PI of Project

NIH-NIAID PO1 AI063302 02/24/06-5/31/11
(PI: Daniel Portnoy – UC-Berkeley)
Project 3 (PI): Molecular and Genetic Basis of *Francisella* Pathogenesis
Identify regulatory circuits in host cells that are manipulated by *F. tularensis* and other key Intracellular
pathogens relevant to biodefense.
Role: PI of Projectman Fellows Program 10/1/08-9/30/11
The inflammasome and *Salmonella* persistence
Identify the molecular mechanisms in the inflammasome mediated immunity during Salmonella persistence.
Role: PI

The Burroughs Wellcome Fund 11/01/09-10/31/15
Host pathogen Interactions during Persistent Salmonella Infection
To provide mechanistic insights into the role of the inflammasome and innate immunity in the complex
interactions between the host and pathogen during persistent infection

Role: PI

Terman Fellows Program

2008-2011

The inflammasome and *Salmonella* persistence

Identify the molecular mechanisms in the inflammasome mediated immunity during *Salmonella* persistence.

Role: PI

Completed Research Support

NIH-NIAID PO1 AI063302

02/24/06-7/31/09

(PI: Daniel Portnoy – UC-Berkeley)

Project 3 (PI): Molecular and Genetic Basis of *Francisella* Pathogenesis

Identify regulatory circuits in host cells that are manipulated by *F. tularensis* and other key Intracellular pathogens relevant to biodefense.

Role: PI of Project

NIH-NIAID AI-65359

5/20/05-4/30/09

(PI: Alan Barbour, UC-Irvine)

Pacific-Southwest Center for Biodefense and Emerging Infectious Diseases Research

Project: Molecular mechanisms of *Francisella tularensis* pathogenesis and immunity

Identify and characterize novel core and tissue-specific virulence factors in *F. tularensis*.

Role: PI of Project

PO3 DK56339 Digestive Disease Center Pilot Study Award 3/1/08-2/28/09

PI: Greenberg, HB

Molecular mechanisms of a *Salmonella* effector protein in persistence

To specifically study the persistent phase of *Salmonella* infection and to determine how the pathogen is able to manipulate and evade the host immune response.

NIH-NIAID PO1 AI063302 (Diversity Supplement)

02/01/07-1/31/09

(PI: Daniel Portnoy – UC-Berkeley)

(graduate student salary only)

Project 3: Molecular and Genetic Basis of *Francisella* Pathogenesis

Identify regulatory circuits in host cells that are manipulated by *F. tularensis* and other key Intracellular pathogens relevant to biodefense.

Role: PI of Project