**CURRICULUM VITAE**

**NAME:** William Robert Jacobs, Jr.

**ADDRESS:** Howard Hughes Medical Institute

Albert Einstein College of Medicine

1300 Morris Park Avenue

Bronx, NY 10461

**EDUCATIONAL DEGREES:**

Ph.D. Molecular Cell Biology

University of Alabama at Birmingham

Birmingham, Alabama, June, 1985

B.A. Mathematics

Edinboro State University

Edinboro, Pennsylvania, May, 1977

**POST-GRADUATE TRAINING:**

June 1985 - Nov. 1986 Postdoctoral Fellow in the laboratory of Barry R. Bloom,

Dept. of Microbiology and Immunology

Albert Einstein College of Medicine

Sept. 1979 June 1985 Predoctoral Fellow in the laboratory of Drs. Roy Curtiss III

and Josephine E. Clark-Curtiss, University of Alabama at

Birmingham, and Dept. of Biology, Washington University

Oct. 1978 - July 1979 Instructor of Calculus and Physics, Triangle Tech, Erie, PA

**PROFESSIONAL EMPLOYMENT AND APPOINTMENTS:**

October 1997 - Present Investigator

Howard Hughes Medical Institute

Albert Einstein College of Medicine

May 1993 - Oct. 1997 Associate Investigator

Howard Hughes Medical Institute

Albert Einstein College of Medicine

July 1996 – Present Professor

Depts. Of Microbiology and Immunology and Molecular

Genetics

Albert Einstein College of Medicine

July 1992 - July 1996 Associate Professor

Depts. of Microbiology and Immunology and Molecular

Genetics

Albert Einstein College of Medicine

Oct. 1990 - June 1992 Assistant Professor

Dept. of Molecular Genetics,

Albert Einstein College of Medicine

May 1990 - May 1993 Assistant Investigator

Howard Hughes Medical Institute

Albert Einstein College of Medicine

Sept. 1987 - June 1992 Assistant Professor

Dept. of Microbiology and Immunology

Albert Einstein College of Medicine

Nov. 1986 - Aug. 1987 Associate Scientist, Dept. of Microbiology and Immunology

Albert Einstein College of Medicine

**AECOM RESPONSIBILITIES:**

1992 - 1993 Co-Chairman of the Divisional Qualifying Exam Committee

1993 - 1994 Chairman, Divisional Qualifying Exam Committee

1988 - Present Division Qualifying Exam Committee

1991 - Present Biohazard Committee

2002 – Present Gene Therapy Core Committee

**TEACHING RESPONSIBILITIES:**

1989 - Present Lecturer in Molecular Genetics Course

1989 - Present Lecturer in Infectious Disease Course

1996 – Present Lecturer in the Pathogenesis Course

2003 Lecturer in the Waksman Foundation for Microbiology Lectures Program

**PROFESSIONAL SOCIETY MEMBERSHIP:**

Jan. 1991 - Present Member of the editorial board of Infection and Immunity

June 1990 - Present Ad hoc Member of the Molecular Biology of Mycobacteria

Subcommittee of IMMLEP (Immunology of Leprosy)

Steering

Committee, World Health Organization

June 1987 - May 1990 Member of THELEP (Chemotherapy of Leprosy) Steering

Committee, World Health Organization

**AWARDS AND HONORS:**

April 2013 Member National Academy of Sciences

January 2013 Marshall Horwitz Lecture Award

November 2011 Fellow, American Association for the Advancement of Science (AAAS)

May 2003 Gardner Middlebrook Life-Time Achievement Award

April 2003 Fellow, American Academy of Microbiology

October 2001 Ellison Medical Foundation Senior Scholar Award in Global Infectious Disease

July 2000 Burroughs Wellcome Fund Award

January 1998 K.F. Myers Memorial Lecture; Tuberculosis Control: Finding Gold in Soil and Cow Dung. University of California, San Francisco

October 1997 Mellini Award

May 1996 American Society of Microbiology Annual Meeting, Division U Honorary Lecture, New Orleans, LA A View from a Geneticist: A 1914-D Penny. Lotto, Tuberculosis Control, and Beyond.

Sept. 1993 Special Grant Award for Drug Discovery Burroughs Wellcome Fund

May 1993 Distinguished Alumni Award Dept. of Microbiology and Immunology University of Alabama at Birmingham

June 1991 Distinguished Alumni Award Edinboro State University, PA

March 1985 Raymond W. Sarber Fellowship Award American Society for Microbiology

**OTHER PROFESSIONAL ACTIVITIES:**

Nov. 1999-Oct. 2003 Member, National Advisory Allergy and Infectious Diseases Council of the National Institutes of Health

July 1999 Part of DHHS BTEP TB Team to Russia

1990 - Present Ad hoc reviewer for Science, Nature, PNAS (USA), J. Bacteriol., Molec. Microbiol., J. Clin. Microbiol., Antimicrobial Agent and Chemo., Gene, and J. Gen. Microbiol.

1990 - 1993 Ad hoc reviewer for RFAs for "Opportunistic Infections in

AIDS Patients", Bacterial and Mycology Infections Study

Section (BM1), and Food and Drug Administration's

Program on Mycobacterial Research

**Publications**

1. **Jain, P., Hsu, T., Arai, M., Biermann, K. E., Thaler, D. S., Nguyen, A., Gonzalez, P., Ratner, H., Kriakov, J. Chen, B., Larsen, M. H., Jacobs Jr, W. R., Jr.** (2013) Specialized Transduction Designed for Precise High throughput Deletions in *Mycobacterium tuberculosis.* *PloS Genet* (submitted).
2. **Kozakiewicz, L., Y. Chen, J. Xu, Y. Wang, K. Dunussi-Joannopoulos, Q. Ou, J. L. Flynn, S. A. Porcelli, W. R. Jacobs, Jr., and J. Chan.** (2013). B Cells Regulate Neutrophilia during *Mycobacterium tuberculosis* Infection and BCG Vaccination by Modulating the Interleukin-17 Response. *PLoS Pathog* **9** (7)**:**e1003472.
3. **Wang,F., Sambandan, D., Halder, R., Wang, J., Batt, S., Weinrick, B.C., Ahmad, I., Yang, P., Zhang, Y., Kim, J.,Hassani, M., Huszar, S., Trefzer, C., Ma, Z., Kaneko, T., Mdluli, K.E., Franzblau, S.c Chatterjee, A., Johnsson, K., Mikusova, K., Besra, G., Fütterer, K., Jacobs,W.R., Jr. Schultz, P.G.** (2013) Identification of a Small Molecule with Activity against Drug-resistant and Persistent Tuberculosis. *PNAS* (in press).
4. **Wilson, R., P. Kumar, V. Parashar, C. Vilcheze, R. Veyron-Churlet, J. S. Freundlich, S. W. Barnes, J. R. Walker, M. J. Szymonifka, E. Marchiano, S. Shenai, R. Colangeli, W. R. Jacobs, Jr., M. B. Neiditch, L. Kremer, and D. Alland.** (2013). Antituberculosis thiophenes define a requirement for Pks13 in mycolic acid biosynthesis. *Nat Chem Biol.*9(8) 499-506.
5. **Vilchèze, C., Hartman, T., Weinrick, B., and Jacobs, W.R.** (2013). *Mycobacterium tuberculosis* is extraordinarily sensitive to killing by a vitamin C-induced Fenton reaction. *Nat. Commun* 4:1881. (PMCID in process).
6. **Sambandan, D., Dao, D.N., Weinrick, B.C., Vilcheze, C., Grucha, S.S., Ojha, A., Kremer, L., Besra, G.S., Hatfull, G.F., Jacobs, W.R.** (2013) Keto-Mycolic acid-dependent pellicle formation confers tolerance to drug-sensitive *Mycobacterium tuberculosis. Mbio*. 4(3). PMCID: PMC3663190.
7. **Ly, D., Kasmar, A.G., Cheng, T., DeJong, A., Huang, S., Roy, S., Bhatt, A., vanSummeren, R.R., Altman, J.D., Jacobs, W.R., Adams, E.J., Minnaard, A. J., Porcelli, S.A., Moody, D.B.** (2013) CD1c tetramers and sicovery of *M. tuberculosis* phosphomycoketides reveal cellular antigen processing for the human CD1c system. *J Exp Med* **210** (4)**:**729-41. PMCID: PMC3620358.
8. **Miallau, L., P. Jain, M. A. Arbing, D. Cascio, T. Phan, C. J. Ahn, S. Chan, I. Chernishof, M. Maxson, J. Chiang, W. R. Jacobs, Jr., and D. S. Eisenberg.** (2013). Comparative proteomics identifies the cell-associated lethality of *M. tuberculosis* RelBE-like toxin-antitoxin complexes. *Structure* **21** (4)**:**627-37. (PMCID in process).
9. **Chege, G.K., Burgers, W.A., Stutz, H., Meyers, A., Chapman, R., Kiravu, A., Bunjun, R., Shephard, E.G., Jacobs, W.R., Rybicki, E., Williamson, A.** (2013)Robust immunity to a auxotrophic BCG-VLP prime-boost HIV vaccine candidate in a non-human primate model. *J Virol* **87** (9)**:**5151-60. PMCID: PMC3624307.
10. **Anderson, J. W., D. Sarantakis, J. Terpinski, T. R. Santha Kumar, H. C. Tsai, M. Kuo, A. L. Ager, W. R. Jacobs, Jr., G. A. Schiehser, S. Ekins, J. C. Sacchettini, D. P. Jacobus, D. A. Fidock, and J. S. Freundlich.** (2013). Novel diaryl ureas with efficacy in a mouse model of malaria. *Bioorg Med Chem Lett* **23:**1022-5.(PMCID PMC in process).
11. **Lim, L. E., C. Vilcheze, C. Ng, W. R. Jacobs, Jr., S. Ramon-Garcia, and C. J. Thompson.** (2013). Anthelmintic Avermectins Kill *Mycobacterium tuberculosis*, Including Multidrug-Resistant Clinical Strains. *Antimicrob Agents Chemother* **57:**1040-6. PMCID PMC 3553693.
12. **Cheshenko, N., Trepanier,J.B., Stefanidou, M., Buckley, N., Gonzalez, P., Jacobs,W., Herold, B.C**. (2013) HSV Activates Akt to Trigger Calcium Release and Promote viral entry: Novel candidate target for treatment and suppression. *FASEB J.* 27(7):2584-99).PMCID PMC( in process).
13. **Wong, K-W., Jacobs, W.R. Jr.** (2013) *Mycobacterium tuberculosis* exploits human interferon-γ to stimulate macrophage extracellular trap formation and necrosis. *J Infect Dis* **208** (1)**:**109-19 PMCID PMC3666134.
14. **Sayahi, H., K. M. Pugliese, O. Zimhony, W. R. Jacobs, Jr., A. Shekhtman, and J. T. Welch.** (2012). Analogs of the Antituberculous Agent Pyrazinamide Are Competitive Inhibitors of NADPH Binding to *M. tuberculosis* Fatty Acid Synthase I. *Chem Biodivers* **9:**2582-96. PMCID PMC.
15. **Vilcheze, C., Jacobs, W.R. Jr.** (2012) The combination of sulfamethoxazole, trimethoprim, and isoniazid or rifampin is bactericidal and prevents the emergence of drug resistance in *Mycobacterium tuberculosis*. *Antimicrob Agents Chemother* . **56**: (10) 5142-8. PMCID PMC 3457372.
16. **Taylor, N., F. Bahunde, A. Thompson, J. S. Yu, W. R. Jacobs, N. L. Letvin, B. F. Haynes, and S. Lee.** (2012). Enhanced priming of adaptive immunity by high secretor mutants of Mycobacterium smegmatis. *Clin Vaccine Immunol* PMCID PMC 3428392.
17. **Jensen, K., U. D. Ranganathan, K. K. Van Rompay, D. R. Canfield, I. Khan, R. Ravindran, P. A. Luciw, W. R. Jacobs, Jr., G. Fennelly, M. Larsen, and K. Abel.** (2012). A recombinant attenuated *Mycobacterium tuberculosis* vaccine strain is safe in immunosuppressed SIV-infected infant macaques. *Clin Vaccine Immunol* PMCID PMC 3416096.
18. **Kolibab, K., S. C. Derrick, W. R. Jacobs, and S. L. Morris.** (2012). Characterization of an intracellular ATP assay for evaluating the viability of live attenuated mycobacterial vaccine preparations. *J Microbiol Methods* **90:**245-9. PMCID PMC.
19. **Yamada, H., A. Bhatt, R. Danev, N. Fujiwara, S. Maeda, S. Mitarai, K. Chikamatsu, A. Aono, K. Nitta, W. R. Jacobs, Jr., and K. Nagayama.** (2012). Non-acid-fastness in Mycobacteriumtuberculosis DeltakasB mutant correlates with the cell envelope electron density. *Tuberculosis (Edinb)* PMCID PMC.
20. **Derrick, S. C., D. Dao, A. Yang, K. Kolibab, W. R. Jacobs, and S. L. Morris.** (2012). Formulation of a mmaA4 Gene Deletion Mutant of *Mycobacterium bovis* BCG in Cationic Liposomes Significantly Enhances Protection against Tuberculosis. *PLoS One* **7:**e32959. PMCID PMC 3307709.
21. **Goldberg, D.E., Siliciano,R.F., and Jacobs, W.R.Jr.** (2012). Outwitting Evolution: Fighting Drug-Resistant TB, Malaria, and HIV. *Cell* **148:**1271-83. PMCID PMC 3322542.
22. **McShane, H., W. R. Jacobs, P. E. Fine, S. G. Reed, D. N. McMurray, M. Behr, A. Williams, and I. M. Orme.** (2012). BCG: myths, realities, and the need for alternative vaccine strategies. *Tuberculosis (Edinb)* **92** (3)**:**283-8.
23. **Jain, P., Hartman, T., Eisenberg, N., O'Donnell, M.R., Kriakov, J., Govender, K., Makume, M., Thaler, D., Hatfull, G.F., Sturm, A.W., Larsen, M.H., Moodley, P., Jacobs,W.R. Jr.** (2012) ф2GFP10: A high-intensity fluorophage enables detection and rapid drug susceptibility testing of *Mycobacterium tuberculosis* directly from sputum samples. *J Clin Microbiol* **50:**1362-9. PMCID PMC 3318544.
24. **Venkataswamy, M. M., M. F. Goldberg, A. Baena, J. Chan, W. R. Jacobs, Jr., and S. A. Porcelli.** (2012). In vitro culture medium influences the vaccine efficacy of Mycobacterium bovis BCG. *Vaccine* **30:**1038-49. PMCID PMC 3269512.
25. **Chapman, R.**, **Shepard, E., Stutz, H., Douglass, N., Sambandamurthy, V., Garcia, I., Ryffel, B., Jacobs, W., Williamson, A.** (2012) Priming with a Recombinant Pathtothenate Auxotroph of *Mycobacterium bovis* BCG and Boosting with MVA Elicits HIV-1 Gag Specific CD8+ TCells. *PLoS One,***7**:3 e32769.
26. **Bourai, N., W. R. Jacobs, Jr., and S. Narayanan.** (2012). Deletion and overexpression studies on DacB2, a putative low molecular mass penicillin binding protein from *Mycobacterium tuberculosis* H(37)Rv. *Microb Pathog* **52:**109-16. PMCID PMC.
27. **Yu, J. S., J. Whitesides, S. H. Lee, N. Taylor, W. R. Jacobs, Jr., N. L. Letvin, and B. F. Haynes.** (2011). Flow cytometry sorting of recombinant mycobacterial species yields bacterial clones with enhanced insert expression. *Clin Vaccine Immunol* **18** (1)**:**43-9.PMCID PMC3019783.
28. **Hinchey, J., B. Y. Jeon, H. Alley, B. Chen, M. Goldberg, S. Derrick, S. Morris, W. R. Jacobs, Jr., S. A. Porcelli, and S. Lee.** (2011). Lysine auxotrophy combined with deletion of the SecA2 gene results in a safe and highly immunogenic candidate live attenuated vaccine for tuberculosis. *PLoS One* **6** (1)**:**e15857.PMCID PMC3018466
29. **Rondon, L., M. Piuri, W. R. Jacobs, Jr., J. de Waard, G. F. Hatfull, and H. Takiff.** (2011). Evaluation of Fluoromycobacteriophages for detecting drug resistance in *Mycobacterium tuberculosis*. *J Clin Microbiol*.49:1838-42. PMCID PMC 3122682.
30. **Prados-Rosales, R., A. Baena, L. R. Martinez, J. Luque-Garcia, R. Kalscheuer, U. Veeraraghavan, C. Camara, J. D. Nosanchuk, G. S. Besra, B. Chen, J. Jimenez, A. Glatman-Freedman, W. R. Jacobs, Jr., S. A. Porcelli, and A. Casadevall.** (2011). Mycobacteria release active membrane vesicles that modulate immune responses in a TLR2-dependent manner in mice. *J Clin Invest*. PMCID PMC3069770.
31. **Xu, X., Vilcheze, C., Av-Gay, Y., Gomez-Velasco, A., and Jacobs, W.R. Jr.,** (2011) Precise Null Deletion Mutations of the Mycothiol Synthesis Genes Reveal Their Roll in Isoniazid and Ethionamide Resistance in *Mycobacterium smegmatis*. *Antimicrob Agents Chemother*.**55** (7)**:**3133-9. PMCID PMC 3122461.
32. **Sweeney, K. A., D. N. Dao, M. F. Goldberg, T. Hsu, M. M. Venkataswamy, M. Henao-Tamayo, D. Ordway, R. S. Sellers, P. Jain, B. Chen, M. Chen, J. Kim, R. Lukose, J. Chan, I. M. Orme, S. A. Porcelli, and W. R. Jacobs, Jr.** (2011). A recombinant Mycobacterium smegmatis induces potent bactericidal immunity against *Mycobacterium tuberculosis*. *Nat Med* **17:**1261-8. PMCID PMC 3250071.
33. **Wong,K.W., and Jacobs,W.R.** (2011) Critical role for NLRP3 in necrotic death triggered by *M. tuberculosis*. *Cell Microbio*. **13** (9)**:**1371-84. PMCID PMC 3257557.
34. **Vilchèze, C., Baughn, A.D., Tufariello, J., Leung,L., Kuo, M., Basler, C., Alland, D., Sacchettini, J.C., Freunlich, J.S., and Jacobs, W.R.Jr.** (2011) Novel inhibitors of InhA efficiently kill *Mycobacterium tuberculosis* under aerobic and anaerobic conditions. *Antimicrob Agents Chemother.* **55** (8)**:**3889-98. PMCID PMC 3147652.
35. **Sayahi, H., O. Zimhony, W. R. Jacobs, Jr., A. Shekhtman, and J. T. Welch.** (2011). Pyrazinamide, but not pyrazinoic acid, is a competitive inhibitor of NADPH binding to *Mycobacterium tuberculosis* fatty acid synthase I. *Bioorg Med Chem Lett*. **21:**4804-7. PMCID PMC.
36. **Pruksakorn, P., M. Arai, L. Liu, P. Moodley, W. R. Jacobs, Jr., and M. Kobayashi.** (2011). Action-Mechanism of Trichoderin A, an Anti-dormant Mycobacterial Aminolipopeptide from Marine Sponge-Derived Trichoderma sp. *Biol Pharm Bull* **34** (8)**:**1287-90. PMCID PMC (in process).
37. **Pope, W. H., C. M. Ferreira, D. Jacobs-Sera, R. C. Benjamin, A. J. Davis, R. J. DeJong, S. C. R. Elgin, F. R. Guilfoile, M. H. Forsyth, A. D. Harris, S. E. Harvey, L. E. Hughes, P. M. Hynes, A. S. Jackson, M. D. Jalal, E. A. MacMurray, C. M. Manley, M. J. McDonough, J. L. Mosier, L. J. Osterbann, H. S. Rabinowitz, C. N. Rhyan, D. A. Russell, M. S. Saha, C. D. Shaffer, S. E. Simon, E. F. Sims, I. G. Tovar, E. G. Weisser, J. T. Wertz, K. A. Weston-Hafer, K. E. Williamson, B. Zhang, S. G. Cresawn, P. Jain, M. Piuri, W. R. Jacobs, Jr., R. W. Hendrix, and G. F. Hatfull.** (2011). Cluster K Mycobacteriophages: Insights into the Evolutionary Origins of Mycobacteriophage TM4. *PLoS One* **6:**e26750. PMCID PMC 3203893.
38. **Chen, B., Weisbrod, T.R., Hsu, T., Sambandamurthy, V., Viera-Cruz, D., Chibbaro, A., Ghidoni, D., Kile, T., Barkley, W.E., Vilcheze, C., Colon-Berezin, C., Thaler, D., Larsen, M.H., Sturm, A.W., Jacobs. W.R. Jr.(**2011) Einstein Contained Aerosol Pulmonizer (ECAP): Inproved Biosafety for Multi-Drug Resistant (MDR) and Extensively Drug Resistant (XDR) *Mycobacterium tuberculosis* Aerosol Infection Studies. *Applied Biosafety* **16** (3):134-138. PMCID PMC.
39. **Parra, M., S. C. Derrick, A. Yang, J. Tian, K. Kolibab, M. Oakley, L. P. Perera, W. R. Jacobs, S. Kumar, and S. L. Morris.** (2011). Malaria Infections Do Not Compromise Vaccine-Induced Immunity against Tuberculosis in Mice. *PLoS One* **6:**e28164. PMCID PMC. 3242757.
40. **Jain, P., D. S. Thaler, M. Maiga, G. S. Timmins, W. R. Bishai, G. F. Hatfull, M. H. Larsen, and W. R. Jacobs.** (2011). Reporter phage and breath tests: emerging phenotypic assays for diagnosing active tuberculosis, antibiotic resistance, and treatment efficacy. *J Infect Dis* **204 Suppl 4:**S1142-50. PMCID PMC 3247800.
41. **Vilcheze, C., Y. Av-Gay, S. W. Barnes, M. H. Larsen, J. R. Walker, R. J. Glynne, and W. R. Jacobs, Jr.** (2011). Coresistance to isoniazid and ethionamide maps to mycothiol biosynthetic genes in Mycobacterium bovis. *Antimicrob Agents Chemother* **55:**4422-3. PMCID PMC. 3165297.
42. **Vilcheze, C., B. Weinrick, K. W. Wong, B. Chen, and W. R. Jacobs, Jr.** (2010). NAD+ auxotrophy is bacteriocidal for the tubercle bacilli. *Mol Microbiol* **76:**365-77. PMCID PMC2945688.
43. **Kalscheuer, R., Syson, K., Veeraraghavan, U., Weinrick, B., Biermann, K.E., Liu, Z., Sacchettini, J.C., Besra, G., Bornemann, S., Jacobs, W.R., Jr.** (2010) Self-poisoning of *Mycobacterium tuberculosis* by inhibition of GlgE reveals a new class of drug target. *Nature Chem Bio.* **6(5):**376-84. PMCID PMC(in process).
44. **Larsen, M.H., Jacobs, W.R., Porcelli, S.A, Kim, J., Ranganathan, U.D., Fennelly G. J.** (2010) Balancing safety and immunogenicity in live-attenuated mycobacterial vaccines for use in humans at risk for HIV: response to misleading comments in Ranganathan et al. “recombinant pro-apoptotic *Mycobacterium tuberculosis* generates CD8+ T Cell responses against human immunodeficiency virus type 1 Env and *M. tuberculosis* in neonatal mice:. *Vaccine*. 28**(21):** 3633-3634. PMCID PMC (in process).
45. **Kinhikar,A.G., Verma, I., Chandra, D., Singh, K.K., Weldingh, K., Andersen, P., Hsu, T., Jacobs, W.R., Jr., Laal, S.** (2010) Potential role for ESAT6 in dissemination of *M. tuberculosis* via human lung epithelial cells. *Mol. Microbiol*. **(75)**1:92-106. PMCID PMC 2846543.
46. **Ioerger, T. R., Y. Feng, K. Ganesula, X. Chen, K. M. Dobos, S. Fortune, W. R. Jacobs, Jr., V. Mizrahi, T. Parish, E. Rubin, C. Sassetti, and J. C. Sacchettini.** (2010). Variation among genome sequences of H37Rv strains of *Mycobacterium tuberculosis* from multiple laboratories. *J Bacteriol* **192:**3645-53. PMCID PMC2897344.
47. **Pruksakorn, P., M. Arai, N. Kotoku, C. Vilcheze, A. D. Baughn, P. Moodley, W. R. Jacobs, Jr., and M. Kobayashi.** (2010). Trichoderins, novel aminolipopeptides from a marine sponge-derived Trichoderma sp., are active against dormant mycobacteria. *Bioorg Med Chem Lett* **20:**3658-63. PMCID PMC.
48. **Wang, F., P. Jain, G. Gulten, Z. Liu, Y. Feng, K. Ganesula, A. S. Motiwala, T. R. Ioerger, D. Alland, C. Vilcheze, W. R. Jacobs, Jr., and J. C. Sacchettini.** (2010). *Mycobacterium tuberculosis* Dihydrofolate Reductase is Not a Target Relevant to the Anti-tubercular Activity of Isoniazid. *Antimicrob Agents Chemother* PMCID PMC2935018.
49. **Lazar-Molnar, E., B. Chen, K. A. Sweeney, E. J. Wang, W. Liu, J. Lin, S. A. Porcelli, S. C. Almo, S. G. Nathenson, and W. R. Jacobs, Jr.** (2010). Programmed death-1 (PD-1)-deficient mice are extraordinarily sensitive to tuberculosis. *Proc Natl Acad Sci U S A.* **107:**13402-7. PMCID: PMC2922129.
50. **Baughn, A. D., J. Deng, C. Vilcheze, A. Riestra, J. T. Welch, W. R. Jacobs, Jr., and O. Zimhony.** (2010). Mutually exclusive genotypes for pyrazinamide and 5-chloropyrazinamide resistance reveal a potential resistance proofing strategy. *Antimicrob Agents Chemother* PMCID PMC2981270.
51. **Koser, C. U., D. K. Summers, J. A. Archer, and W. R. Jacobs, Jr.** (2010). Role of the Dihydrofolate Reductase DfrA (Rv2763c) in Trimethoprim-Sulfamethoxazole (Co-Trimoxazole) Resistance in *Mycobacterium tuberculosis*. *Antimicrob Agents Chemother* **54:**4951-2. PMCID PMC.
52. **Kalscheuer, R., B. Weinrick, U. Veeraraghavan, G. S. Besra, and W. R. Jacobs, Jr.** (2010). Trehalose-recycling ABC transporter LpqY-SugA-SugB-SugC is essential for virulence of *Mycobacterium tuberculosis*. *Proc Natl Acad Sci U S A*.PMCID PMC3003129.
53. **Molle, V., G. Gulten, C. Vilcheze, R. Veyron-Churlet, I. Zanella-Cleon, J. C. Sacchettini, W. R. Jacobs, Jr., and L. Kremer.** (2010). Phosphorylation of InhA inhibits mycolic acid biosynthesis and growth of *Mycobacterium tuberculosis*. *Mol Microbiol* **78** (6)**:**1591-605
54. **Kalscheuer, R., and W. R. Jacobs, Jr.** (2010). The significance of GlgE as a new target for tuberculosis. *Drug News Perspect* **23** (10)**:**619-24.
55. **Lee, W.L., Gold, B., Darby, C., Brot, N., Jiang, X, de Carvalho, L.P., Wellner, D., John, G., Jacobs, W.R., Jr., Nathan, C.** (2009) *Mycobacterium tuberculosis* Expresses Methionine Sulfoxide Reductases A and B that Protect from Killing by Nitrite and Hypochlorite. *Mol Microbiol* **71**:583-593. PMCID: PMC in process.
56. **Lim, J., Derrick, S.C., Kolibab, K., Yang, A.L., Porcelli, S., Jacobs, W.R., Morris, S.L.** (2009) Early Pulmonary Cytokine and Chemokine Responses in Mice Immunized with Three Different Vaccines Against *Mycobacterium tuberculosis* Determined by PCR Array. *Clin Vaccine Immunol* **16**:122-126. PMCID: PMC2620659.
57. **Endsley, J.J., Waters, W.R., Palmer, M.V., Nonnecke, B.J., Thacker, T.C., Jacobs, W.R., Jr., Larsen, M.H., Hogg, A., Shell, E., McAlauy, M., Scherer, C.F., Coffey, T., Howard, C.J., Villareal-Ramos, B., Estes, D.M.** (2009) The Calf Model of Immunity for Development of a Vaccine Against Tuberculosis. *Vet Immunol Immunopathol* **128**(1-3):199-204. PMCID: PMC in process.
58. **Yam, K.C., D’Angelo, I., Kalscheuer, R., Zhu, H., Wang, J.X., Snieckusk, V., Ly, L.H., Converse, P. J., Jacobs, W.R., Jr., Strynadka, N., Eltis, L.D.** (2009) Studies of a ring-cleaving dioxygenase illuminate the role of cholesterol metabolism in the pathogenesis of *Mycobacterium tuberculosis*. *PLoS Pathog.* **5** (3):e1000344 [Epub]. PMCID: PMC2652662.
59. **Cayabyab, M.J., Korioth-Schmitz B., Sun, Y., Carville, A., Balachandran, H., Miura, A., Carlson, K.R., Buzby, A.P., Haynes, B.F., Jacobs, W.R., Letvin, N.L.** (2009) Recombinant *Mycobacterium bovis* BCG prime-recombinant adenovirus boost vaccination in rhesus monkeys elicits robust polyfunctional simian immunodeficiency virus-specific T-cell responses. *J Virol.* **83** (11):5505-5513 [Epub]. PMCID: PMC2681969.
60. **Waters WR, Palmer MV, Nonnecke BJ, Thacker TC, Scherer CFC, Estes DM, Hewinson RG, Vordermeier HM, Barnes SW, Federe GC, Walker JR, Glynne RJ, Hsu T, Weinrick B, Biermann K, Larsen MH, Jacobs WR, Jr.** (2009) Efficacy and immunogenicity of *Mycobacterium bovis* Δ*RD1* against aerosol *M. bovis* infection in neonatal calves.  *Vaccine* **27**:1201-1209. PMCID: PMC2750035.
61. **Freundlich, J.S., Wang, F., Vilcheze, C.,** **Gulten, G., Langley, R., Schiehser, G.A., Jacobus, D.P., Jacobs, W.R., Jr., Sacchettini, J.** (2009) Tricolosan Derivatives: Towards Potent Inhibitors of Drug-Sensitive and Drug Resistant *M. tuberculosis*. *Chem Med Chem* **4**:241-248.PMCID: PMC in process.
62. **Parra, M., Yang, A.L., Lim, J., Kolibab, K., Kerrick, S., Cadieux, N., Perera, L.P., Jacobs, W.R., Brennan, M., Morris, S.L.** (2009) The development of a Murine Mycobacterial Growth Inhibition assay for Evaluating Vaccines Against *Mycobacterium tuberculosis*. *Clin Vaccine Immunol* **[Epub ahead of print**]. PMCID: PMC2708400.
63. **Chen, C.Y., Huang, D., Wang, R.C., Shen, L., Zeng, G., Yao, S., Shen, Y., Halliday, L., Fortman, J., McAllister, M., Estep, J., Hunt, R., Vasconcelos, D., Du, G., Porcelli, S.A., Larsen, M.H., Jacobs, W. J., Jr., Haynes, B. F., Letvin, N.L., Chen Z.W.** (2009) A critical role ofr CD8 T cells in a nonhuman primate model of tuberculosis. *PLoS Pathog.* **5** (4):e1000392 [Epub]. PMCID: PMC2663842.
64. **Cirillo,. S.L., Subbian, S., Chen, B., Weisbrod, T.R., Cirillo, J.D.** (2009) Protection of *Mycobacterium tuberculosis* from reactive oxygen species conferred by the mel2 locus impacts persistence and dissemination. *Infect Immunol* **77:** (6)2557-2567**.** PMCID: PMC2687327.
65. **Gopalaswamy, R., Narayanan, S., Chen, B., Jacobs, W.R., Av-Gay, Y.** (2009) The serine/threonine protein kinase Pknl controls the growth of *Mycobacterium tuberculosis* upon infection. *FEMS Microbiol Lett* **295** (1): 23-29. PMCID: PMC in process.
66. **Piuri, M., Jacobs, W.R. Jr., Hatfull, G. F.** (2009) Fluoromycobactericphages for repid, specific, and sensitive antibiotic susceptiblility testing of *Mycobacterium tuberculosis*. *PLoS ONE* **4** (3) e-4870. PMCID: PMC2654538.
67. **Capinos Scherer, C.F., Endsley, J.J., deAguiar, J.B., Jacobs, W.R., Jr., Larsen, M.H., Palmer, M.V., Nonnecke, B.J., Waters, R.W., Estes, M.D.** (2009) Evaluation of Granulysin and Perforin as Candidate Biomarkers for Protection Following Vaccination with *Mycobacterium bovis* BCG or M. bovis ΔRD1. *Transbound Emerg Dis* **56:** (6-7) 228-39. PMCID: PMC in process.
68. **Larsen, M., Biermann, K., Chen, B., Hsu, T., Sambandamurthy, V., Lackner, a., Ay, P.P., Didier, P. Huang, D., Shao, L., Huiyong, W., Letvin, N., Frothingham, R., Haynes, B., Chen, Z., Jacobs, W.R., Jr.** (2009) Efficacy and Safety of Live Attenuated Persistent and Rapidly Cleared *Mycobacterium tuberculosis* Vaccine Candidates in Non-Human Primates. *Vaccine* **34**:4709-4717 [Epub]. PMCID: PMC in process.
69. **Colangeli, R., Haq, A., Arcus, V.L., Summers, E., Magliozzo, R.S., McBride, A., Mitra, A.K., Radjainia, M., Khajo, a., Jacobs, W.R., Jr., Salgame, P., Alland, D.** (2009) The Multifunctional Histone-Like Protein Lsr2 Protects Mycobacteria Against Reactive Oxygen Intermediates. *PNAS* [early edition]. PMCID: PMC2657463.
70. **Zimmerman, D.M., Waters, W.R., Lyashcenko, K.P., Nonnecke, B.J., Armstrong, D.L., Jacobs, W.R., Jr., Larsen, M.H., Egan, E., Dean, G.A.** (2009) Safety and immunogenicity of *Mycobacterium tuberculosis* Δ*lysA ΔpanCD* Vaccine in Domestic Cats Infecteed with Feline Immunodeficiency Virus. *Clin Vaccine Immunol* **16:** (3)427-429 [Epub].PMCID: PMC 2650874.
71. **Chen,J., Kriakov,J., Singh,A., Jacobs,W.R., Besra,G.S., Bhatt,A.,** (2009) Defects in glycopeptidolipid biosynthesis confer phage 13 resistance in *Mycobacterium smegmatis*. *PLoS Pathog* **5** (4)**:**e1000392.
72. **Ioerger,T.R., Koo,S., No,E.G., Chen,X., Larsen,M.H., Jacobs,W.R.,Jr., Pillay, M., Sturm, A.W., Sacchettini, J.C.** (2009) Genome analysis of multi-and extensively-drug-resisant tuberculosis from KwaZulu-Natal, South Africa. *PLoS One* **4:(11)**e778. PMCID:PMC2767505.
73. **Baughn, A., Garforth, S., Vilcheze, C., Jacobs, W.R.,Jr.** (2009)An Anaerobic-Type α-Ketoglutarate Ferredoxin Oxidoreductase Completes the Oxidative Tricarboxylic Acid Cycle of *Mycobacterium tuberculosis. PloS Path* **5:(11)**e1000662. PMCID PMC2773412.
74. **Waters, W.R., Palmer, M.V., Nonnecke, B.J., Thacker, T.C., Estes, D.M., Larsen, M.H., Jacobs, W.R., Jr., Andersen, P., McNair, Minion, F.C., Lyashchenko, K.P., Hewinson, R.G., Vordermeier, H.M., Sacco, R.E.,** (2009) Signal regularoty protein alpha (SIRPalpha) cells in the adaptive response to ESAT -6 CFP-10 protein of tuberculous mycobacteria. *PLos One* **4:(7)** e6414. PMCID: PMC2714177.
75. **Venkataswamy, M.M., Beana, A., Goldberg, M.F., Bricard, G., Im, J.S., Chan, J., Reddington, F., Besra, G.S., Jacobs, W.R., Jr., Porcelli, S.A.** (2009) Incorporation of NKT cell-activating glycolipids enhances immunogenicity and vaccine efficancy of *Mycobacterium bovis* bacillus CAlmette-Guerin. *J Immunol* **183:** (3) 1644-56. PMCID: PMC2719834.
76. **Banaei, N., Kincaid, E.Z., Lin, S.Y., Desmond, E., Jacobs, W.R.,Jr., Ernst, J.D.** (2009) Lipoprotein processing is essential for resistance of *Mycobacterium tuberculosis* to malachite green. *Antimicrob Agents Chemother (Epub).* PMCID: PMC 2737861.
77. **Kinhikar,A.G., Verma, I., Chandra, D., Singh, K.K., Weldingh, K., Andersen, P., Hsu, T., Jacobs, W.R., Jr., Laal, S.** (2010) Potential role for ESAT6 in dissemination of *M. tuberculosis* via human lung epithelial cells. *Mol. Microbiol*. **(75)**1:92-106. PMCID PMC 2846543.
78. **Ranganathan, U.D., Larsen,M.H., Kim, J., Porcelli, S.A., Jacobs, W.R.,Jr., Fennelly, G.J.** (2009) recombinant pro-apoptotic *Mycobacterium tuberculosis* generates CD8(+) T cell responses against human immunodeficiency virus type 1 Env and *M. tuberculosis* in neonatal mice. *Vaccine*. **10;28**(1):152-161. PMCID PMC 2804991.
79. **Capyk, J.K., Kalscheuer,R., Stewart,G.R., Liu,J., Kwon,H., Zhao,R., Okamoto,S., Jacobs,W.R.,Jr., Eltis,L.D., Mohn,W.W**. (2009) Mycobacterial cytochrome P450 125 (Cyp125) catalyzes the terminal hydroxylation of C27-steroids. *J. Biol. Chem*. **18:**284(51):35534-42. PMCID PMC2790983.
80. **Nascimento, I.P., Dias,W.O., Quintilio,W., Hsu,T., Jacobs, W.R.,Jr., Leite, L.C.** (2009) Construction of an unmarked recombinant BCG expressing a pertussis antigen by auxotrophic complementation: Protection against Bordetella pertussis challenge in neonates. *Vaccine* **[epub ahead of print].**
81. **Gratraud, P., Huws, E., Falkard, B., Adjalley, S., Fidock, D.A., Jacobs, W.r., Jr., Baird, M.S., Vial, H., Kremer, L.** (2009) Oleic Acid Biosynthesis in *Plasmodium falciparum*: characterization of the Stearoyl-CoA Desaturase and Validation as a Therapeutic Target. *PLoS One.* (4) 9:e6889.PMCID PMC 2731242.
82. **Qiu, L., Huang, D., Chen, C.Y., Wang, R., Shen, L., Shen, Y., Hunt, R., Estep, J., Haynes, B.F., Jacobs, W.R., Jr., Letvin, N., Du, G., Chen, Z.** (2008) Severe Tuberculosis Induces Unbalanced Up-Regulation of Gene Networks and Overexpression of IL-22, MIP-1alpha, CCL27, IP-10, CCR4, CCR5, CXCR3, PD1, PDL2, IL-3 IFN-beta, TIM1, and TLR2 But Low Antigen-Specific Cellular Responses. *J. Infec Dis* **198**:1514-1519. PMCID: PMC 2884371
83. **Vilcheze, C., Av-Gay, Y., Attarian, R., Liu, Z., Hazbon, M.H., Colangeli, R., Chen, B., Liu, W., Alland, D., Sacchettini, J.C., Jacobs, Jr., W.R.** (2008) Mycothiol biosynthesis is essential for ethionamide susceptibility in *Mycobacterium tuberculosis*. *Mol Microbiol*. **69**:1316-29. PMCID: PMC2628429.
84. **Arai, M., Sobou, M., Vilcheze, C., Baughn, A. Hashizume, H., Pruksakorn, P., Ishida, S.,Matsumoto, Ma., Jacobs.W.R.Jr.,Kobayashi, M**. (2008) Halicyclamine A, a marine spongean alkaloid as a lead for anti-tuberculosis agent. *Bioorg. Med. Chem.* **16**:6732-6. PMCID: PMC in process.
85. [**Kumar, V**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Kumar%20V%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)**.,** [**Loganathan, P**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Loganathan%20P%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)**.,** [**Sivaramakrishnan, G**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Sivaramakrishnan%20G%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)**.,** [**Kriakov, J**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Kriakov%20J%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)**.,** [**Dusthakeer, A**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Dusthakeer%20A%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)**.,** [**Subramanyam, B**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Subramanyam%20B%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)**.,** [**Chan, J**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Chan%20J%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)**.,** [**Jacobs, W.R., Jr**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Jacobs%20WR%20Jr%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)**.,** [**Paranji, Rama, N**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Paranji%20Rama%20N%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus)**.** (2008)Characterization of temperate phage Che12 and construction of a new tool for diagnosis of tuberculosis. [*Tuberculosis*](javascript:AL_get(this,%20'jour',%20'Tuberculosis%20(Edinb).');) **[Epub ahead of print].** PMCID: PMC 2678029.
86. **Mohamemohaideen, N.N., Palaninathan, S.K., Morin, P.M., Williams, B.J., Braunstein, M., Tichy, S.E., Locker, J., Russell, D.H., Jacobs, W.R., Jr., Sacchettini, J.C.** (2008) Structure and Function of the Virulence-Associated High-Temperature Requirement A of *Mycobacterium tuberculosis*. *Biochemistry* **47** (23)**:**6092-102 PMCID: PMC in process.
87. **Jayakumar, D., Jacobs, W.R., Jr., Narayanan, S.** (2008) Protein Kinase E. of *Mycobacterium tuberculosis* Has a Role in the Nitric Oxide Stress Response and Apoptosis in a Human Macrophage Model of Infection. *Cell Microbiol*. **10**:365-74. PMCID: PMC in process.
88. **Ojha, A.K., Baughn, A.D., Sambandan, D., Hsu, T., Trivellil, X., Guerardel, Y., Alahari, A., Kremer, L., Jacobs, W.R., Jr., Hatfull, G.F.** (2008) Growth of *Mycobacterium tuberculosis* biofilms containing free mycolic acids and harboring drug tolerant bacteria. *Mol. Microbiol.* **69**:164-74. PMCID: PMC2615189.
89. **Dao, D. N., K. Lawrence, T. Hsu, I. P. Nascimento, D. Roshevsky, S. S. Gurcha, G. S. Besra, J. Chan, S. A. Porcelli, and W. R. Jacobs** (2008) Mycolic acid modification by the mmaA4 gene of *M. tuberculosis* modulates IL-12 production. *PLoS Pathog* **4:**e1000081.pp.1-14. PMCID: PMC2390761.
90. **Mishra, A.K., Alderwich, L.J., Rittmann, D., Wang, C., Bhatt, A., Jacobs, W.R.,Jr., Takayama, K., Eggeling, L., Besra, G.S.,** (2008) Identification of a novel alpha (1-->6) mannopyranosyltransferase MptB from Corynebacterium glutamicum by deletion of a conserved gene, NCgl1505, affords a lipomannan- and lipoarabinomannan-deficient mutant. *Mol Microbiol* **68** (6): 1595-613. PMCID: PMC2440535.
91. **Im, J.S., Kang, T.J., Lee, S.B., Kim, C.H., Lee, S.H., Venkataswamy, M.M., Serfass, E.R., Chen, B., Illarionov, P.S., Besra, G.S., Jacobs, W.R., Jr., Chae, G.T., Porcelli, S.A.** (2008) Alteration of the Relative Levels of iNKT Cell Subsets is Associated with Chronic Mycobacterial Infections. *Clin. Immunol* **127**:214-224.PMCID: PMC2413133.
92. **Huang, D., Shen, Y., Qiu, L., Chen, C.Y., Shen, L., Estep, J., Hunt, R., Vasconcelos, D., Du, G., Qye, P., Lackner, A.A., Larsen, M.H., Jacobs, W.R., Haynes, B.F., Letvin, N.L., Chen, Z.W.** (2008) Immune distribution and Localization of Phosphoantigen-Specific Vγ2VΔ2 T Cells in Lymphoid and Nonlymphoid Tissues in *Mycobacterium tuberculosis* Infection. *Infect Immun* **76**:426-436. PMCID: PMC2223676.
93. **Gopalaswamy, R., Narayanan, S., Jacobs, W.R., Jr., Av-Gay, Y.** (2008) *Mycobacterium smegmatis* Biofilm Formation and Sliding Motility are Affected by the Serine-Threonine Protein Kinase PknF. *FEMS Microbiol.* **278**:121-127.PMCID: PMC in process.
94. **Banaiee, N., January, V., Barthus, C., Lambrick, M., RoDiti, D., Behr, M.A., Jacobs, W.R., Jr., Steyn, L.M.** (2008) Evaluation of a Semi-Automated Reporter Phage Assay for Susceptibility Testing of *Mycobacterium tuberculosis* Isolates in South Africa. *Tuberculosis* **88**:64-68. PMCID: PMCin process.
95. **Reddy, M.C.M., Gokulan, K., Jacobs, W.R., Jr., Ioerger, T.R., Sacchettini, J.C.** (2008) Crystal structure of *Mycobacterium tuberculosis* LrpA, a Leucine-Responsive Global Regulator Associated with Starvation Response. *Protein Science* **17**:159-170. PMCID: PMC2144582.
96. **Bueno, S.M., Gonzalez, P.A., Cautivo, K.M., Mora, J.E., Leiva, E.D., Tobar, H.E., Fennelly, G.J., Eugenin, E.A., Jacobs, W.R., Jr., Riedel, C.A., Kalergis, A.M.** (2008) Protective T Cell Immunity Against Respiratory Syncytial Virus is Efficiently Induced by Recombinant BCG. *PNAS* **105**:20822-20827. PMCID: PMC2634951.
97. **Yu, M., Kumar, T.R., Nkrumah, L.J., Coppi, A., Retzlaff, s., Li, C.D., Kelly, B.J., Moura, P.A., Lakshmanan, Freundlich, J.s., Valderramos, J.C., Vilcheze, C., Siedner, M., Tsai, J.H., Falkard, B., Sidhu, A.B., Purcell, L.A., Gradtraud, P, Kremer, L, Waters, A.P., Schiehser, G., Jacobus, D.P., Janse, C.J., Ager, A., Jacobs, W.R., Jr., Sacchettini, J.C., Heussler, V., Sinnis, Pl, Fidock, D.A.** (2008) The Fatty Acid Biosynthesis Enzyme FabI Plays a Key Role in the Development of Liver-Stage Malarial Parasites. *Cell Host Microbe* **4**:567-578. PMCID: PMC2646117.
98. **Bhatt, K., S. S. Gurcha, A. Bhatt, G. S. Besra, and J. Jacobs, W.R.** (2007) Two Polyketide Synthase-Associated Acyl Transferases are Required for Sulfolipid Biosynthesis in *Mycobacterium tuberculosis*. *Microbiol.* **153**:513-520. PMCID: PMC in process.
99. **Waters, W.R., Palmer, M.V., Nonnecke, B.J., Thacker, T.C., Scherer, C.F., Estes, D.M., Jacobs, W.R., Jr., Glatman-Freeman, A., Larsen, M.H.** (2007) Failure of a *Mycobacterium tuberculosis* ΔRD1 ΔpanCD Double Deletion Mutant in a Neonatal Calf Aerosol *M. bovis* Challenge Model: Comparisons to Responses Elicited by *M. bovis* bacilli Calmette Guerin. *Vaccine* **25**:7832-7840. PMCID: PMC in process.
100. **Banaiee, N., Jacobs, W.R., Jr., Ernst, J.** (2007) LspA-Independent Action of Globomycin on *Mycobacterium tuberculosis. J. Antimicrob. Chemother.* **60**:414-416.PMCID: PMC in process.
101. **Al-Sayyed, B., Piperdi, S., Yuan, X., Li, A., Besra, G.S., Jacobs, W.R., Jr., Casadevall, A., Glatman-Freeman, A.** (2007) Monoclonal Antibodies to *Mycobacterium tuberculosis* CDC 1551 Reveal Subcellular Localization of MPT51. *Tuberculosis* **87**:489-97. PMCID: PMC2475595.
102. **Velmurugan, K., Chen, B., Miller, J.L., Azogue, S., Gurses, S., Hsu, T., Glickman, M., Jacobs, W.R., Porcelli, S.A., Briken, V.** (2007) *Mycobacterium tuberculosis* nuoG Is A Virulence Gene That Inhibits Apoptosis of Infected Host Cells. *PLoS Pathog.* **3**:e110 **[Epub ahead of print]** PMCID: PMC1924871.
103. **Zimhony, O., Vilcheze, C., Arai, M., Welch, J., Jacobs, W., Jr.** (2007) Pyrazinoic Acid and its *n*-Propyl Ester Inhibit Fatty Acid Synthase I in Replicating Tubercle Bacilli. *Antimicrobiol. Agents Chemother.* **51**:752-754. PMCID: PMC1797748.
104. **Ngo, S.C., Zimhony, O., Chung, W.J., Sayahi, H., Jacobs, W., Jr. and Welch, J.T.** (2007) Inhibition of Isolated *Mycobacterium tuberculosis* Fatty Acid Synthase I by Pyrazinamide Analogs. *Antimicrobiol. Agents Chem.* **51**:2430-2435.PMCID: PMC1913273.
105. **Hinchey, J., Lee, S., Jeon, B.-Y., Basaraba, R.J., Venkataswamy, M.M., Chen, B., Chan, J., Braunstein, M., Orme, I.M., Derrick, S.C., Morris, S.L., Jacobs, Jr., W.R. and Porcelli, S.A.** (2007) Enhanced Priming of Adaptive Immunity by A Proapoptotic Mutant of *Mycobacterium tuberculosis*. *J Clin Invest.* **117**:2279-2288. PMCID: PMC1934588.
106. **Bhatt, A., Molle, V., Besra, G.S., Jacobs, W.R., Jr., Kremer, L.** (2007) The *Mycobacterium tuberculosis* FAS-II Condensing Enzymes: Their Role in Mycolic Acid Biosynthesis, Acid-Fastness, Pathogenesis and in Future Drug Development. *Mol. Microbiol.* **64**:1442-1454. PMCID: PMC in process.
107. **Freundlich, J.S., Wang, F., Tsai, H.C. Kuo, M., Sheih, H.M., Anderson, J.W., Nkrumah, L.J., Valderramos, J.C., Yu, M., Kumar, T.R., Valderramos, S.G., Jacobs, W.R., Schiehser, G.A., Jacobus, D.P., Fidock, D.A., Sacchettini, J.C.** (2007) X-ray Structural Analysis of *Plasmodium falciparum* Enoyl Acyl Carrier Protein Reductase as a Pathway Toward the Optimization of Triclosan Antimalarial Efficacy. *J. Biol. Chem.* **282**:25436-25444. PMCID: PMC in process.
108. **Colangeli, R., Helb, D., Vilcheze, C., Hazbon, M.H., Lee, C.G., Safi, H., Sayers, B., Sardone, I., Jones, M.B., Fleischmann, R.D., Peterson, S.N., Jacobs, W.R., Jr., Alland, D.** (2007) Transcriptional Regulation of Multi-Drug Tolerance and Antibiotic-Induced Responses by the Histone-Like Protein Lsr2 in *M. tuberculosis*. *PLoS Pathog.* **3**:e87. PMCID: PMC1894825.
109. **Pinto, R., Harrison, J.S., Hsu, T., Jacobs, W.R., Jr., Leyh, T.S.** (2007) Sulfite Reduction in Mycobacteria*.* *J. Bacteriol.* **189**:6714-6722. PMCID: PMC2045171.
110. **Mo, Y., Quanquin, N.M., Vecino, W.H., Raganathan, U.D., Tesfa, L., Boom, W., Derbyshire, G.M., Letvin, N.L., Jacobs, W.R., Jr., Fennelly, G.J.** (2007) Genetic Alteration of *Mycobacterium smegmatis* to Improve Mycobacterium-Mediated Transfer of Plasmid DNA into Mammalian Cells and DNA immunization. *Infect. Immun.* **75**:4804-4816. PMCID: PMC2044538.
111. **Glover, R. T., J. Kriakov, S. J. Garforth, and W. R. Jacobs, Jr. (** 2007) The Two-Component Regulatory System *senX3-regX3* Regulates Phosphate Dependent Gene Expression in *Mycobacteria. J Bacteriol* **189**:5495-5503. PMCID: PMC1951828.
112. **Bhatt, A., N. Fujiwara, K. Bhatt, S. Gurcha, L. Kremer, B. Chen, J. Chan, S. Porcelli, K. Kobayashi, G. Besra, and J. Jacobs, W.R.** (2007) Deletion of kasB in *Mycobacterium tuberculosis* Causes a Loss of Acid-Fastness and Subclinical Latent Tuberculosis in Immunocompetent Mice. *PNAS, USA* **104**:5157-5162. PMCID: PMC1829279.
113. **Wang, F., Langley, R., Gulten, G., Dover, L.G., Besra, G.S., Jacobs, Jr., W.R. and Sacchettini, J.C.** (2007) Mechanism of Thioamide Drug Action against Tuberculosis and Leprosy *J. Exp. Med.* **204**:73-78. PMCID: PMC2118422.
114. **Hovav, A.H., Cayabyab, M.J., Panas, M.W., Santra, S., Greenland, J., Geiben, R., Haynes, B.F., Jacobs, W.R., Jr., Letvin, N.L.** (2007) Rapid Memory CD8+ T-Lymphocyte Induction Through Priming with Recombinant *Mycobacterium smegmatis*. *J. Virol.* **81**:74-83. PMCID: PMC1797252.
115. **Derrick, S., T. Evering, V. K. Sambandamurthy, K. V. Jalapathy, T. Hsu, B. Chen, M. Chen, R. Russell, A. P. Junqueira-Kipnis, I. M. Orme, S. Porcelli, J. Jacobs, W.R., and S. L. Morris** (2007) Characterization of the Protective T Cell Response Generated in CD4 Deficient Mice By A Live Attenuated *Mycobacterium tuberculosis* Vaccine*. Immunology* **120**:192-206. PMCID: PMC2265854.
116. **Yu, J.S., Peacock, J.W., Jacobs, W.R., Jr., Frothingham, R., Letvin, N.L., Liao, H.X., Haynes, B.F.** (2007) Recombinant *Mycobacterium bovis* bacillus Calmette-Guerin elicits human immunodeficiency virus type 1 envelope-specific T lymphocytes at mucosal sites. *Clin Vaccine Immunol* **14** (7) 886-93. PMCID: PMC1951062.
117. **Yu, J. S., J. W. Peacock, S. Vanleeuwen, T. Hsu, W. R. Jacobs, Jr., M. J. Cayabyab, N. L. Letvin, R. Fronthingham, H. F. Staats, H. X. Liao, and B. F. Haynes** (2006) Generation of Mucosal Anti-Human Immunodeficiency Virus Type 1 T Cell Responses by Recombinant *Mycobacterium smegmatis*. *Clin Vaccine Immunol.* **13**:1204-1211. PMCID: PMC1656549.
118. **Lee, S., Jeon, B.-Y., Bardarov, S., Chen, M., Morris, S.L. and Jacobs, W.R., Jr.** (2006) Protection Elicited by Two Glutamine Auxotrophs of *Mycobacterium tuberculosis* and *in vivo* Growth Phenotypes of the Four Unique Glutamine Synthetase Mutants in a Murine Model. *Infec. Immun.* **74**:6491-6495. PMCID: PMC1695480.
119. **Junqueira-Kipnis, A.P., Basaraba, R.J., Gruppo, V., Palanisamy, G., Turner, O.C., Hsu, T., Jacobs, W.R., Jr., Fulton, S.A., Reba, S.M., Boom, W.H., Orme, I.M.** (2006) Mycobacteria Lacking the RD1 Region Do Not Induce Necrosis in the Lungs of Mice Lacking Interferon-γ. *Immunology* **119**:224-231.PMCID: PMC1782352.
120. **Vilchèze, C., Wang, F., Arai, M., Hazbòn, M.H., Colangeli, R., Kremer, L., Weisbrod, T.R., Alland, D., Sacchettini, J.C., Jacobs, W.R., Jr.** (2006) Transfer of a Point Mutation in *Mycobacterium tuberculosis nhA* Resolves the Target of Isoniazid. *Nat. Med.* **12**:1027-1029.PMCID: PMC in process.
121. **Nkrumah, L., Moura, P., Ghosh, P., Hatfull, G., Jacobs, W.R. Jr., Fidock, D.A.** (2006) Efficient Site-Specific Integration in *Plasmodium falciparum* Chromosomes Medicated by Mycobacteriophage BxB1 Integrase. *Nat. Meth.* **3**:615-621. PMCID: PMC in process
122. **Sambandamurthy, V.K., Derrick, S.C., Hsu, T., Chen, B., Larsen, M.H., Jalapathy, K.V., Chen, M., Kim, J., Porcelli, S.A., Chan, J., Morris, S.L., Jacobs, W.R. Jr.** (2006) *Mycobacterium tuberculosis* *ΔRD1 ΔpanCD:* A Safe and Limited Replicating Mutant Strain that Protects Immunocompetent and Immunocompromised Mice Against Experimental Tuberculosis. *Vaccine* **11**:6309-6320. PMCID: PMC in process.
123. **Perez, J., Garcia, R., Bach, H., de Waard, J.H., Jacobs, W. R., Jr., Av-Gay, Y., Bubis, J., Takiff, H.E.** (2006) *Mycobacterium tuberculosis* Transporter MmpL7 is a Potential Substrate for Kinase PknD. *Biochem. Biophy. Res. Comm.* **348**:6-12. PMCID: PMC in process.
124. **Hatfull, G.F., Pedulla, M.L., Jacobs-Sera, D., Cichon, P.M., Foley, A., Ford, M.E., Gonda, R.M., Houtz, J.M., Hryckowian, A.J., Kelchner, V., Namburi, S. Pajcini, K.J. Popovich, M., Schleicher, D.S., Simanek, B.R., Smith, A.S., Zdanowica, G.M., Kumar, V., Peebles, C.L., Jacobs, W.R. Jr., Lawrence, J.G., Hendrix, R.W.** (2006) Exploring the Mycobacteriphage Metaproteome: Phage Genomics as an Educational Platform. *PLos Genetics* **2**:e92:0835-0847. PMCID: PMC1485703.
125. **Aravindhan, V., Narayanan, S., Gautham, N., Prasad, V., Kannan, P., Jacobs, W.R., Jr., Narayanan, P.R.** (2006) T-h-2 Immunity and CD3+ CD45RBlow-Activated T Cells in Mice Immunized with Recombinant Bacillus Calmette Guerin Expressing HIV-1 Principal Neutralizing Determinant Epitope. *FEMS Immunol. Med. Microbiol.* **47**:45-55. PMCID: PMC in process.
126. **Roy, E., De Silva, A.D., Sambandamurthy, V.K., Clark, S.O., Stavropoulos, E., Jacobs, W.R., Jr., Chan, J., Williams, A., Colston, M.J., Tascon, R.E.** (2006) Induction of High Levels of Protective Immunity After Vaccination Using Dendritic Cells Infected with Auxotrophic Mutants of *Mycobacterium tuberculosis*. *Immunol. Lett.* **103**:196-199. PMCID: PMC in process.
127. **Morbidoni, H.R., Vilcheze, C., Kremer, L., Bittman, R., Sacchettini, J.C., Jacobs, W.R., Jr.** (2006) Dual Inhibition of Mycobacterial Fatty Acid Biosynthesis and Degradation by 2-Alkynoic Acids. *Chem. Biol.* **13**:297-307. PMCID: PMC in process.
128. **Tufariello, J.A.M., Mi, K., Xu, J., Manabe, Y.C., Kesavan, A.K., Drumm, J., Tanaka, K., Jacobs, W.R. Jr., Chan, J.** (2006) Deletion of the *Mycobacterium tuberculosis* Resuscitation-Promoting factor Rv1009 Gene Results in Delayed Reactivation from Chronic Tuberculosis. *Infec. Immun.* **74**:2985-2995. PMCID: PMC1459759.
129. **Govan, V.A., Christensen, N.D., Berkower, C., Jacobs, W.R., Jr, and Williamson, A.-L.** (2006) Immunisation With Recombinant BCG Expressing the Cottontail Rabbit Papillomavirus (Crpv) L1 Gene Provides Protection From Crpv Challenge. *Vaccine* **24:**2087-2093. PMCID: PMC in process.
130. **Rao, V., Gao, F., Chen, B., Jacobs, W.R.,Jr. Glickman, M.S.** (2006) Trans Cyclopropanation of Mycolic Acids on Trehalose Dimycolate Suppresses *M. tuberculosis* Induced Inflammation and Virulence. *J. Clin. Invest*. **116**:1660-1667. PMCID: PMC1464906.
131. **Banaiee, N., Kincaid, E.Z., Buchwald, U., Jacobs, W.R. Jr., Ernst, J.D.** (2006) Potent Inhibition of Macrophage Responses to IFN-γ by Live Virulent *Mycobacterium tuberculosis* is Independent of mature Mycobacterial Lipoproteins but Dependent on TLR21. *J. Immunol.* **176:**3019-3027. PMCID: PMC in process.
132. **Freundlich, J.S., Yu,M., Lucumi, E., Kuo, Tsai, H.C., M., Valderramos, J.C., Karagyozov, L, Jacobs, W.R. Jr., Schiehser, G. A., Fidock, D. A., Jacobus, D. P., Sacchettini, J.C.** (2006) Synthesis and Biological Activity of Diaryl Ether Inhibitors of Malarial Enoyl Acyl Carrier Protein Reductase. Part 2: 2’ –Substituted Triclosan Derivatives. *Bioorganic & Medicinal Chemistry Letters*. **16**: 2163-2169. PMCID: PMC in process.
133. **Schwebach, J. R., and W. R. Jacobs, Jr.** (2006) Phage Finding Using Mycobacteria: A Secondary School of Undergraduate Research Module with the Potential to Gain Scientific Authorship. *The American Biology Teacher* **68**:482-490. PMCID: PMC n/a
134. **Banaiee, N., Jacobs, W.R., Jr. and Ernst, J.** (2006) Regulation of *Mycobacterium tuberculosis* whiB3 in the mouse lung and macrophages.*Infect Immun*. ***74****:*6449-6457. PMCID: PMC1695489.
135. **Cayabyab, M.J., Hovav, A.H., Hsu, T., Krivulka, G.R., Lifton, M.A., Gorgone, D.A., Fennelly, G.J., Haynes, B.F., Jacobs, W.R., Jr., Letvin, N.L.** (2006) Generation of CD8+ T-cell responses by a Recombinant Nonpathogenic *Mycobacterium smegmatis* Vaccine Vector expressing Human Immunodeficiency virus type 1 Env. *J. Virol.* **80**:1645-1652. PMCID: PMC1367151.
136. **Ojha, A., Anand, M., Bhatt, A., Kremer, L., Jacobs, W.R.,Jr. Hatfull, G.F.** (2005) GroEL1: A Dedicated Chaperone Involved in Mycolic Acid Biosynthesis during Biofilm formation in Mycobacteria. *Cell* **123:**861-873. PMCID: PMC in process.
137. **Bhatt, A., Kremer, L., Dai, A.Z., Sacchettini, J.C., and Jacobs, W.R.,Jr..** (2005) Conditional Depletion of KasA, a Key Enzyme of Mycolic Acid biosynthesis, Leads to Myobacterial Cell Lysis. *J. Bacteriol*. **187**:7596-7606. PMCID: PMC1280301.
138. **Colangeli, R., Helb, D., Sridharan, S., Sun, J., Varma-Basil, M., Hazbon, M.H., Hom, D., Harbacheuski, R., Megjugorac, N.J., Jacobs, W.R., Jr., Holzenberg, A., Sacchettini, J.C. and Alland, D.** (2005) The *Mycobacterium tuberculosis* iniA Gene is Essential for Activity of an Efflux Pump that Confers Drug Tolerance to Both Isoniazid and Ethambutol. *Mol. Microbiol.* **55**:1829-1840. PMCID: PMC in process.
139. **Vilcheze, C., Weisbrod, T.R., Chen, B., Kremer, L., Hazbon, M.H., Wang, F., Alland, D., Sacchettini, J.C., Jacobs, W.R., Jr.** (2005) Altered NADH/NAD+ Ratios Mediate Coresistance to Isoniazid and Ethionamide in Mycobacteria. *Antimicrobiol. Agents Chem.* **49**:708-720. PMCID: PMC547332.
140. **Sambandamurthy V.K., Derrick, S.C., Jalapathy, K.V., Chen, B., Russell, R.G., Morris, S.L. and Jacobs, W.R., Jr.**(2005) Long-Term Protection Against Tuberculosis Following Vaccination with a Severely Attenuated Double Lysine and Pantothenate Auxotroph of *Mycobacterium tuberculosis* *Infec. Immun.* **73:**1196-1203. PMCID: PMC547051.
141. **Sambandamurthy, V.K., Jacobs, W.R. Jr.** (2005) Live attenuated mutants of *Mycobacterium tuberculosis* as candidate vaccines against tuberculosis. *Micro. Infect.* ***7:***955-961. PMCID: PMC in process.
142. **Freundlich, J.S., Anderson, J.W., Sarantakis, D., Shieh, H.M., Yu, M., Valderramos, J.C., Lucumi, E., Kuo, M., Jacobs, W.R. Jr., Fidock, D.a., Schiehser, G.A., Jacobus, D.P., Sacchettini, J.C.** (2005) Synthesis, Biological activity, and X-ray Crystal Structural Analysis of Diaryl Ether Inhibitors of Malarial Enoyl Acyl Carrier Protein Reductase. Part 1: 4’-Substituted Triclosan Derivatives. *Bioorganic & Medicinal Chemistry Letters*. **15**:5247-5252. PMCID: PMC in process.
143. **Zimhony, O., Vilchèze, C. and Jacobs, W.R., Jr.** (2004) Characterization of a Recombinant *Mycobacterium smegmatis* Strain Containing a Fatty Acid Synthase I Gene Replaced with the *M. tuberculosis* Homologue. *J. Bacteriol.*, **186**:4051-4055. PMCID: PMC421601.
144. **Tufariello, J.M., Jacobs, W.R., Jr., Chan, J.** (2004) Individual *Mycobacterium tuberculosis* Resuscitation-Promoting Factor Homologues Are Dispensable for Growth In Vitro and In Vivo. *Infec. Immun.* **72**:515-526. PMCID: PMC343985.
145. **Hisert, K.B., Kirksey, M.A., Gomez, J.E. Sousa, A.O., Cox, J.S., Jacobs, W.R., Jr., Nathan, C.F., McKinney, J.D.** (2004) Identification of *Mycobacterium tuberculosis* counterimmune (cim) mutants in immunodeficient mice by differential screening. *Infect. Immun.* **72**:5315-5321. PMCID: PMC517420.
146. **Vecino, W.H., Quanquin, N.M., Martinez-Sobrido, L., Fernandez-Sesma, A., Garcia-Sastre, A., Jacobs, W.R., Jr., Fennelly, G.J.** (2004) Mucosal Immunization with Attenuated *Shigella flexneri* Harboring an Influenza Hemagglutinin DNA Vaccine Protects Mice Against A Lethal Influenza Challenge. *Virology* **325**:192-199. PMCID: PMC in process.
147. **Sampson, S.L., Dascher, C.C., Sambandamurthy, V.K., Russell, R.G., Jacobs, W.R., Jr., Bloom, B.R., and Hondalus, M.K.** (2004) Protection Elicited By A Double Leucine And Pantothenate Auxotroph Of *Mycobacterium Tuberculosis* In Guinea Pigs, *Infec. Immun.*, **72**:3031-3037. PMCID PMC387862.
148. **Matsunaga, I., Bhatt, A., Young, D.C., Chen, T.-Y., Eyles, S.J., Besra, G.S., Briken, V., Porcelli, S.A., Costello, C.E., Jacobs, W.R., Jr., Moody, D.B.** (2004) *Mycobacterium tuberculosis* *pks 12* Produces a Novel Polyketide Presented by CD1c to T Cell.  *J. Exp. Med.* **200:**1559-1569. PMCID: PMC2211992.
149. **Lee, S., Kriakov, J., Vilcheze, C., Dai, Z., Hatfull, G.F., Jacobs, W.R., Jr.** (2004) Bxz1, a New Generalized Transducing Phage for Mycobacteria. *FEMS Microbiol.* **241**:271-276. PMCID: PMC in process.
150. **Glatman-Freedman, A., Casadevall, A., Dai, Z., Jacobs, W.R., Jr., Li, A., Morris, S.L., Navoa, J.A.D., Piperdi, S., Robbins, J.B., Schneerson, R., Schwebach, J.R., Shapiro, M.** (2004) Antigenic Evidence of Prevalence and Diversity of *Mycobacteria tuberculosis* Arabinomannan. *J. Clin. Microbiol.* **42**:3225-3231. PMCID: PMC446310.
151. **Dao, D.N., Kremer, L., Guerardel, Y., Molano, A., Jacobs, W.R., Jr., Porcelli, S.A., Briken, V.** (2004) *Mycobacterium tuberculosis*  Lipomannan Induces Apoptosis and Interleukin-12 Production in Macrophages. *Infec. Immun.* **72**:2067-2074. PMCID: PMC375177.
152. **Hazbón, M.H., Ferro, B.E., Guarín, Rodriguez, A.L., Riska, P.F., Jacobs, W.R., Jr.** (2003) Photographic and Luminometric Detection of Luciferase Reporter Phages for Drugs Susceptibility Testing of Clinical *Mycobacterium tuberculosis* Isolates.  *J. Clin. Microbiol.*, **41**:4865-4869.PMCID PMC254324.
153. **Ohno, H., Zhu, G., Mohan, V.P., Chu, D., Kohno, S., Jacobs, W.R., Jr., Chan, J.** (2003) The Effects of Reactive Nitrogen Intermediates on Gene Expression of *Mycobacterium tuberculosis*. *Cell. Microbiol*. **5**:637-648. PMCID: PMC in process.
154. **Hsu,T., Hingley-Wilson, S., Chen, B., Morin, P.M., Marks, C.B., Goulding, C., Gingery, M., Eisenberg, Russell, R.G., Derrick, S.C., Collins, F.M., Morris, S.L., King, C.H. and Jacobs, W.R. Jr.** (2003) The Primary Mechanism of Attenuation of bacille Calmette-Guérin Is a Loss of Secreted Lytic Function Required for Invasion of Lung Interstitial Tissue. *PNAS, USA*, **100**:12420-12425. PMCID: PMC218773.
155. **Banaiee, N., Bobadilla-del-Valle, M., Riska, P.F., Bardarov, S., Jr., Small, P.M., Ponce-de-Leon, A., Jacobs, W.R., Jr., Hatfull, G.F., Sifuentes-Osornio, J.** (2003) Rapid Identification and Susceptibility Testing of *Mycobacterium tuberculosis* from MGIT Cultures with Luciferase Reporter Mycobacteriophages. *J. Med. Microbiol*. **52**:557-561. PMCID: PMC in process.
156. **Gokulan, K., Rupp, B., Pavelka, M., Jacobs, W., Jr., Sacchettini, J.C.** (2003) Crystal Structure of *Mycobacterium tuberculosis* Diaminopimelate Decarboxyalse, an Essential Enzyme in Bacterial Lysine Biosynthesis. *J. Biol. Chem*. 278:18588-18596. PMCID: PMC in process.
157. **Kuo, M.R., Morbidoni, H.R. Alland, D., Sneddon, S.F., Gourlie B.B., Staveski, M.M., Leonard, M., Gregory, J.S., Janjigian, A.D., Yee, C., Kreiswirth, B., Iwamoto, H., Perozzo, R., Jacobs, W.R., Jr., Sacchettini, J.C., Fidock, D.A.** (2003) Targeting Tuberculosis and Malaria Through Inhibition of Enoyl Reductase: Compound Activity and Structural Data. *J. Biol*. *Chem.* **278**:20851-20859. PMCID: PMC in process.
158. **Kremer, L., Dover, L.G., Morbidoni, H.R., Vilcheze, C., Maughan, W.N., Baulard, A., Tu, S.-C., Honore, N., Deretic, V., Sacchettini, J.C., Locht, C., Jacobs, W.R., Jr. and Besra, G.S.** (2003) Inhibition of InhA Activity, but not KasA Activity, Induces Formation of a KasA-Containing Complex in Mycobacteria. *J. Biol. Chem*. **278**:20547-20554. PMCID: PMC in process.
159. **Sharma, V., Arockiasamy, A., Ronning, D.R., Savva, C.G., Holzenburg, A., Braunstein, M., Jacobs, W.R., Jr. and Sacchettini, J.C.** (2003) Crystal Structure of *M. tuberculosis* SecA, a Preprotein Translocating ATPase. *Proc. Natl. Acad. Sci., USA* **100**:2243-2248. PMCID: PMC151325.
160. **Pedulla, M.L., Ford, M.E., Houtz, J.M., Karthikeyan, T., Wadsworth, C.J., Lewis, J.A., Jacobs-Sera, D., Falbo, J., Gross, J., Pannunzio, N., Brucker, W., Kumar, V., Kandasamy, J., Keenan, L., Bardarov, S., Jr., Kriakov, J., Lawrence, J.G., Jacobs, W.R., Jr., Hendrix, R.W. and Hatfull, G.F.** (2003) Origins of Highly Mosaic Mycobacteriophage Genomes. *Cell* **113**:171-182. PMCID: PMC in process.
161. **Pavelka, M.S., Jr., Chen, B., Kelley, C.L., Collins, F.M. and Jacobs, W.R., Jr.** (2003) Vaccine Efficacy of a Lysine Auxotroph of *M. tuberculosis*. *Infec. Immun*. **71**:4190-4192. PMCID: PMC 161997.
162. **Braunstein, M., Espinosa, B., Chan, J., Belisle, J.T. and Jacobs, W.R., Jr.** (2003) Sec A2 Functions in the Secretion of Superoxide Dismutase A and in the Virulence of *Mycobacterium tuberculosis*. *Mol. Microbiol*. **48**:453-464. PMCID: PMC in process.
163. **Otero, J., Jacobs, W.R., Jr. and Glickman, M.S.** (2003) Efficient Allelic Exchange and Transposon Mutagenesis in *Mycobacterium avium* Using Specialized Transduction. *Appl. Environ. Microbiol.* **69**:5039-5044. PMCID: PMC194949.
164. **Kriakov, J and Jacobs, W.R., Jr.** (2003) Identification of a Cryptic Alkaline Phosphatase in *Mycobacterium smegmatis*. *J. Bacteriol*. **185**:4983-4991. PMCID: PMC166462.
165. **Consaul, S.A., Jacobs, W.R., Jr. and Pavelka, M.S., Jr.** (2003) Extragenic Suppression of the Requirement for Diaminopimelate in diaminopimelate auxotrophs *Mycobacterium smegmatis*. *FEMS Micro. Letts,* **225**:131-135. PMCID: PMC in process.
166. **Bhatt, A. and Jacobs, W.R., Jr.** (2003) Conjugal Rites of Mycobacteria. *Nat. Genetics*, **34**:3-4. PMCID: PMC in process.
167. **Bardarov, Jr.,S, H. Dou, K. Eisenach, N. Banaiee, Y. Su, G.F. Hatfull, J. Chan, W.R. Jacobs, Jr. and P.F. Riska** (2002) Detection and drug-susceptibility testing of *M. tuberculosis* from sputum samples using luciferase reporter phage: Comparison with the Mycobacteria Growth Indicator Tube (MGIT) system, *Diagnostic Microbiology & Infectious Disease* **45**:53-61. PMCID: PMC in process.
168. **Sambandamurthy, V.K., Wang X., Chen, B, Russell, R.G., Derrick, S., Collins, F.M., Morris, S.L. and Jacobs, W.R., Jr.** (2002) A Pantothenate Auxotroph of *Mycobacterium tuberculosis* is Highly Attenuated and Protects Mice Against Tuberculosis. *Nat. Med*. **8**:1171-1174. PMCID: PMC in process.
169. **McAdam, R.A., Quan, S., Smith, D.A., Bardarov, S., Betts, J.C., Cook, F.C., Hooker, E.U., Lewis, A., Woollard, P., Everett, M.J., Lukey, P.T., Bancroft, G.J., Jacobs, W.R. and Jr. and Duncan, K.** (2002) Characterization of a *Mycobacterium tuberculosis* H37Rv Transposon Library Reveals Insertions in 351 ORFs and Mutants with Altered Virulence. *Microbiology* **148**:2975-2986. PMCID: PMC in process.
170. **Bardarov, S., Bardarov, S. Jr., Pavelka, M. Jr., Sambandamurthy, V., Larsen, M., Tufariello, J., Chan, J., Hatfull, G. and Jacobs, W.R. Jr.** (2002) Specialized Transduction: An Efficient Method for Generating Marked and Unmarked Targeted Gene Disruptions in *Mycobacterium tuberculosis*, *M. bovis* BCG, and *M. smegmatis*. *Microbiology* 148:3007-3018.PMCID: PMC in process.
171. **Fleischmann, R.D., Alland, D., Eisen, J., Carpenter, L., White, O., Peterson, DeBoy, R., Dodson, R., Gwinn, M., Haft, D., Hickey, E., Kolonay, J.F., Nelson, W.C., Umayam, L.A., Ermolaeva, M., Salzberg, S.L., Delcher, A., Utterback, T., Weidman, J., Khouri, H., Gill, J., Mikula, A., Bishai, W., Jacobs, Jr., W.R., Venter, J.C. and Fraser, C.M.** (2002) Whole Genome Comparison of *Mycobacterium tuberculosis* Clinical and Laboratory Strains. *J. Bacteriol.* **184**:5479-5490. PMCID: PMC 135346.
172. **Larsen, M.H., Vilcheze, C., Kremer, L., Besra, G.S., Parsons, L., Salfinger, M., Heifets, L, Hazbon, M.H., Alland, D., Sacchettini, J.C. and Jacobs, W.R.,Jr.** (2002) Overexpression of InhA, but not kasA, Confers Resistance to Isoniazid and Ethionamide in *Mycobacterium smegmatis*, M. bovis BCG, and *M. tuberculosis*. *Mol. Microbiol*. **2**:453-466.PMCID: PMC in process.
173. **Schwebach, J.R., Chen, B., Glatman-Freedman, A., Casadevall, A., McKinney, J., Harb, J.L., McGuire, P.J., Barkley, W.E., Bloom, B.R. and Jacobs, W.R. Jr.** (2002) Infection of Mice with Aerosolized *Mycobacterium tuberculosis*: Use of a Nose-Only Apparatus for Delivery of Low Inocula and Design of an Ultra-Safe Facility. *Appl. Environ. Microbiol*. **68**:4646-4649. PMCID: PMC124060.
174. **Vecino, W.H., Morin, P., Jacobs, W.R., Jr. and Fennelly, G.J.** (2002) Mucosal DNA vaccination with highly attenuated Shigella is superior to attenuated Salmonella and comparable to intramuscular DNA vaccination of T cells against HIV*. Immunol. Lett*. **82**:197-204. PMCID: PMC in process.
175. **Wooff, E., Michell, S.L., Gordon, S.V., Chambers, M.A., Bardarov, S., Jacobs, W.R., Jr., Hewinson, R.G. and Wheeler, P.R.** (2002) Function genomics reveals the sole sulphate transporter of the *Mycobacterium tuberculosis* complex and its relevance to the acquisition of sulphur in vivo. *Mol. Microbiol*. **43**:653-663. PMCID: PMC in process.
176. **Steyn, A.J., Collins, D.M., Hondalus, M.K., Jacobs, W.R., Jr, Kawakami, R.P. and Bloom, B.R.** (2002) *Mycobacterium tuberculosis* WhiB3 Interacts With RpoV to Affect Host Survival But Is Dispensable for in vivo Growth. *Proc. Natl. Acad. Sci.USA* **99**:3147-3152. PMCID: PMC122487.
177. **Huang, C.-C., Smith, C.V., Glickman, M.S., Jacobs, W.R., Jr. and Sacchettini, J.C.** (2002) Crystal Structures of Mycolic Acid Cyclopropane Synthases from *Mycobacterium tuberculosis.* *J. Biol. Chem*. **277**:11559-11569. PMCID: PMC in process.
178. **Perozzo, R., Kuo, M., Singh, S., A.B., Valiyaveettil, J.T., Bittman, R., Jacobs, W.R., Jr., Fidock, D.A. and Sacchettini, J.C.** (2002) Structural Elucidation of the Specificity of the Antibacterial Agent Triclosan for Malarial Enoyl Acyl Carrier Protein Reductace. *J. Biol. Chem*. **277**:13106-13114. PMCID: PMC in process.
179. **Brennan, M.J., Delogu, G., Chen, Y., Bardarov, S., Kriakov, J., Alavi, M. and Jacobs, W.R., Jr.** (2001) Evidence that a Mycobacterial PE\_PGRS Protein Cell Surface Constituents that Influence Interactions with Other Cells. *Infect. Immun*.**69**:7326-7333. PMCID: PMC98818.
180. **Banaiee, N., Bobadilla-del-Valle, M., Bardarov, S., Riska, P., Small, P.M., Ponce-de-Leon, A., Jacobs, W.R., Jr., Hatfull, G.F. and Sifuentes-Osornio, J.** (2001) Luciferase Reporter Mycobacteriophages for Detection, Identification, and Antibiotic Susceptibility Testing of *Mycobacterium tuberculosis* in Mexico. *J. Clin. Microbiol*. **39**:3883-3888. PMCID: PMC88459.
181. **Raman, S., Song, T., Puyang, X., Bardarov, S., Jacobs, W.R., Jr. and Husson, R.N.** (2001) The Alternative Sigma Factor SigH Regulates Major Components of the Oxidative and Heat Stress Responses in *Mycobacterium tuberculosis*. *J. Bacteriol*. **183**:6119-6125. PMCID: PMC99691.
182. **Schwebach, J.R., Jacobs, W.R., Jr. and Casadevall, A.** (2001) Sterilization of *Mycobacterium tuberculosis* Samples by Antimicrobial Fixation in the BSL-3 Laboratory. *J. Clin. Micrbiol*. **39**:769-771. PMCID: PMC87817.
183. **Braunstein, M., Brown, A.M., Kurtz, S. and Jacobs, W.R., Jr.** (2001) Two Non-Redundant SecA Homologues Function in Mycobacteria. *J. Bacteriol*. **183**:6979-6990. PMCID: PMC95544.
184. **Glickman, M.S., Cahill, S.M. and Jacobs, W.R., Jr.** (2001) The *Mycobacterium tuberculosis* cmaA2 Gene Encodes a Mycolic Acid trans Cyclopropane Synthetase. *J. Biol. Chem.* **276**:2228-2233. PMCID: PMC in process.
185. **Glickman, M.S., Cox, J.S. and Jacobs, W.R., Jr.** (2000) A Novel Mycolic Acid Cyclopropane Synthetase Is Required for Cording, Persistence and Virulence of *Mycobacterium tuberculosis*. *Molec. Cell*. **5**:717-727. PMCID: PMC in process.
186. **Mediavilla, J., Jain, S., Kriakov, J., Ford, M.E., Jacobs, W.R., Jr., Hendrix, R. W. and Hatful, G.F.** (2000) Genome Organization and Characterization of Mycobacteriophage Bxb1. *Mol. Microbiol*. **38**: 955-970. PMCID: PMC in process.
187. **Chambers, M.A., Williams, A., Gavier-Widen, D., Whelan, A., Hall, G., Marsh, P.D., Bloom, B.R., Jacobs, W.R., Jr. and Hewinson, R.G.** (2000) Identification of a BCG Auxotrophic Mutant Which Protects Guinea Pigs Against Tuberculosis Without Sensitising to Tuberculin. *Infect. Immun*. **68**:7094-7099. PMCID: PMC97820.
188. **Zimhony, O., Cox, J.S., Welch, J.T., Vilchèze, C. and Jacobs, W.R., Jr.** (2000) Pyrazinamide Inhibits the Eukaryotic-Like Fatty Acid Synthetase I (FASI) of *Mycobacterium tuberculosis. Nat. Med*. **6**:1043-1047. PMCID: PMC in process.
189. **Sharma, V., Sharma, S., Hoener zu Bentrup, K., McKinney, J. D., Russell, D.G., Jacobs, W. R., Jr., and Sacchettini, J.C.** (2000) The Structure of Isocitrate Lyase from *Mycobacterium tuberculosis*. *Nat. Struct. Biol.* **7**:663-668. PMCID: PMC in process.
190. **McKinney, J.D., Honer zu Bentrup, K., Munoz-Elias, E.J., Miczak, A., Chen, B., Chan, W.-T., Swenson, D., Sacchettini, J.C., Jacobs, W.R., Jr. and Russell, D.G.**  (2000) Persistence of *Mycobacterium tuberculosis* in Macrophages and Mice Requires the Glyoxylate Shunt Enzyme Isocitrate Lyase. *Nature* **406**:735-738. PMCID: PMC in process.
191. **Vilchèze, C., Morbidoni, H.R., Weisbrod, T.R., Iwamoto, H., Sachettini, J.C. and Jacobs, W.R., Jr.** (2000) Inactivation of the inhA-Encoded Fatty Acid Synthase II (FASII) Enoyl-Acyl Carrier Protein Reductase Induces the Accumulation of the FASI End Products and Cell Lysis of *Mycobacterium smegmatis*. *J. Bacteriol*. **182**:4059-4067. PMCID: PMC94593.
192. **Braunstein, M., Griffin, T.J., IV, Kriakov, J.I., Friedman, S.T., Grindley, N.D.F. and Jacobs W.R., Jr.** (2000) Identification of Genes Encoding Exported *Mycobacterium tuberculosis* Proteins Using a Tn552'phoA in vitro Transposition System. *J. Bacteriol*. **182**:2732-2740. PMCID: PMC101980.
193. **Kremer, L., Douglas, D., Baulard, A.R., Morehouse, C., Guy, M., Alland, D., Dover, L., Lakey, J., Jacobs, W.R., Jr., Brennan, P.J., Minnikin, D.E. and Besra, G.S.** (2000) Thiolactomycin and Related-structures as Novel Antimycobacterial Drugs That Target KasA and KasB in *Mycobacterium tuberculosis*. *J. Biol. Chem*. **275**:16857-16864. PMCID: PMC in process.
194. **Hondalus, M.K., Bardarov, S.S., Russell, R., Chan, J., Jacobs, W.R., Jr. and Bloom, B.** (2000) Attenuation Of And Protection Induced By A Leucine Auxotroph of *Mycobacterium tuberculosis*. *Infect. Immun*. **68**:2888-2898. PMCID: PMC97501.
195. **Alland, D., Steyn, A.J., Weisbrod, T., Aldrich, K., and Jacobs, W.R., Jr.** (2000) Characterization of a *Mycobacterium tuberculosis* iniBAC Promoter, a Promoter That Responds to Cell Wall Biosynthesis Inhibition. *J. Bacteriol*. **182**:1802-1811. PMCID: PMC101861.
196. **Piatek, A.S., Telenti, A., Murray, R.R., El-Haji, H., Jacobs, W.R., Jr., Kramer, F.R. and Alland, D.** (2000) Genotypic Analysis of *Mycobacterium tuberculosis* in Two Distinct Populations Using Molecular Beacons: Implications for Rapid Susceptibility Testing. *Antimicrob. Agents Chemother.* **44**:103-110. PMCID: PMC89635.
197. **Cox, J.S., Chen, B., McNeil, M. and Jacobs, W.R., Jr.**  (1999) Complex Lipid Determines Tissue-Specific Replication of *Mycobacterium tuberculosis* in Mice. *Nature* **402**:79-83. PMCID: PMC in process.
198. **Pavelka, M.S., and Jacobs, W.R., Jr**. (1999) A Comparison of the Construction of Unmarked Deletion Mutations in *Mycobacterium smegmatis*, *M. bovis* Bacille Calmette-Guerin (BCG), and *M. tuberculosis* H37R by Allelic Exchange. *J. Bacteriol.* **181**:4780-4789. PMCID: PMC93962.
199. **Bange, F.-C., Collins, F.M. and Jacobs, W.R., Jr.** (1999) Survival of Mice Infected with *Mycobacterium smegmatis* Containing Large DNA Fragments from *Mycobacterium tuberculosis*. *Tuber. Lung Dis*. **79**:171-180. PMCID: PMC in process.
200. **Daugelat, S. and Jacobs, W.R. Jr.** (1999)The *Mycobacterium tuberculosis* recA intein Can be Used in an ORFTRAP to Select for Open Reading Frames. *Protein Sci*. **8**:644-653. PMCID: PMC2144272.
201. **Dussurget, O., Timm, J., Gomez, M., Gold, B., Yu, S., Sabol, S.Z., Holmes, R.K., Jacobs, W.R., Jr. and Smith, I.** (1999) Transcriptional Control of the Iron-Responsive fxbA Gene by the Mycobacterial Regulator IdeR. *J. Bacteriol*. **181**:3402-3408. PMCID: PMC93806.
202. **Riska, P.F., Yu, S., Bardarov, S., Freundlich, L., Sarkis, G., Hatfull, G., Carriere, C., Kumar, V., Chan, J. and Jacobs, W.R., Jr.** (1999) Rapid Film-Based Determination of Antibiotic Susceptibilities of *Mycobacterium tuberculosis* Strains by Using a Luciferase Reporter Phage and the Bronx Box. *J. Clin. Microbiol*. **37**:1144-1149. PMCID: PMC88662.
203. **Yu, S., Fiss, E. and Jacobs, W.R., Jr.** (1998) Analysis of the Exochelin Locus in *Mycobacterium smegmatis*: Biosynthesis Genes Have Homology with Genes of the Peptide Synthetase Family. *J. Bacteriol*. **180**:4676-4685. PMCID: PMC107483.
204. **Alland, D., Kramnik, I., Weisbrod, T.R., Otsubo, L., Cerny, R., Miller, L.P., Jacobs, W.R., Jr., and Bloom, B.R.** (1998) Identification of Differentially Expressed mRNA in Prokaryotic Organisms by Customized Amplification Libraries (DECAL): The Effect of Isoniazid on Gene Expression in *Mycobacterium tuberculosis*. *Proc. Natl. Acad. Sci.USA*. **95**:13227-13232. PMCID: PMC23765.
205. **Basso, L.A., Zheng, R., Musser, J., Jacobs, W.R., Jr. and Blanchard, J.S.** (1998) Mechanisms of Isoniazid Resistance in *M. tuberculosis*: Enzymatic Characterization of Enoyl Reductase Mutants Identified in Isoniazid-Resistant Clinical Isolates. *J. Infect. Dis*. **178**:769-775. PMCID: PMC in process.
206. **Banerjee, A., Sugantino, M., Sacchettini, J.C. and Jacobs, W.R., Jr.** (1998) The mabA Gene from the InhA Operon of *M. tuberculosis* Encodes a 3-keotacyl Reductase that Fails to Confer Isoniazid Resistance. *Microbiology* **144**:2697-2707. PMCID: PMC in process.
207. **Miesel, L., Weisbrod, T.R., Marcinkeviciene, J., Bittman, R. and W.R. Jacobs, Jr.** (1998) NADH Dehydrogenase Defects Confer Isoniazid Resistance and Conditional Lethality in *Mycobacterium smegmatis*. *J. Bacteriol*. **180**:2459-2467. PMCID: PMC107089.
208. **Klabunde, T., Sharma, S., Telenti, A., Jacobs, W.R., Jr. and Sacchettini, J.C.** (1998) Crystal Structure of gyrA intein from *Mycobacterium xenopi* Reveals Structural Basis of Protein Splicing. *Nat. Struct. Biol*. **5**:31-36. PMCID: PMC in process.
209. **Rozwarski, D., Grant, G., Barton, D., Jacobs, W.R., Jr. and Sacchettini, J.C.**  (1998) Modification of the NADH of the Isoniazid Target (InhA) from *Mycobacterium tuberculosis*. *Science* **279**:98-102. PMCID: PMC in process.
210. **Riska, P.F., Jacobs, W.R., Jr., Bloom, B.R., McKitrick J. and Chan, J.** (1997) Specific Identification of *Mycobacterium tuberculosis* with the Luciferase Reporter Mycobacteriophage: Use of p-Nitro-Acetylamino-Hydroxy Propiophenone. *J. Clin. Microbiol*. **35**:3225-3231. PMCID: PMC230152
211. **Carriere, C., Kriakov, J., Riska, P., Chan, J., Bardarov, S. and Jacobs, W.R., Jr.** (1997) Conditionally-Replicating Luciferase Reporter Phages: Improved Sensitivity for Rapid Detection and Assessment of Drug Susceptibility of *Mycobacterium tuberculosis*. *J. Clin. Microbiol*. **35**:3232-3239. PMCID: PMC230153.
212. **Telenti, A., Southworth, M., Alcaide, F., Daugelat, S., Jacobs, W.R., Jr. and Perler, F.B.** (1997) The *Mycobacterium xenopi* GyrA Protein Splicing Element: Characterization of a Minimal Intein. *J. Bacteriol*. **179**:6378-6382. PMCID: PMC179553.
213. **Pelicic, V., Jackson, M., Reyrat, J.M., Jacobs, W.R., Jr., Gicquel, B. and Guilhot, C.** (1997) Efficient Allelic Exchange and Transposon Mutagenesis in *Mycobacterium tuberculosis*. *Proc. Natl. Acad. Sci., USA*. **94**:10955-10960. PMCID: PMC23543.
214. **Bardarov, S., Kriakov, J., Carriere, C., Yu, S., Vaamonde, C., McAdam, R.A., Bloom, B.R., Hatfull, G.F. and Jacobs, W.R., Jr.** (1997) Conditionally Replicating Mycobacteriophages: A System for Transposon Delivery to *Mycobacterium tuberculosis*. *Proc. Natl. Acad. Sci., USA*. **94**:10961-10966. PMCID: PMC23545.
215. **Sreevatsan, S., Stockbauer, K.E., Pan, X., Kreiswirth, B., Moghazeh, S.L., Jacobs, W.R., Jr., Telenti, A. and J.M. Musser** (1997) Ethambutol Resistance in *Mycobacterium tuberculosis* Critical Role of embB Mutations. *Antimicrob. Agents Chemother*. **41**:1677-1681.PMCID: PMC163984.
216. **Telenti, A., Philipp, W., Seevatsan S., Bernasconi C., Stockbauer, K., Wieles, B., Musser, J. and Jacobs, W.R., Jr.** (1997) The emb Operon, a Gene Cluster of *Mycobacterium tuberculosis* Involved in Resistance to Ethambutol. *Nat. Med*. **3**:567-570. PMCID: PMCin process.
217. **Cirillo, J.D., Weisbrod, T.R., Banerjee, A., Bloom, B.R. and Jacobs, W.R., Jr.** (1997) Genetic determination of meso-diaminapimelate biosynthetic pathway of mycobacteria. *J. Bacteriol*. **179**:2792. PMCID: PMC179036.
218. **Tuckman, D., Donnelly, R.J., Jacobs, W.R., Jr. and Connell, N.D.**  (1997) Interruption of the Phosphoglucose Isomerase Gene Results in Glucose Auxotrophy in *Mycobacterium smegmatis*. *J. Bacteriol*. **179**:2724-2730. PMCID: PMC179023.
219. **Pavelka, M.S., Weisbrod, T. and Jacobs, W.R., Jr.** (1997) Cloning of the dapB Gene Encoding Dihydrodipicolinate Reductase, from *Mycobacterium tuberculosis*. *J. Bacteriol*. **179**:2777-2782. PMCID: PMC179033.
220. **Pavelka, M.S., Jr. and Jacobs, W.R., Jr.** (1996) Biosynthesis of Diaminopimelate (DAP), the Precursor of Lysine and a Component of Peptidoglycan, Is an Essential Function of *Mycobacterium smegmatis*. *J. Bacteriol*. **178**:6496-6507. PMCID: PMC178536.
221. **Dubnau, E., Soares, S., Huang, T.J. and Jacobs, W.R., Jr.** (1996) Overproduction of Mycobacterial Ribosomal Protein S13 Induces Catalase/Peroxidase Activity and Hypersensitivity to Isoniazid in *Mycobacterium smegmatis*. *Gene* **170:**17-22. PMCID: PMC in process.
222. **Bange, F-C., Brown, A.M. and Jacobs, W.R., Jr.** (1996) Leucine Auxotrophy Restricts Growth of *Mycobacterium bovis* BCG in Macrophages. *Infect. Immun*. **64**:1794-1799.PMCID: PMC173994.
223. **Hewinson, R.G., Michell, S.L., Russell, W.P. McAdam, R.A. and Jacobs, W.R., Jr.** (1996) Molecular Characterization of MPT83: A Seroreactive Antigen of *Mycobacterium tuberculosis* with Homology to MPT70. *Scand. J. Immunol*. **43**:490-499. PMCID: PMC in process.
224. **Pearson, R.E., Jurgensen, S., Sarkis, G.J., Hatfull, G.F. and Jacobs, W.R., Jr**. (1996) Construction of D29 Shuttle Plasmids and Luciferase Reporter Phages for Detection of Mycobacteria. *Gene* **183**:129-136. PMCID: PMC in process.
225. **Phillip, W.J., Poulet, S., Eiglmeier, K., Pascopella, L., Balasubramanian, V., Heym, B., Bergh, S., Bloom, B.R. Jacobs, W.R., Jr. and Cole, S.T.** (1996) An Integrated Map of the Genome of the Tubercle Bacillus *Mycobacterium tuberculosis* H37Rv, and Comparison with *M. leprae*. *Proc. Natl. Acad. Sci. USA*. **93**:3132-3137. PMCID: PMC39774.
226. **Guleria, I., Teitelbaum, R., McAdam, R.A., Kalpana, G., Jacobs, W.R., Jr. and Bloom, B.R.** (1996) Auxotrophic Vaccines for Tuberculosis. *Nat. Med.* **2**:334-337. PMCID: PMC in process.
227. **Balasubramanian, V., Pavelka, Jr., M.S., Bardarov, S., Martin, J., Weisbrod, T.R., McAdam, R.A., Bloom, B.R. and Jacobs, W.R., Jr.** (1996) Allelic Exchange in *Mycobacterium tuberculosis* with Long Linear Recombination Substrates. *J. Bacteriol*. **178**:273-279. PMCID: PMC177649.
228. **Takiff, H., Ciminio, M., Delgado, M., Musso, M.C., Salazar, L., Martinez, R., Telenti, A., Bloom, B.R. and Jacobs, W.R., Jr.** (1996) Efflux Pump of the Proton Antiporter Family Confers Low-level Fluoroquinoline Resistance in *Mycobacterium smegmatis*. *Proc. Natl. Acad. Sci.USA*. **93**:362-366. PMCID: PMC40238.
229. **Quemard, A., Dessen, A., Sugantino, M., Jacobs, W.R., Jr., Sacchettini, J.C. and Blanchard, J.S.** (1996) Binding of Catalase Peroxidase-Activated Isoniazid to Wild-Type and Mutant *Mycobacterium tuberculosis* Enoyl-ACP-Reductases. *J. Am. Chem. Soc*. **118**: 1561-1562. PMCID: PMC n/a.
230. **Collins, D.M., Kawakami, R.P., de Lisle, G.W., Pascopella, L., Bloom, B.R. and Jacobs, W.R., Jr.** (1995) Mutation in the Principal Sigma Factor Causes a Loss of Virulence in a Strain of the *Mycobacterium tuberculosis* Complex *Proc. Natl. Acad. Sci. USA*. **92**:8036-8040.PMCID: PMC41281.
231. **Quemard, A., Sacchettini, J.C., Dessen, A., Vilcheze, C., Bittman, R., Jacobs, W.R., Jr. and Blanchard, J.S.** (1995) Enzymatic Characterization of the Target for Isoniazid in *Mycobacterium tuberculosis*. *Biochemistry*. **34**:8235-8241. PMCID: PMC in process.
232. **Dessen, A., Quemard, A., Blanchard, J.S., Jacobs, W.R., Jr. and Sacchettini, J.C.** (1995) Crystal Structure and Function of the Isoniazid Target of *Mycobacterium tuberculosis*. *Science*. **267**:1638-1641. PMCID: PMC in process.
233. **McAdam, R.A., Weisbrod, T.R., Martin, J., Scuderi, J.D., Brown, A, Cirillo, J.D., Kalpana, G., Bloom, B.R. and Jacobs, W.R., Jr.** (1995) *In vivo* Growth Characteristics of Leucine and Methionine Auxotrophic Mutants of *Mycobacterium bovis* BCG Generated by Transposon Mutagenesis. *Infect. Immun*. **63**: 1004-1012. PMCID: PMC173102.
234. **Kapur, V., Li, L.L., Hamrick, M.R., Pikaytis, B.B., Shinnick, T.M., Telenti, A., Jacobs, W.R., Jr., Banerjee, A., .Cole, S.T., Yuen, K.Y., Claridge, J.E., III, Kreiswirth, B.N. and Musser, J.M.** (1995) Rapid Mycobacterium Species Assignment and Unambiguous Identification of Mutations Associated with Antimicrobial Resistance in *Mycobacterium tuberculosis* by Automated DNA Sequencing. *Arch. Pathol. Lab. Med*. **119**:131-138. PMCID: PMC in process.
235. **Cirillo, J.D., Stover, C.K., Bloom, B.R., Jacobs, W.R. Jr., Barletta, R.G.** (1995) Bacterial Vaccine Vectors and Bacillus Clmette-Guerin. *Clin. Infect Dis*  **20:**1001-1009. PMCID: PMC in process.
236. **Sarkis, G., Jacobs, W.R., Jr. and Hatfull, G.F.** (1995) L5 Luciferase Reporter Mycobacteriophages: a Sensitive Tool for the Detection and Assay of Live Mycobacteria. *Mol. Microbiol*. **15**:1055-1067. PMCID: PMC in process.
237. **Banerjee, A., Dubnau, E., Quemard, A., Balasubramanian, V., Um, K.S., Wilson, T., Collins, D., de Lisle, G. and Jacobs, W.R., Jr.** (1994) InhA, a Gene Encoding a Target for Isoniazid and Ethionamide in *Mycobacterium tuberculosis*. *Science* **263**: 227-230. PMCID: PMC in process.
238. **Cirillo, J.D., Weisbrod, T.R., Pascopella, L., and Jacobs, W.R., Jr.** (1994) Isolation and Characterization of the Aspartate Semialdehyde Dehydrogenase and Aspartokinase Genes From Mycobacteria. *Molec. Microbiol*. **11**:629-639. PMCID: PMC in process.
239. **Pascopella, L., Collins, F.M., Martin, J.M., Stover, C.K., Lee, M.H., Hatfull, G.F., Bloom, B.R. and Jacobs, W.R., Jr.** (1994) Use of *In vivo* Complementation in *Mycobacterium tuberculosis* to Identify a Genomic Fragment Associated with Virulence. *Infect. Immun*. **62**: 1313-1319. PMCID: PMC186277.
240. **Fiss, E.H., Yu, S., and Jacobs, W.R., Jr.** (1994) Identification of Genes Involved in the Sequestration of Iron in Mycobacteria: the Ferric Exochelin Biosynthesis and Uptake Pathways. *Mol. Microbiol*. **14**:557-569. PMCID: PMC in process.
241. **Mills, J.A., McNeil, M.R., Jacobs, W.R., Jr., and Brennan, P.J.** (1994) Genetic Loci *Mycobacterium avium* ser2 Gene Cluster and their Functions. *J. Bacteriol*. **176**: 4803-4808. PMCID: PMC196313.
242. **Heym. B., Honore, N., Truffot-Pernot, C., Banerjee, A,M Jacobs, W.R., Jr., van Embden, J.D.A., Grosset, J.H. and Cole, S.T.** (1994) Implications of Multidrug Resistance for the Future of Short-course Chemotherapy of Tuberculosis: a Molecular Study. *Lancet*. **344**: 293-298. PMCID: PMC in process.
243. **Cirillo, J.D., Weisbrod, T.R., Banerjee, A., Bloom, B.R. and Jacobs, W.R., Jr.** (1994) Genetic Determination of the meso-Diaminopimelate Biosynthetic Pathway of Mycobacteria. *J. Bacteriol.* **176**: 4424-4429. PMCID: PMC205656.
244. **Brunhuber, N.W.W., Banerjee, A., Jacobs, W.R., Jr. and J.S. Blanchard**. (1994) Cloning, Sequencing, and Expression of Rhodococcus L-Phenylalanine Dehydrogenase: Sequence Comparisons to Amino Acid Dehydrogenases. *J. Biol. Chem*. **269**:16203-16211. PMCID: PMC in process.
245. **Takiff, H.E., Salazar, L., Guerrero C., Huang, W.M., Kreisworth, B., Cole, S.T., Jacobs, W.R., Jr., and Telenti, A.** (1994) Cloning and Nucleotide Sequence of *Mycobacterium tuberculosis* gyrA and gyrB Genes and Detection of Quinolone Resistance Mutations. *Antimicrob. Agents Chemo*. **38**: 773-780. PMCID: PMC in process.
246. **Donnelly-Wu, M.K., Jacobs, W.R., Jr. and Hatfull, G.F.** (1993) Superinfection Immunity of Mycobacteriophage L5: Applications for Genetic Transformation of Mycobacteria. *Mol. Microbiol*. **7**:407-417. PMCID: PMC in process.
247. **Cirillo, J.D., Weisbrod, T.R. and Jacobs, W.R., Jr.** (1993) Efficient Electro-Transformation of *Mycobacterium smegmatis*. *Biorad Tech. Bull*. 1360. PMCID: PMC in process.
248. **Belisle, J.T., Klaczkiewicz, K., Brennan, P.J., Jacobs, W.R., Jr., and Inamine, J.** (1993) Rough Morphological Variants of *Mycobacterium avium*: Characterization of Genetic Deletions Resulting in the Loss of Glycopeptidolipid Expression. *J. Biol. Chem*. **268**:10517-10523.PMCID: PMC in process.
249. **Jacobs, W.R., Jr., Barletta, R., Udani, R., Chan, J., Kalkut, G., Sarkis, G., Hatfull, G.F. and Bloom, B.R.** (1993) Rapid Assessment of Drug Susceptibilities of *Mycobacterium tuberculosis* by Means of Luciferase Reporter Phages. *Science* **260**:819-822. PMCID: PMC in process.
250. **Cooksey, R.C., Crawford, J.T., Jacobs, W.R., Jr., and Shinnick, T.M.** (1993) A Rapid Method for Screening Antimicrobial Agents for Activities Against a Strain of *Mycobacterium tuberculosis* Expressing Firefly Luciferase. *Antimicrob. Agents Chemo*. **37**: 1348-1352. PMCID: PMC187964.
251. **Averill, L.E., Cavallo, U., Wallis, R.S., Boom, W.H., Bona, M., Mincek, M., Pascopella, L., Jacobs, W.R., Jr., and Ellner, J.J.** (1993) Screening of a Cosmid Library of *Mycobacterium bovis* BCG in smegmatis for Novel T-cell Stimulatory Antigens. *Res. Microbiol.* **144**:349-362. PMCID: PMC in process.
252. **Pascopella, L., Collins, F.M., Martin, J.M., Jacobs, W.R., Jr. and Bloom, B.R**. (1993) Identification of a Genomic Fragment of *Mycobacterium tuberculosis* Responsible for *in vivo* Growth Advantage. *Infect. Agents Dis*. **4**:282-284. PMCID: PMC in process.
253. **Barletta, R.G., Kim, D.D., Snapper, S.B., Bloom, B.R. and Jacobs, W.R., Jr.** (1992) Identification of Expression Signals of the Mycobacteriophages Bxb1, L1, and TM4 Using the Escherichia-Mycobacterium Shuttle Plasmids pYUB75 and pYUB76 Designed to Create Translational Fusions to the lacZ Gene. *J. Gen. Microbiol*. **138**:23-30. PMCID: PMC in process.
254. **Daley, C.D., Small, P.M., Schecter, G.F., Schoolnick, G.K., McAdam, R.A., Jacobs, W.R., Jr. and Hopewell, P.C.** (1992) An Outbreak of Tuberculosis with Accelerated Progression among Persons Infected with the Human Immunodeficiency Virus: an Analysis Using Restriction Fragment Length Polymorphisms. *N. Engl. J. Med*. **326**:231-235. PMCID: PMC in process.
255. **Kalpana, V.G., Bloom, B.R. and Jacobs, W.R., Jr.** (1991) Insertional Mutagenesis and Illegitimate Recombination in Mycobacteria. *Proc. Natl. Acad. Sci., USA***. 88**:5433-5437.PMCID: PMC51887.
256. **Lee, M.H., Pascopella, L., Jacobs, W.R., Jr. and Hatfull, G.F.** (1991) Site‑specific Integration of Mycobacteriophage L5: Integration‑Proficient Vectors for *Mycobacterium smegmatis*, BCG, and *M. tuberculosis*. *Proc. Natl. Acad. Sci*., *USA.* **88**:3111-3115. PMCID: PMC51395.
257. **Sirawaraporn, W., Sirawaraporn, A., Chanpongsn, A., Jacobs, W.R., Jr. and Santi, D.V.** (1991) Purification and Characterization of Dihydrofolate Reductase from Wild‑type and Trimethoprim‑Resistant *Mycobacterium smegmatis*. *Exp. Parasitol*. **72**:184-190.PMCID: PMC in process.
258. **Stover, C.K., de la Cruz, V.F., Fuerst, T.R., Burlein, J.E., Benson, L.A., Bennett, L.T., Bansal, G.P., Young, J.F., Lee, M.H., Hatfull, G., Snapper, S.B., Barletta, R.G., Jacobs, W.R., Jr. and Bloom, B.R.** (1991) New Use of BCG for Recombinant Vaccines. *Nature* **351**:456-460.PMCID: PMC n/a.
259. **Belisle, J.T., Pascopella, L., Imamine, J., Brennan, P.J. and Jacobs, W.R., Jr.** (1991) Isolation and Expression of a Gene cluster Responsible for Biosynthesis of the Glycopeptidolipid Antigen of *Mycobacterium avium*. *J. Bacteriol*. **173**:6991-6997.PMCID: PMC209054.
260. **Cirillo, J.D., Barletta, R.G., Bloom, B.R. and W. R. Jacobs, Jr.** (1991) A Novel Transposon Trap for Mycobacteria: Isolation and Characterization of IS1096. *J. Bacteriol*. **173**:7772-7780.PMCID: PMC212567.
261. **Snapper, S.B., Melton, R.E., Mustafa, S., Kieser, T. and Jacobs, W.R., Jr.** (1990) Isolation and Characterization of Efficient Plasmid Transformation Mutants of *Mycobacterium smegmatis*. *Mol. Microbiol*. **4**:1911‑1919. PMCID: PMC in process.
262. **Barletta, R.G., Snapper, S.B., Cirillo, J.D., Connell, N.D., Kim, D.D., Jacobs, W.R., Jr. and Bloom, B.R.** (1990) Recombinant BCG as a Candidate Oral Vaccine Vector. *Res. Microbiol*. **141**:931‑939.PMCID: PMC in process.
263. **Lugosi, L., Jacobs, W.R., Jr., and Bloom, B.R.** (1989) Genetic Transformation of BCG. *Tubercle* **70**:159‑170. PMCID: PMC in process.
264. **Grosskinsky, C.M., Jacobs, W.R., Jr., Clark‑Curtiss, J.E., and Bloom, B.R.** (1989) Genetic relationships Between *Mycobacterium leprae*, *Mycobacterium tuberculosis*, and Candidate Leprosy Vaccine Strains by DNA Hybridization: Identification of a *M. leprae*‑Specific Repetitive Sequence. *Infect. Immun*. **57**:1535‑1541. PMCID: PMC313310.
265. **Snapper, S.B., Lugosi, L., Jekkel, A., Melton, R., Kieser, T., Bloom, B.R. and Jacobs, W.R., Jr.** (1988) Lysogeny and Transformation of Mycobacteria: Stable Expression of Foreign Genes. *Proc. Natl. Acad. Sci., USA*. **85**:6987‑6991. PMCID: PMC282104.
266. **Jacobs, W.R., Jr., Tuckman, M. and Bloom, B.R.** (1987) Introduction of Foreign DNA into Mycobacteria Using a Shuttle Phasmid. *Nature* **327**:532‑536. PMCID: PMC in process.
267. **Jacobs, W.R., Jr., Docherty, M.A., Curtiss, R. III, and Clark‑Curtiss, J.E.** (1986) Expression of *Mycobacterium leprae* Genes from a Streptococcus mutans Promoter in *Escherichia coli* K‑12. *Proc. Natl. Acad. Sci. USA*. **83**:1926‑1930. PMCID: PMC323197.
268. **Jacobs, W.R., Jr., Barrett, J.F., Clark‑Curtiss, J.E. and Curtiss R. III**. (1986) *In vivo* Repackaging of Recombinant Cosmid Molecules for Analysis of *Salmonella typhimurium*, *Streptococcus mutans*, and Mycobacterial Genomic Libraries. *Infect. Immun*. **52**:101‑109.PMCID: PMC262204.
269. **Clark‑Curtiss, J.E., Jacobs, W.R., Jr., Docherty, M.A., Ritchie, L.R. and Curtiss, R. III.** (1985) Molecular Analysis of DNA and Construction of Genomic Libraries of *Mycobacterium leprae*. *J. Bacteriol*. **161**:1093‑1102. PMCID: PMC215012.

**BOOK CHAPTERS AND REVIEWS:**

1. **Siliciano, R.F., Goldberg, D.E., Jacobs, W.R. Jr.,** (2012).Outwitting Evolution-Fighting Drug Resistance in the Treatment of Tuberculosis Malaria, and HIV. *Cell* (accepted).
2. **Porcelli, S.A. and Jacobs, W.R., Jr.** (2008) Tuberculosis: Unsealing the Apoptotic Envelope. *Nat Immunol* **9**:1189-1197 Review.
3. **Vilchèze C and Jacobs WR Jr.** The Mechanism of Isoniazid Killing: Clarity Through the Scope of Genetics. Annu. Rev. Microbiol., 2007, 61:35-50.
4. **Vilchèze C and Jacobs WR Jr.** Isolation and Analysis of *Mycobacterium tuberculosis* Mycolic Acids. Current Protocols in Microbiology, 2007, 10A.3.1-11.
5. **Murillo, A.C., Li, H.Y., Albert, T., Baker, E.N., Berger, J.M., Cherney, L.T., Cherny, M.M., Cho, Y.S., Eisenberg, D., Garen, C.R., Goulding, C.W., Hung, L.W., Ioerger, T.R., Jacobs, W.R., James, M.N., Kim, C., Krieger, L., Lott, J.S., Sankaranarayanan, R., Segelke, B.W., Terwilliger, T.c., Wang, F., Sacchettini, J.C.** (2007) High Throughput Crystallography of TB Drug Targets. *Infect Disord Drug Targets* **7**:127-139.
6. **Larsen, M.H., Biermann, K., Tandberg, S., Hsu, T., Jacobs, W.R., Jr.** (2007) Genetic Manipulation of *Mycobacterium tuberculosis*. *Curr protoc microbial* **10:**Unit 10A 2.
7. **Larsen, M.H., Biermann, K., Jacobs, W.R., Jr**. (2007) Laboratory maintenance of *Mycobacterium tuberculosis*. *Curr Protoc Microbiol* **10:**Unit 10A 1.
8. **Larsen, M.H., Biermann, K., Jacobs, W.R., Jr.**, (2007) Analyses of *Mycobacterium tuberculosis* proteins. *Curr Protoc Microbiol* **10:** Unit10A4.
9. **Zhand, Y., Vilcheze, C., Jacobs, W.R. Jr.,** (2005) Mechanisms of Drug Resistance in *Mycobacterium tuberculosis.* ASM Press, Washington, DC. 8:115-140.
10. **Hingley-Wilson, S.M., Sambandamurthy, V.K. and Jacobs, W.R., Jr.** (2003) Survival Perspectives From the World’s Most Successful Pathogen, *Mycobacterium tuberculosis*. *Nat. Immunol.* **4**:949-955*.*
11. **Terwilliger, T.C., Park, M.S., Waldo, G.S., Berendzen, J., Hung, L.-W., Kim, C.-Y., Smith, C.V., Sacchettini, J.C., Bellinzoni, M., Bossi, R., De Ross, E., Mattevi, A., Milano, A., Riccardi, G., Rissi, M., Roberts, M.M., Coker, A.R., Fossati, G., Mascagni, P., Coates, A.R.M., Wood, S.P., Goulding, C.W., Apostol, M.I., Anderson, D.H., Gill, H.S., Eisenberg, D.S., Taneja, B., Mande, S., Pohl, E., Lamzin, V., Tucker, P., Wilmanns, M., Colovos, C., Meyer-Klaucke, W., Munro, A.W., McLean, K.J., Marshall, K.R., Leys, D., Yang, J.K., Yoon, H.-J., Lee, B.I., Lee, M.G., Kwak, J.E., Han, B.W., Lee, J.Y., Baek, S.-H., Suh, S.W., Komen, M.M., Arcus, V.L., Baker, E.N., Lott, J.S., Jacobs, W., Jr., Albert, T., Rupp, B.** (2003) The TB Structural Genomics Consortium: A Resource for *Mycobacterium tuberculosis* Biology. *Tuberculosis* **83**:223-24.
12. **Goulding, C.W., Apostol, M., Anderson, D.H., Gill, H.S., Smith, C.V., Kuo, M.R., Yang, J.K., Waldo, G.S., Suh, S.W., Chauhan, R., Kale, A., Bachhawat, N., Mande, S.C., Johnston, J.M., Lott, J.S., Baker, E.N., Arcus, V.L., Leys, D., McLean, K.J., Munro, A.W., Berendzen, J., Sharma, V., Park, M.S. Eisenberg, D., Sacchettini, J., Alber, T., Rupp, B., Jacobs, W., Jr., Terwilliger, T.C.** (2002) The TB Structural Genomics Consortium: Providing a Structural Foundation for Drug Discovery. Curr. Drug Targets Infec. Disord. **2**:121-141.
13. **Braunstein, M., Bardarov, S.S. and Jacobs, W.R., Jr.** (2002) Genetic Methods for Deciphering Virulence Determinants of *Mycobacterium tuberculosis*, in Methods in Enzymology, P.M. Bavoil (ed.) Academic Press, London, England, 358:67-99.
14. **Glickman, M.S. and Jacobs, W.R. Jr.** (2001) Microbial Pathogenesis of *Mycobacterium tuberculosis*: Dawn of a Discipline. (Review) Cell 104:477-485.
15. **Riska, P.F., Jacobs, W.R. Jr., and Alland, D.** (2000) Molecular determinants of drug resistance in tuberculosis. Int. J.Tuberc Lung Dis Feb; 4(2 Suppl 1):S4-10.
16. **Jacobs, W.R. Jr.** (2000) *Mycobacterium tuberculosis*: a Once Genetically Intractable Organism in Molecular Genetics of Mycobacteria, G.F. Hatfull and W.R. Jacobs, Jr. (eds). ASM Press, Washington, DC., pp. 1-16.
17. **McKinney, J.D., W.R. Jacobs, Jr. and B.R. Bloom.** (1998) Persisting Problems in Tuberculosis. In: Fauci and R. Krause (eds.) Emerging Infections. Academic Press, London. pp. 51-146.
18. **Riska, P.F. and W.R. Jacobs, Jr.** (1998) The Use of Luciferase Reporter Phage for Antibiotic Susceptibility Testing of Mycobacteria. In: T. Parish and N.G. Stoker (eds.) Methods in Molecular Biology: Mycobacteria Protocols. Humana Press Inc., Totowa, NJ. 101:431-455.
19. **Miesel, L., Rozwarski, D.A., Sacchettini, J.C. and Jacobs, W.R. Jr.** (1998) Mechanisms for Isoniazid Action and Resistance. In: D.J. Chadwick and G. Cardew (eds.) Genetics & Tuberculosis. John Wiley & Sons Ltd., West Sussex England pp. 209-220.
20. **Fennelly, G.J., W.R. Jacobs, Jr., Bloom, B.R.** (1997) BCG as a Recombinant Vaccine Vector. In: M.M. Levine, G.C. Woodrow, J.B. Kaper and G.S. Cobon (eds) New Generation Vaccines, Second Edition. Marcel Dekker, Inc., New York. pp. 363-377.
21. **Jacobs, W.R. Jr.** (1996) Science for Combating Tuberculosis. Bulletin of the New York Academy of Medicine. 73:46-52.
22. **Cirillo JD, Stover, C.K., Bloom, B.R., Jacobs, W.R., Jr., Barletta, R.G.** (1995) Bacterial Vaccine Vectors and Bacillus Calmette-Guerin. Clin. Infect. Dis. 20:1001-1009. (Review).
23. **Hatfull, G.F. and W.R. Jacobs, Jr.** (1994) Mycobacteriophages: Cornerstones of Mycobacterial Research. In: Tuberculosis, Pathogenesis, Protection, and Control. B.R. Bloom (ed.) American Society for Microbiology Press, Washington, D.C. pp. 165-183.
24. **Jacobs, W.R. Jr. and B.R. Bloom.** (1994) Molecular Strategies for Identifying Virulence Determinants of *Mycobacterium tuberculosis*. In: Tuberculosis, Pathogenesis, Protection, and Control. B.R. Bloom (ed.) American Society for Microbiology Press, Washington, D.C. pp. 253-268.
25. **Bloom, B.R., Jacobs, W.R., Jr., Clark-Curtiss, J.E.** (1994) Leprosy Vaccine. Nature 368:579.
26. **Spitznagel, J.K. and W.R. Jacobs, Jr.** (1993) *Mycobacteria: Tuberculosis* and Leprosy, p. 316-333. In M. Schaechter, G. Medoff, and B.I. Eisenstein. (eds.) Mechanisms of Microbial Disease. Williams & Wilkins, Baltimore, MD.
27. **Ellner, J.J., Hinman, A.R., Dooley, S.W., Fischl, M.A., Sepkowitz, K.A., Goldberger, M.J., Schinnick, T.M., Iseman, M.D. and W.R. Jacobs, Jr.**  (1993) Tuberculosis Symposium: Emerging Problems and Promise. J. Infec. Dis. 168:537-551.
28. **Jacobs, W.R. Jr.** (1992) Advances in Mycobacterial Genetics: New Promises for Old Diseases. Immunobiology 184:147-156.
29. **Connell, N., C.K. Stover, and W.R. Jacobs, Jr.** (1992) Old Microbes with New Faces: Molecular Biology and Design of New Vaccines. Curr. Opinion Immunol. 4:442-448.
30. **Stover, C.K., de la Cruz, VF, Bansal, G.P., Hanson, M.S., Fuerst, T.R., Jacobs, W.R., Jr., Bloom, B.R.** (1992) Use of Recombinant BCG as a Vaccine Delivery Vehicle. Adv. Exp. Med. Biol. 327:175-182. (Review).
31. **Jacobs, W.R. Jr., S.B. Snapper, L. Lugosi, and B.R. Bloom.** (1990) Development of BCG as a Recombinant Vaccine Vector. Curr. Top. Microbiol. Immunol. 155:153-160. (Review).
32. **Mehra,V., P. Salgame, S.B. Snapper, L. Lugosi, W.R. Jacobs Jr., and B.R. Bloom.** (1990) Vaccines Against Leprosy. pp. 611‑629. In: Woodrow,G.C. and M.M. Levine (eds.) New Generation Vaccines. Marcel Dekker, New York.
33. **Jacobs, W.R., Jr., S.B. Snapper, M. Tuckman, and B.R. Bloom.** (1989) Mycobacteriophage Vector Systems. Rev. Infect. Dis. 11(Suppl. 2):404‑410.
34. **Mehra,V., R.L. Modlin, T.H. Rea, W.R. Jacobs Jr., S.B. Snapper, J. Convit, and B.R. Bloom.** (1989) Molecular Approaches to Developing a Vaccine for Leprosy. pp. 335‑346. In: G.P. Talwar (ed.) Progress in Vaccinology. Springer Verlag, New York.
35. **Jacobs, W.R. Jr., S.B. Snapper, L. Lugosi, A. Jekkel, R.E. Melton, T. Kieser, and B.R. Bloom.** (1989) Development of genetic systems for the mycobacteria. Acta Leprol. 7(Suppl. 1):203‑207. (Review).
36. **Bloom, B.R. and W.R. Jacobs Jr.** (1989) New Strategies for Leprosy and Tuberculosis and for the Development of BCG into a Multivaccine Vehicle. Ann. NY Acad. Sci. 1989; 569:155-173. (Review)
37. **Jacobs, W.R. Jr.** (1992) Advances in Mycobacterial Genetics: New Promises for Old Diseases. Immunobiology 184:147-156.
38. **Connell, N., C.K. Stover, and W.R. Jacobs, Jr.** (1992) Old Microbes with New Faces: Molecular Biology and Design of New Vaccines. Curr. Opinion Immunol. 4:442-448.
39. **Stover, C.K., de la Cruz, VF, Bansal, G.P., Hanson, M.S., Fuerst, T.R., Jacobs, W.R., Jr., Bloom, B.R.** (1992) Use of Recombinant BCG as a Vaccine Delivery Vehicle. Adv. Exp. Med. Biol. 327:175-182. (Review).
40. **Jacobs, W.R. Jr., G.V. Kalpana, J.D. Cirillo, L. Pascopella, R.A. Udani, W.D., Jones, Jr., R.G. Barletta, and B.R. Bloom.** (1991) Genetic Systems for the Mycobacteria. In: Miller, J. (ed.) Method. Enzymol., Vol. 204:537-555.
41. **Jacobs, W.R. Jr., G.V. Kalpana, J.D. Cirillo, L. Pascopella, R.A. Udani, W.D., Jones ,Jr., R.G. Barletta, and B.R. Bloom.** (1991) Genetic Systems for the Mycobacteria. In: Miller, J. (ed.) Method. Enzymol., Vol. 204:537-555.
42. **Jacobs, W.R. Jr., G.V. Kalpana, J.D. Cirillo, L. Pascopella, R.A. Udani, W.D., Jones, Jr., R.G. Barletta, and B.R. Bloom.** (1991) Genetic Systems for the Mycobacteria. In: Miller, J. (ed.) Method. Enzymol., Vol. 204:537-555.
43. **Bloom, B.R., S.B. Snapper, T. Kieser and W.R. Jacobs, Jr.** (1990) Development of Recombinant BCG Vaccines pp. 21-30. In: Brown, F. (ed.) Seminars in Virology. W.B. Saunders, London.
44. **Snapper, S.B., B.R. Bloom, and W.R. Jacobs Jr.** (1990) Molecular Genetic Approaches to Mycobacterial Investigations. pp. 199‑218. In: McFadden, J.J. (ed.) Molecular Biology of the Mycobacteria. Academic Press, London.
45. **Jacobs, W.R., Jr., S.B. Snapper, and B.R. Bloom.** (1988) Beyond BCG: Developing a Recombinant BCG Multivaccine Vehicle. In: M. Schwarz (ed.) Molecular Biology and Infectious Diseases. Elsevier, New York, pp. 207‑212.

**EDITOR:**

1. **Cole, S.T., Eisenach, K.D., McMurray, D.N. and Jacobs, W.R. Jr**. (editors) Tuberculosis and the Tubercle Bacillus. 2005 ASM Press, Washington, DC.
2. **Hatfull, G.F. and Jacobs, W.R. Jr**. (editors) Molecular Genetics of Mycobacteria. 2000 ASM Press, Washington, D.C.

**PATENTS ISSUED:**

Recombinant Mycobacterial Vaccines. B. Bloom, W. Jacobs, Jr., R. Young, R. Davis, R. Husson,. U.S. Patent No. 5,504.005, Issue Date: April 2, 1996.

Antimycobacterial Compounds and Method of Using Same. W. Jacobs, Jr., J.Blanchard, J. Sacchettini. U.S. Patent No. 5,648,392, Issue Date: July 15, 1997.

Identification of *Mycobacterium tuberculosis* Complex Species. B. Bloom, S. Jurgensen, M. Little, P. Hamilton, P. Riska, J. Chan. U.S. Patent No. 5,656,424, Issue Date: August 12, 1997.

Recombinant Mycobacterial Expression Vehicles and Uses Thereof. B. Bloom, W. Jacobs, Jr., R. Young, R. Davis, R. Husson. Canadian Patent No. 1,339,526, Issue Date: November 4, 1997.

Vectors and Prokaryotes Which Autocatalytically Delete Antibiotic Resistance. W. Jacobs, Jr., S. Haun, M., Hanson, C., Stover, G. Hatfull. U.S. Patent No. 5,736,367, Issue Date: April 7, 1998.

D29 Shuttle Phasmids and Uses Thereof. W. Jacobs, Jr., G. Hatfull. U.S. Patent No. 5,773,267, Issue Date: June 30, 1998.

Method and Compounds for Inhibiting Lipid Biosynthesis of Bacteria and Plants. W. Jacobs, Jr., J. Blanchard, J. Sacchettini. U.S. Patent No. 5,702,935, Issue Date: December 30, 1997, Issue. U.S. Patent No. 5,837,480, Issue Date: November 17, 1998.

Methods and Compositions for Detecting and Treating Mycobacterial Infections Using an INHA Gene. W. Jacobs, A. Banerjee, D. Collins, W. DeLisle, T. Wilson. U.S. Patent No. 5,686,590, Issue Date: 11/11/97. Australian Patent No. 690121, Issue Date: August 6, 1998.

Antimycobacterial Compounds and Method of Using Same. W. Jacobs, Jr., J. Blanchard, J. Sacchettini, R. Bittman. U.S. Patent No. 5,837,732, Issue Date: November 17, 1998.

Mycobacteriophages and Uses Thereof. B. Bloom, W. Jacobs, Jr., R. Davis, R. Young, R. Husson. U.S. Patent No. 5,854,055, Issue Date: December 29, 1998.

Mycobacteriophages and Uses Thereof. B. Bloom, W. Jacobs, Jr., R. Davis, R. Young, R. Husson. U.S. Patent 5,968,733, Issue Date: October 19, 1999.

TM4 Conditional Shuttle Phasmids and Uses Thereof. W. Jacobs, Jr., S. Bardarov, G. Hatfull. U.S. Patent No. 5,972,700, Issue Date: October 26, 1999.

Vector Constructs for the Selection and Identification of Open Reading Frames. W. Jacobs, Jr., S. Daugelat. U.S. Patent No. 5,981,182, Issue Date: November 9, 1999.

L5 Shuttle Phasmids, W. Jacobs, Jr., G. Hatfull, S. Bardarov, R. McAdam. U.S. Patent No. 5,750,384, Issue Date: May 12, 1998. U.S. Patent No. 5,994,137, Issue

Date: November 30, 1999.

An EMBCAB Operon of Mycobacteria and Mutations Thereof. W. Jacobs, Jr., J. Musser, A. Telenti. U.S. Patent No. 6,015,890, Issue Date: January 18, 2000.

Recombinant Mycobacterial Auxotrophic for Diaminopimelate. W. Jacobs, Jr., M. Pavelka. U.S. Patent No.6,221,364, B1. Issue Date: April 24, 2001.

Recombinant Mycobacteria Auxotrophic for Diaminopimelate, M.S. Pavelka, Jr., W.R.Jacobs, Jr.. U.S. Patent No. 6,221,364 B1. Issue Date: March 13, 2003.

Mycobacterial Mutants affecting Host apoptosis, W. Jacobs, Jr., S.A.Porcelli, V. Briken, M. Braunstein. U.S. Patent No. 60/643,614, Issue Date: January 12, 2005.

Methods for Determining Chemotherapeutic Agents Targeting Alpha-Glucan Pathways and uses Thereof, W. Jacobs, Jr., R. Kalscheuer, S. Bornemann, K. Syson. U.S. Patent No. 96700/1659, Issue Date: October 26, 2010.

Attenuated Mycobacteria as Vectors for Gene Delivery for Mammalian Cells, W. Jacobs, Jr., Fennelly, G. U.S. Patent No. 7,939,089 B2, Issue Date: May 10, 2011.

Mycobacteria Expressing HIV-1 and malaria Antigens, W. Jacobs,Jr., N. Letvin, M. Cayabyab, B. Haynes, HX. Liao, JS. Yu and AH. Hovav. Patent No. 7,998,471 B2. Issue Date August 16, 2011.

Recombinant Mycobacteriophages for Delivery of Nucleic Acids of Interest into Mycobacteria, W.R. Jacobs, Jr. and G.Hatfull, No. 61 550,094. Issue Date: October 21, 2011.

Mycobacterial Seca2 Mutants, W.R. Jacobs,S.A. Porcelli, M. Braunstein, No. 8,101,191,B2 Issue Date: January 24, 2012.

Mycobacterial Mutants Affecting Host apoptosis, W.R. Jacobs, S.A. Porcelli, V. Briken, M.Braunstein, No. 8394388 B2, Issued March 12, 2013..

Mycobacterial Seca 2 Mutants, W. Jacobs, S.A. Porcelli, M. Braunstein, No. 200780007413.0 Issue Date: June 12, 2013.

**INVITED LECTURES:**

March 1988 Joint Meeting of World Health Organization & Govt. of India on

Leprosy, Karigiri, India

September 1988 Fourth International Colloquium on the Mycobacteria, State of the Art

Lecture, Institut Paris, Paris France

May 1989 ASM Meeting, Convener and Speaker, Mycobacterial Genetics, New

Orleans, LA

May 1989 TransGene/Institut Merieux, Symposium on Vaccines of the Future, Annecy, France

July 1989 Keystone Symposium on Microbial Pathogenesis, Vail, CO

March 1990 WHO/Germany Meeting on Advances on Novel Vaccine Approaches, Ulm, Germany

October 1990 Frontiers in Mycobacteriology: Immunobiology of Mycobacterial Infections, Vale, CO

May 1991 ASM Meeting, Dallas, TX Convener of Mycobacterial Genetics Symposium

February 1992 Joint Meeting of WHO & Govt. of Spain: Working Towards New and Improved Vaccines, Madrid, Spain

September 1992 Smith-Kline Beecham Anti-Infectives Conference, Tuscon, AZ

October 1992 Infectious Disease Society Meeting, Los Angeles, CA

November 1992 First World Congress on Tuberculosis, Plenary Lecture, Washington, DC

February 1993 Microbial Pathogenesis Club, Boston, MA

March 1993 Microbial Pathogenesis Course, Rockefeller University

April 1993 Meharry Medical College, Recent Advances in the Immunobiology and Biochemistry of Tropical Diseases, Nashville, TN

May 1993 Recombinant Vectors in Vaccine Development, Albany, NY

May 1993 American Thoracic Society's Annual Meeting, Convener and Speaker, Los Angeles, CA

May 1993 American Society for Microbiology, Convener and Speaker for two Sessions - Multi-Drug Resistant Tuberculosis, Mycobacterial Genetics, Atlanta, GA

May 1993 Symposium dedicating the opening of the Microbiology and Immunology Research Facility, Emerging Pathogens, University of Alabama at Birmingham, Birmingham, AL

June 1993 American Society of Clinical Laboratory Microbiologists, New Haven, CT

July 1993 Second International Conference on Mycobacterial Pathogenesis, Stockholm, Sweden

July 1993 Roussel Round Table Conference on Drug Resistance, Versailles, France

July 1993 Gordon Conference on Microbial Populations and Evolution, Colby Sawyer College

August 1993 Science INNOVATION Conference, Boston, MA

September 1993 Molecular Mechanisms of Drug Resistance, Albany, NY

October 1993 ICAAC Meeting, Convener and Speaker on Session on Multi-Drug-Resistant Tuberculosis, New Orleans, LA

May 1994 American Society of Microbiologists Annual Meeting, Las Vegas, NV, Invited Speaker for two Symposia; Intracellular Growth of Mycobacteria and Uses of Luciferase.

August 1994 Molecular Biology of Phage and Bacteria, Chair and Speaker in Bacterial Surfaces Symposium, Madison, WI

September 1994 Annual Meeting of the Laboratory of Tumor Cell Biology, National Institutes of Health, Spoke on the MDR-TB at the AIDS Conference

October 1994 ICCAC and IDSA, Speaker in Drug Resistance Symposium, Orlando, FL

February 1995 Keystone Meeting - Tuberculosis - Tammarron, CO Symposium speaker on Molecular Genetics of Mycobacteria

May 1995 American Society of Microbiology Annual Meeting, Washington, DC. Convener and Speaker in Symposium on Molecular Analysis of Mycobacterial Pathogenesis and Speaker in Symposium on Uses of Phages in Diverse Bacteria

June 1995 Child Health 2000, World Conference of Pediatricians, Speaker on Symposium on Drug-Resistant Pathogens, Vancouver, Canada

August 1995 Advanced Bacterial Genetics Course, Cold Spring Harbor, Speaker

November 1995 Institute of Medicine and New York Academy of Science Joint Symposium - Inside Urban Health , New York, NY; Science for Combating Tuberculosis

March 1996 Keystone Meeting on Drug Resistance, Mechanisms of Isoniazid Resistance, Vail, CO

May 1996 Herman C. Lichstein Symposium, Cincinnati, Ohio - Speaker on Tuberculosis Control: Beyond Isoniazid and BCG

June 1996 13th International Convocation on Immunology, Buffalo, New York-Speaker on Molecular Strategies for Identifying Genes of *M. tuberculosis*

July 1996 Microbial Ecology & Infectious Disease Conference, Bethesda, MD

September 1996 Infectious Diseases Society of America, New Orleans, LA

September 1996 World Health Organization, Genetic Systems for Mycobacteria, Geneva, Switzerland

October 1996 New York Biotechnology Association’s New Science in NY Symposium; Beyond BCG: The New Tuberculosis Vaccine

October 1996 Vaccines 2000; Challenge for a New Tuberculosis Vaccine

December 1996 Ernst A.H. Friedheim Memorial Lecture; Tuberculosis Control: Beyond Isoniazid & BCG, Rockefeller University, NY

March 1997 Center for Tropical Diseases/WHO Collaborating Center; University of Texas Medical Branch; Tuberculosis Control: Beyond Isoniazid and BCG

April 1997 Uniformed Services University of Health Sciences; Guest Lecturer and Seminar Speaker on Pathogenic Mechanisms

April 1997 Temple University, Philadelphia, PA; 1997 Philadelphia Infection & Immunity Forum; Tuberculosis Control: Beyond Isoniazid and BCG

April 1997 National Institutes of Health; National Cooperative Drug Discovery Groups for Opportunistic Infections Focus on Mycobacteria

May 1997 National Vaccine Advisory Committee “TB Vaccines – Barriers & Opportunities Speaker on Vaccine Options

May 1997 Whitehead Institute/Museum of Science Biomedical Series. “Emerging Plagues: The Evolution of Tomorrow’s Epidemics”

July 1997 Chair of American Society of Microbiology-sponsored meeting, “Tuberculosis: Past, Present & Future” held in Copper Mountain, Colorado; July 8-12, 1997

September 1997 Keynote Speaker at Microbial Pathogenesis & Host Response Meeting, Cold Spring Harbor Laboratory, Cold Spring, New York

October 1997 Tuberculosis in Africa - The Promise of Scientific Advances; International Conference on Scientific Advances in Tuberculosis, Kampala, Uganda

December 1997 Freidheim Memorial Lecture; Rockefeller University, NY

January 1998 Hooper Memorial Lecture Seminar, University of California at San

Francisco

February 1998 The 19th Annual Darwin Festival; Controlling Multi-Drug Resistant Tuberculosis: Finding Gold in Soil and Cow Dung. Salem State College

March 1998 Keystone Symposium on TB: Molecular Mechanisms and Immunologic Aspects; Keystone, Colorado

March 1998 International Glaxo Wellcome Action TB Conference 1998; Cape Town, South Africa

June 1998 48th Annual Meeting of the Canadian Society of Microbiologists; University of Guelph, Ontario

August 1998 1998 International Symposium On TB Vaccines; San Francisco

October 1998 Life Sciences Symposium; Dartmouth Medical School

November 1998 The University of Texas-Houston Medical School Seminar Series

January 1999 “New and Emerging Therapies: Cancer Vaccine Biology” Speaker at

Cancer Center Retreat, Briarcliff, NY.

February 1999 “New Drugs and Vaccines for Tuberculosis: Lessons from Isoniazid” Seminar at Glaxo Wellcome, London.

February 1999 “Combating Multi-Drug Resistant Tuberculosis: The New York City Lotto Paradigm: Seminars at Columbia University and Yale Universtiy.

July 1999 “Approaches for Development of New More Efficient Vaccines” – Fourth International Conference on the Pathogenesis of Mycobacterial Infections, Stockholm, Sweden

September 1999 “New Tools to Enhance Expression for Foreign Genes in BCG and How They Might be Used to Develop Vaccines for Diseases such as HIV and Malaria” - Twelfth Meeting of the Steering Committee on New Vaccination Approaches, WHO Headquarters, Geneva, Switzerland

October 1999 “Lipid Metabolism: A Life and Death Struggle for the Tubercle Bacillus” - Discovery Research Meeting sponsored by Wyeth-Lederle Laboratories, Lake George, New York

January 2000 Guest Lecturer, Department of Microbiology and Immunology - “Lipid Metabolism: The Life and Death Struggle of the Tubercle Bacilli,” Uniformed Services University of the Health Sciences, Bethesda, Maryland.

February 2000 Course Lecturer: Molecular Basis of Microbial Pathogenesis, College of Physicians and Surgeons, Columbia University, New York, NY.

February 2000 Grybowski Lecture - Tuberculosis: Moving from Control to Elimination. Obstacles and Opportunities - A Program of the International Union Against Tuberculosis and Lung Disease, North American Region. Sheraton Wall Centre Hotel, Vancouver, BC

March 2000 Invited Lecturer, New York University Medical Center, New York, NY.

March 2000 Invited Lecturer, The Catholic University, Washington, DC.

May 2000 Invited Speaker and Convener: ASM 100th General Meeting – “*Mycobacterium tuberculosis* and Its Interaction with Its Environment”, Los Angeles, CA.

June 2000 Advanced Bacterial Genetics Course Lecturer - “The Power of Bacterial Genetics: A 1914-D Penny, Lotto, Tuberculosis Control and Beyond” Cold Spring Harbor Laboratories, Cold Spring Harbor, New York.

August 2000 Third International Conference on Mycobacterium bovis - TB Vaccine Development, St. John’s College, Cambridge, United Kingdom

August 2000 The Nobel Symposium No. 114. - “Prevention and Treatment of Tuberculosis in the Coming Century”, Karolinska Institutet, Stockholm, Sweden.

October 2000 Distinguished Lecture Series - “The Mechanism of Action of Isoniazid in *Mycobacterium tuberculosis*: Implications for tuberculosis and Malaria,” Harvard School of Public Health, Boston, Massachusetts.

October 2000 Guest Lecturer, Department of Microbiology and Immunology, “Tuberculosis and Its Emergence As A Global Health Emergency” –Uniformed Services University of the Health Sciences, Bethesda, Maryland.

November 2000 Guest Lecturer, Department of Microbiology and Molecular Genetics -“Molecular Genetic Approaches To Control Multi-Drug Resistant Tuberculosis,” University of Medicine and Dentistry of New Jersey, Newark, NJ.

December 2000 Invited Speaker: Workshop on Molecular Approaches to Tuberculosis, “Mycobacterial Genetics and Mycobacteriophages,”Instituto Juan March de Estudios e Investigaciones, Madrid, Spain.

January 2001 Invited Speaker: Rockefeller University - Infectious Disease Centennial Lecture: “Mycolic Acids of *Mycobacterium tuberculosis*: An Achilles Heel or a Neutralizing Weapon?” Rockefeller University, New York, NY

January 2001 Invited Speaker: Keystone Symposia - Molecular and Cellular Aspects of Tuberculosis in the Post Genome Era. “Molecular Approaches to Vaccine Development, and Session Leader: “Vaccine Development and Testing”, Taos, New Mexico.

March 2001 Invited Speaker: Department of Microbiology, “Mycolic Acids of *Mycobacterium tuberculosis*: An Achilles Heel or a Neutralizing Weapon?” - University of Illinois at Urbana-Champaign, Illinois.

March 2001 Invited Speaker:“Frontiers in Biology” - Sponsored by the Center for Infectious Diseases, Mycolic Acids of *Mycobacterium tuberculosis*: An Achilles Heel or a Neutralizing Weapon?” - SUNY, Stony Brook, Stony Brook, New York.

April 2001 Invited Speaker: “Gateway to the Immune System: T Cell Receptor Recognition of Peptide MHC Complexes” - The Trudeau Institute, Saranac Lake, New York

August 2001 Invited Speaker: “The Streptomyces Influence on Mycobacterial Genetics: Finding Gold in Soil and Zebra Dung” – ISBA Meeting, Vancouver, BC, Canada

February 2002 Invited Speaker: “TB Vaccines: The Genetic Basis of BCG Attenuation and How to Improve It”. Molecular Genetics Seminar Series, Princeton University, Princeton, New Jersey.

February 2002 Invited Speaker: “Exploiting *M. tuberculosis* Metabolism: The Mechanism of Bacteriocidal Action of Isoniazid,” University of Alabama, Birmingham, Birmingham, Alabama.

March 2002 Invited Speaker: “TB Vaccines: Understanding the Past to Improve the Future”. David Axelrod Institute for Public Health, Albany, New York.

April 2002 Invited Speaker: “Tuberculosis Vaccines: Understanding BCG and What is Needed to Make a Better TB Vaccine”. Committee on Microbiology Seminar Series, University of Chicago, Chicago, Illinois.

May 2002 Invited Speaker: “Tuberculosis Vaccines,” The Anderson Symposium: Plagues of the 21st Century: HIV, Viral Hepatitis, Tuberculosis and Malaria, University of Virginia, Charlottesville, Virginia.

June 2002 Invited Speaker: “Advances in Molecular Genetics,” 4th World Congress on Tuberculosis, Washington, DC.

July 2002 Invited Speaker: “Unmasking the Lifestyle of the World’s Most Effective Pathogen*: M. tuberculosis*.” Yerkes Center at Emory University, Atlanta, Georgia

November 2002 Invited Speaker: “Unmasking the Lifestyle of the World’s Most Effective Pathogen: *Mycobacterium tuberculosis*.” International Symposium in Commemoration of the 159th Birthday of Dr. Shibasaburo Kitasato, 7th Robert Koch Institute-Kitasato Institute Joint Symposium for Overcoming Infectious Diseases. Kitasato Institute, Tokyo, Japan.

December 2002 Invited Speaker: “Unmasking the Lifestyle of the World’s Most Effective Pathogen: *M. tuberculosis*.” University of Pennsylvania, Philadelphia, Pennsylvania.

February 2003 Invited Speaker: “A 2003 Pathogen Survival Guide: Perspectives from the World’s Most Effective Pathogen, *Mycobacterium tuberculosis*.” Tufts University, Boston, Massachusetts.

February 2003 Invited Speaker: “A 2003 Pathogen Survival Guide: Perspectives from the Word’s Most Effective Pathogen, *Mycobacterium tuberculosis*.” Johns Hopkins, Baltimore, Maryland.

March 2003 Invited Speaker: “A 2003 Pathogen Survival Guide: Perspectives from the World’s Most Effective Pathogen, *Mycobacterium tuberculosis*.” University of California at Los Angeles, Los Angeles, California.

April 2003 Invited Speaker: “A 2003 Pathogen Survival Guide: Perspectives from the World’s Most Effective Pathogen, *Mycobacterium tuberculosis*.” Cornell University, New York, New York.

September 2003 Invited Speaker: “Evaluation of a *Mycobacterium tuberculosis* *ΔleuD/*

*ΔpanCD* Auxotrophic vaccine candidate,” First International Conference on TB Vaccines for the World, Montreal, Canada.

October 2003 Invited Speaker: “A 2003 Pathogen Survival Guide: Perspectives from the World’s Most Effective Pathogen, *Mycobacterium tuberculosis*.” Mount Sinai Medical Center, New York, New York.

November 2003 Invited Speaker: “A 2003 Pathogen Survival Guide: Perspectives from the World’s Most Effective Pathogen, *Mycobacterium tuberculosis*.” Harvard Medical School, Boston, Massachusetts.

March 2004 Invited Speaker:  The 2004 Pathogens Survival guide:  Perspectives from the Worlds Most Successful Pathogen  *Mycobacterium tuberculosis*  Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma.

March 2004 Invited Speaker:  *Mycobacterium tuberculosis*.  Vaccines Symposium In Honor of Professor Ruth S. Nussenzweig on the Occasion of Her Retirement as Chair of Parasitology.  New York University School of Medicine, New York, New York.

March 2004 Invited speaker:  The Mechanisms of Bacteriocidal Action of Isoniazid on *Mycobacterium tuberculosis*.  Strategic Research Institute.  Cherry Hill, New Jersey.

April 2004 Invited Speaker:  Novel  Strategies for Vaccine Protection Against *M. tuberculosis*.   2004 Keystone Symposium, Whistler, British Columbia, Canada.

April 2003 Invited Speaker: “A 2003 Pathogen Survival Guide: Perspectives from the World’s Most Effective Pathogen, *Mycobacterium tuberculosis*.” Cornell University, New York, New York.

March 2004 Invited Speaker:  The 2004 Pathogens Survival guide:  Perspectives from the Worlds Most Successful Pathogen  *Mycobacterium tuberculosis*  Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma.

March 2004 Invited Speaker:  *Mycobacterium tuberculosis*.  Vaccines Symposium In Honor of Professor Ruth S. Nussenzweig on the Occasion of Her Retirement as Chair of Parasitology.  New York University School of Medicine, New York, New York.

March 2004 Invited speaker:  The Mechanisms of Bacteriocidal Action of Isoniazid on *Mycobacterium tuberculosis*.  Strategic Research Institute.  Cherry Hill, New Jersey.

April 2004 Invited Speaker:  Novel  Strategies for Vaccine Protection Against *M. tuberculosis*.   2004 Keystone Symposium, Whistler, British Columbia, Canada.

April 2004 Invited Speaker: Mycobacterial Vaccines for West Nile Virus and SARS. 10th National Symposium: Basic Aspects of Vaccines, Walter Reed Army Institute of Research, Silver Spring, Maryland.

May 2004 Invited Speaker: Rediscovering Metabolism through the:Drug Isoniazid, ASM Integrating Metabolism and Genomics (IMAGE), Montreal, Quebec.

May 2004 Invited Speaker: The 2004 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen, *Mycobacterium tuberculosis*. . University of North Carolina, Chapel Hill, North Carolina.

May 2004 Invited Speaker: 2004 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen, *Mycobacterium tuberculosis.* Medicine Grand Rounds, Vanderbilt University, Nashville, TN.

July 2004 Invited Speaker: The 2004 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen, *Mycobacterium tuberculosis*. Astrazeneca, Bangalore, India.

July 2004 Invited Speaker: Rediscovering Metabolism: The Mechanism of Action of Isoniazid. Tuberculosis Research Centre, Chennai, India.

September 2004 Invited Speaker: The 2004 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen, *Mycobacterium tuberculosis*. University of Notre Dame, Notre Dame, Indiana.

October 2004 Invited Speaker: The 2004 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen: *Mycobacterium tuberculosis*. ASM and Waksman Foundation for Microbiology. Bowling Green, Kentucky.

November 2004 Invited Speaker: The 2004 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen: *Mycobacterium tuberculosis*.   
44th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Washington, D.C.

November 2004 Invited Speaker: New Strategies for TB Vaccine Development: Duke University Human Translational Immunology Center Review and Symposium, Durham, North Carolina.

November 2004 Invited Speaker: The 2004 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen: *Mycobacterium tuberculosis*. NYSDOH, Wadsworth Center Division of Genetic Disorders, Albany, NY.

January 2005 Invited Speaker: The 2005 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen: *Mycobacterium tuberculosis.* Grand Rounds, The Children’s Hospital at Montefiore, Bronx, NY.

January 2005 Invited Speaker: The 2005 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen: *Mycobacterium tuberculosis.* Tulane National Primate Research Center, Covington, Louisiana.

January 2005 Invited Speaker: Increasing the Immunogenicity of Recombinant Mycobacterial Vaccines. Vaccine Platforms, Northeast Biodefense Center, Mount Sinai Medical Center, New York City.

February 2005 Invited Speaker: Strategies to Generate Recombinant Mycobacterial Vaccines for TB, Malaria and HIV. New York Academy of Sciences, New York City.

February 2005 Invited Speaker: Symposium entitled: The Good, The Bad and the Ugly. AAAS Annual Meeting, Washington, DC.

February 2005 Invited Speaker: The 2005 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen, *Mycobacterium tuberculosis*. North Shore LIJ Institute for Medical Research, Manhasset, NY.

April 2005 Invited Speaker: The 2005 Pathogens Survival Guide: Perspectives from the World’s Most Successful Pathogen, *Mycobacterium tuberculosis.* New York Medical Center, Valhalla, New York.

June 2005 Invited Speaker: Strategies to Increase Immunogenicity in Live Tuberculosis Vaccines. ASM 105th General Meeting, Atlanta, Georgia.

June 2005 Invited Speaker: The Exported Weapons Arsenal of *Mycobacterium tuberculosis.* HHMI International Research Scholars Meeting, Merida, Mexico.

July 2005 Invited Speaker: Isoniazid Mechanism of Action: What We Know and What We Do Not Know. Tuberculosis Drug Development GRC Conference at the University of New England. Biddeford, Maine.

July 2005 Invited Speaker: Functional Genomics of Mycobacteria. IUMS Meeting. San Francisco, California

September 2005 Invited Speaker: Viable Vaccines and Vaccine Carriers, Part 1. New Approaches to Vaccine Development. Berlin, Germany.

September 2005 Invited Speaker: A 2005 Pathogen Survival Guide: Perspective from the World’s Most Effective pathogen, *Mycobacterium tuberculosis.* University of Michigan. Ann Harbor, Michigan.

October 2005 Invited Speaker: From Genetics to the Molecular Mechanism of Action of Isoniazid. Drexel University College of Medicine. Philadelphia, Pennsylvania.

October 2005 Invited Speaker: Generation of a Safe Live Attenuated *Mycobacterium tuberculosis* Vaccine with Enhanced Immunogenicity. 36th Union World Conference. Paris, France.

November 2005 Invited Speaker: How Does *Mycobacterium tuberculosis* Evade Innate and Adaptive Immune Responses? Host Pathogen Interaction and Human Disease Meeting Hosted by *Cell*, Welcome Trust and MA General Hospital. Cambridgeshire, England.

January 2006 Invited Speaker: Tuberculosis Drugs, Past, Present, and Future. Vertex Pharmaceuticals. Cambridge, Massachusetts.

April 2006 Invited Speaker. Tuberculosis: Past, Present and Future. Trinity College, Hartford, Connecticut.

June 2006 Invited Speaker. The 2006 Pathogen’s Survival Guide: Perspectives from the World’s Most Successful Pathogen, *Mycobacterium tuberculosis.* Tulane University, Covington, Louisiana.

June 2006 Invited Speaker. Fulfilling Koch’s Corollary for *Mycobacterium tuberculosis*. Cold Spring Harbor Laboratory. Cold Spring Harbor, New York.

June 2006 Invited Speaker. The five Unassailable Truths of Bacterial Genetics: Elucidating the Mechanism of Action of Isoniazid on *Mycobacterium tuberculosis*. Cold Spring Harbor Laboratory. Cold Spring Harbor, New York.

June 2006 Invited Speaker. Mycobacteriophages: The Key to Fulfilling Koch’s Corollary for *Mycobacterium tuberculosis*. 2006 NIAID Research Conference. Opatija, Croatia.

July 2006 Invited Speaker. Mycobacteriophages: Their Uses in dispelling the Vampire Hypothesis of Tuberculosis. University of Pittsburgh, Pittsburgh, Pennsylvania.

August 2006 Invited Speaker. Novel technologies for target identification validation in *M. tuberculosis.* San Diego California.

September 2006 Invited Speaker. Pathogenesis of *Mycobacterium Tuberculosis*. Iowa State University “Virulence Mechanisms of Bacterial Pathogens, International Symposium. Ames, Iowa.

September 2006 Invited Speaker. Intelligent design of Tuberculosis Vaccines. Aeras Global TB Vaccine Foundation, Scott J. Thaler Lecture Series. Rockville, Maryland.

November 2006 Invited Speaker. Elucidation of the Immune Evasion functions of *Mycobacterium tuberculosis.* University of Texas Medical branch “The Changing Landscape of vaccine Development: Vaccines for Global Health. Galveston, Texas

January 2007 Invited Speaker. Eradicating Tuberculosis, A War on Two Fronts: Chemotherapy and Immune Evasion Function. Imperial College. South Kensington, London, England.

January 2007 Invited Speaker. Eradicating Tuberculosis: A War on Two Fronts. California State University Program for Education and Research in Biotechnology. Los Angeles, California.

February 2007 Invited Speaker. Eradicating Tuberculosis, A War on Two Fronts: Chemotherapy and Immune Evasion Mechanisms. Arizona State University, Tempe, Arizona.

March 2007 Invited Speaker. TB diagnostics and vaccines. BD Technologies, Research Triangle Park, North Carolina.

March 2007 Invited Speaker. Eradicating Tuberculosis, A War on Two Fronts: Chemotherapy and Immune Evasion Mechanisms. Keystone Symposia. Vancouver, Canada.

April 2007 Invited Speaker. Creating Combined tuberculosis/HIV therapies. Whitehead Institute for Biomedical Research. Cambridge, Massachusetts.

May 2007 Invited Speaker. Tuberculosis genetics and vaccines. Infectious Diseases Meeting. Genomics Institute of Novartis Research Foundation, Siena Italy.

June 2007 Invited Speaker. The next generation of TB vaccines Lessons from Understanding How *M.tuberculosis* Evades the Immune System. University of California Rady Children’s Hospital and Health Center, San Diego California.

June 2007 Invited Distinguished Speaker. Eradicating Tuberculosis, A War on Two Fronts: Chemotherapy and Immune Evasion Mechanisms. Humigen, L.L.C., The Institute for Genetic Immunology.Hamilton, New Jersey.

July 2007 Invited Speaker. Killing the Tubercle Bacillus: Strategies to make a better TB Vaccine. Aids in India 2007 a regional workshop-Symposium to enhance HIV/Aids Research. Bangalore, India.

July 2007 Invited Speaker. How Do We Know Anything about Mycobacteria. University of Pittsburgh, Pittsburgh, Pennsylvania.

January 2008 Invited Speaker. Death of Tubercle Bacillus. 2nd Southeastern Mycobacteria Meeting @ University of Georgia, Athens, Georgia.

January 2008 Invited Speaker. Eradicating tuberculosis, a war on two fronts: chemotherapy & Immune Evasion Mechanisms. Harvard School of Public Health, Boston, Massachusetts.

February 2008 Invited Speaker. Targeting mycolic Acid Biosynthesis of *Mycobacterium tuberculosis*: An Achilles heel of Bacteriocidal Killing and Immune Evasion. University of Princeton, Princeton, New Jersey.

March 2008 Invited Speaker. The Death of the Tubercle Bacillus. Case Western Reserve University, Cleveland, Ohio.

April 2008 Invited Speaker. The Death of the Tubercle Bacillus. University of Colorado Denver, Denver, Colorado.

April 2008 Invited Speaker. Death of the Tubercle Bacillus. Washington University in St. Louis. St.Louis, Missouri.

June 2008 Invited Speaker. The Death of the Tubercle Bacillus – There Must Be 50 Ways to Kill the Bug. 2008 Wind River Conference on Prokaryotic Biology. Estes Park and Rocky Mountain National Park.

July 2008 Invited Speaker. Sterilizing Immunity Against Tuberculosis. Trudeau Institute, Saranac Lake, New York.

September 2008 Invited Speaker. Fulfilling Molecular Koch’s Postulate: A New Era of Tuberculosis Biology. Congreso Internacional Macobacterias, Bogotá, Columbia.

September 2008 Invited Speaker. Mycolic Acids: The Signature Molecule of Tubercle Bacilli. Congreso Internacional Macobacterias, Bogotá, Columbia.

October 2008 Invited Speaker. Recombinant *M. smegmatis* that Elicits Bacteriocidal Immunity against Virulent *M. tuberculosis*. Keystone Symposia on Molecular & Cellular Biology. Bangkok, Thailand.

January 2009 Invited Speaker. XDR TB – Survival of the fittest. Oregon Health & Science University, Portland, Oregon.

February 2009 Invited Speaker. XDR TB – Survival of the fittest. Texas A & M Health Science Center, College of Medicine, College Station, Texas.

February 2009 Invited Speaker. Drugs against XDR-TB: Lession from Isoniazid, Stanford University, Stanford California.

February 2009 Invited Speaker. How does *Mycobacterium tuberculosis* evade killing by Innate and Adaptive Immunity, Stanford University, Stanford, California.

April 2009 Invited Speaker. Extremely Drug-Resistant TB – Survival of the Fittest. Western Connecticut State University, Danbury Connecticut.

October 2009 Invited Speaker. Cysteine prevents the emergency of isoniazid resistance in *Mycobacterium tuberculosis*: Luria and Delbruck-revisted, 17th Microbial Genomics Conference at Rocky Gap Conference Center, Western, Maryland.

November 2009 Invited speaker. Molecular Genetics to find cures and vaccines, Johns Hopkins University, Center for TB Research,Baltimore, Maryland.

November 2009 Invited speaker. XDR TB – Survival of the fittest, The Scripps Research Institute, La Jolla, California.

November 2009 Invited speaker. XDR TB – Survival of the fittest, 9th Latin American Congress of Immunology, Vina del mar, Chile.

February 2010 Invited speaker. A Sweet New Way to Kill *Mycobacterium tuberculosis*, Scripps Research Institute,Jupiter, Florida.

March 2010 Invited speaker. XDR-TB Survival of the Fittest, University of Wisconsin, Madison, Wisconsin.

March 2010 Invited speaker. Preclinical Development of TB Vaccines, U.S.-Southern Africa Joint Research Forum on Tuberculosis, Pretoria, South Africa

April 2010 Invited speaker. Genetic Strategies Reveal sweet new ways to kill Mtb, New York Academy of Sciences, New York.

April 2010 Invited speaker. XDR-TB Survival of the Fittest, Columbia University, New York.

April 2010 Invited speaker. Versatility High throughput specialize transduction: and its application to identify New Targets of *Mycobacterium tuberculosis*, Target Expert Panel meeting, Bethesda, Maryland.

May 2010 Invited speaker. XDR-TB: Survival of the Fittest Means Understanding Death Escape Mechanisms, Wellcome Trust Center, Hinxton, Cambridge UK

September 2010 Invited speaker. High throughput Genetic Analysis of *Mycobacterium tuberculosis*, Global TB Vaccine Forum, Tallinn, Estonia.

October 2010 Invited speaker. Live-attenuated TB vaccines, Cala Carlo diLeva, Circolo dei Forestieri, Sorrento, Italy

November 2010 Invited speaker. Live-attenuated TB vaccines, Innovative Strategies for Vaccines: malaria, tuberculosis, HIV, Sala Carlo di Leva, Circolo Dei Forestieri, Sorrento, Italy.

February 2011 Invited speaker. Beyond BCG: New Generations of TB Vaccines, 11th Annual St. Judes Pediatric Infectious Disease Society Conference on TB, Memphis, TN.

March, 2011 Invited speaker. Phenotype and Genotypes of MDR and XDR TB, T-Tract Meeting, Durban, South Africa.

April 2011 Invited speaker. XDR TB-Survival of the fittest, Uniformed Services University of the Health Sciences, Bethesda, Maryland.

April 2011 Invited speaker. XDR TB-Survival of the fittest. The College of William & Mary, Williamsburg, VA.

April 2011 Invited speaker. XDR TB: Survival of the fittest. College of Veterinary Medicine/University of Minnesota, St. Paul, MN.

June 2011 Invited speaker. XDR TB: Survival of the fittest. Dartmouth Medical School, Hanover NH.

September 2011 Invited speaker, A recombinant Mycobacterium smegmatis induces potent bactericidal immunity. Tuberculosis Vaccines: Status and Path Forward, Beijing, China.

October, 2011 Invited speaker, Extensively Drug-Resistant *Mycobacterium tuberculosis*: The Death Defying Pathogen, The Welch Foundation, Houston Texas.

October 2011 Invited speaker, Combating Extensively Drug Resistant Tuberculosis: Finding solutions in Soil, NYU Honors Program, New York, NY.

December 2011 Invited speaker, A genetically modified recombinant Mycobacterium smegmatis strain that induces potent bactericidal immunity against *M.tuberculosis*, 2011 Novo Nordic Prize Symposium, Copenhagen Denmark.

April 2012 Invited speaker, Mycobacteriophages: The Key to Acquiring Molecular Knowledge of Tuberculosis. Queensborough Community College, Queens, New York.

April 2012 Invited speaker, Targets and virulence factors of *M. tuberculosis*. American Society for Biochemistry and Molecular Biology, San Diego, California.

May 2012 Invited speaker, XDR-TB: Survival of the Fittest. Banff Conference on Infectious Diseases, Alberta, Canada.

May 2012 Invited speaker, Live TB Vaccines. TB Vaccines for the World, Orlando, Florida.

July 2012 Invited speaker, Extensively Drug-Resistant *Mycobacterium tuberculosis*: The Death Defying Pathogen. CSIR Materials Sciences and Manufacturing. Pretoria, South Africa.

September 2012 Invited speaker, XDR-TB: Survival of the fittest. Queens College, Flushing, New York.

September 2012 Invited speaker, XDR-TB: Survival of the fittest. University of Rochester Medical Center, Rochester, New York.