

BIOGRAPHICAL SKETCH

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NAME Brian J. Akerley		POSITION TITLE	
eRA COMMONS USER NAME AKERLEY		Assistant Professor	
EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i>)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Bates College, Lewiston, ME	B.S.	1988	Biology
University of California, Los Angeles, CA	Ph.D.	1995	Microbiol. & Immunol.
Harvard Medical School, Boston, MA	Postdoc	1996-1999	Bacterial Pathogenesis

RESEARCH AND PROFESSIONAL EXPERIENCE:**A. Positions**

1999 Instructor, Dept. of Microbiology and Mol. Genetics, Harvard Medical School, Boston, MA
 1999-2003 Asst. Prof., Dept. of Micro. & Immunol., Univ. of Michigan Med. School, Ann Arbor, MI
 2003-present Asst. Prof., Dept. of Mol. Genetics & Micro., Univ. of Mass. Med. School. Worcester, MA

National Service

2008-2009 American Heart Association grant review panel
 2005-2006 NIH ODCS scientific review group
 2006 NIH NIAID/NERCE Developmental Grants Reviewer
 2004 NIAID special study section.
 2002-2003 NIDCD special emphasis panel.

Honors and Awards

1984 National Merit Scholarship.
 1989 Tumor Immunology Training Grant.
 1992 Microbial Pathogenesis Training Grant, NIAID.
 1996 Damon Runyon-Walter Winchell Fellowship.
 1996 Helen Hay Whitney Fellowship (declined).
 1999 Biological Scholars Award, University of Michigan (competitive recruitment program).
 2001 Dade Microscan Young Investigator, Dade Microscan Inc.
 2002 American Heart Association Scientist Development Award.

B. Bibliography*Journal Articles*

- Nel, A. E., Pollack, S., Landreth, G., Ledbetter, J. A., Hultin, L., Williams, K., Katz, R., and B. Akerley. (1990) Influence of the CD4 Receptor on MAP-2 Kinase Activation. *J. Immunol.* 145: 971-979.
- Pollack, S., Ledbetter, J. A., Katz, R., Williams, K., Akerley, B., Franklin, K., Schieven, G. and A. E. Nel. (1991) Evidence for the Involvement of Glycoprotein-CD45 Phosphatase in Reversing Glycoprotein-CD3-Induced Microtubule Associated Protein-2 Kinase Activity in Jurkat Cells. *Biochem. J.* 276: 481-485.
- Nel, A.E., Ledbetter, J. A., Williams, K., Ho, P., Akerley, B., Franklin, K., and R. Katz. (1991) Activation of MAP-2 Kinase Activity by the CD2 Receptor in Jurkat T Cells can be Reversed by CD45 Phosphatase. *Immunology.* 73:129-133.
- Akerley, B. J., Monack, D., Falkow, S., and J. F. Miller. (1992) The *bvgAS* Locus Negatively Controls Motility and Synthesis of Flagella in *Bordetella bronchiseptica*. *J. Bacteriology* 174: 980-990.
- Akerley, B. J., and J. F. Miller. (1993) Flagellin Gene Transcription in *Bordetella bronchiseptica* is

- Regulated by the BvgAS Virulence Control System. *J. Bacteriology* 175: 3468-3479.
- 6 Akerley, B. J., Cotter, P. A., and J. F. Miller. (1995) Ectopic Expression of the Flagellar Regulon Alters Development of the *Bordetella*-Host Interaction. *Cell* 80(4): 611-620.
 - 7 Giardina, P. C., Foster, L.-A., Musser J.M., Akerley, B. J., Miller, J. F., and D. W. Dyer. (1995) *bvg*-Repression of Alcaligin Synthesis in *Bordetella bronchiseptica* is Associated with Phylogenetic Lineage. *J. Bacteriol.* 177(21): 6058-6063.
 - 8 Martinez de Tejada, G., Cotter, P. A., Heininger, U., Camilli, A., Akerley, B. J., Mekalanos, J. J., and J. F. Miller. (1998). Neither the Bvg⁻ Phase nor *vrg6* of *Bordetella pertussis* are Required for Respiratory Infection in Mice. *Infect. Immun.* 66(6): 2762-2768.
 - 9 Akerley, B. J., Rubin, E. J., Camilli, A., Lampe, D. J., Robertson, H. M., and J. J. Mekalanos. (1998) Systematic Identification of Essential Genes by *in vitro mariner* Mutagenesis. *Proc. Natl. Acad. Sci. USA.* 95: 8927-8932.
 - 10 Cotter, P. A., Yuk, M. H., Mattoo, S., Akerley, B. J., Boschwitz, J., Relman, D. A., and J. F. Miller. (1998) Filamentous Hemagglutinin of *Bordetella bronchiseptica* is Required for Efficient Establishment of Tracheal Colonization. *Infect. Immun.* 66(12): 5921-5929.
 - 11 Rubin, E. J., Akerley, B. J., Novik, N. V., Lampe, D. J., Husson R. N., and J. J. Mekalanos. (1999) *in vivo* Transposition of *mariner*-based Elements in Enteric Bacteria and Mycobacteria. *Proc. Natl. Acad. Sci. USA.* 96: 1645-1650.
 - 12 Lampe, D. J., Akerley, B. J., Rubin, E. R., Mekalanos, J. J., and H. M. Robertson. (1999) Hyperactive transposase mutants of the *Himar1 mariner* transposon. *Proc. Natl. Acad. Sci. USA.* 96: 11428-11433.
 - 13 Hendrixson, D. R., Akerley, B. J., and V. J. DiRita. (2001) Transposon Mutagenesis of *Campylobacter jejuni* Identifies a Bipartite Energy Taxis System Required for Motility. *Molecular Microbiology* 40(1): 214-224.
 - 14 Georgellis, D., Kwon, O., Lin, E.C.C., Wong, S.M., and B. J. Akerley. (2001) Redox Signal Transduction by the ArcB Sensor Kinase of *Haemophilus influenzae* Lacking the PAS Domain *J. Bacteriol.* 183(24):7206-7212.
 - 15 Kolker, E., Purvine, S., Picone, A., Cherny, T., Akerley, B.J., Munson, R.S. Jr., Palsson B.O., Daines, D.A., Smith, A.L. *H. influenzae* Consortium: Integrative Study of *H. influenzae*-Human Interactions. *OMICS.* 2002;6(4):341-8. PMID: 12626093.
 - 16 Akerley, B. J., Rubin, E. J., Novick, V. L., Amaya, K., Judson, N., and J. J. Mekalanos. (2002) A Genome-Scale Analysis of Genes Required for Growth or Survival of *Haemophilus influenzae*. *Proc. Natl. Acad. Sci. U.S.A* 99:966-971.
 - 17 Bergman, N. H. and B. J. Akerley. (2003) Position-Based Scanning for Comparative Genomics and Identification of Genetic Islands in *Haemophilus influenzae* Type b. *Infect. Immun.* 71:1098-1108.
 - 18 Wong, S. M. and B. J. Akerley. (2003) Inducible expression system and marker-linked mutagenesis approach for functional genomics of *Haemophilus influenzae*. *Gene* 316:177-186.
 - 19 Raghunathan, A., Price, N.D., Galperin, M.Y., Makarova, K.S., Purvine, S., Picone, A.F., Cherny, T., Xie, T., Reilly, T.J., Munson, R., Jr., Tyler, R.E., Akerley, B.J., Smith, A.L., Palsson, B.O., Kolker, E. (2004) In Silico Metabolic Model and Protein Expression of *Haemophilus influenzae* Strain Rd KW20 in Rich Medium. *OMICS.* 8(1):25-41.
 - 20 Wong, S.M. and B.J. Akerley. (2005) Environmental and Genetic Regulation of the Phosphorylcholine Epitope of *H. influenzae*. *Molecular Microbiology* 55(3):724-38.
 - 21 Wong, S.M.S., K.R. Alugupalli, S. Ram, and B.J. Akerley. (2007). The ArcA Regulon and Oxidative Stress Resistance in *Haemophilus influenzae*. *Molecular Microbiology.* 64(5):1375-90.
 - 22 Rosadini, C.V., Wong, S.M.S., and B. J. Akerley. (2008). The Periplasmic Disulfide Oxidoreductase DsbA Contributes to *Haemophilus influenzae* Pathogenesis. *Infect. Immun.* 76(4):1498-508.
 23. Vijayalakshmi, J., Akerley, B.J., and M.A. Saper. (2008). Structure of YraM, a Protein Essential for Growth of *Haemophilus influenzae*. *Proteins* 73:1, 204-217. PMID: 18412262.

24. Harrington, J.C., Wong, M. S., Rosadini, C.V., Garifulin, O., Boyartchuk, V., and B. J. Akerley. (accepted) Resistance of *Haemophilus influenzae* to reactive nitrogen donors and gamma interferon (IFN- γ) stimulated macrophages requires the FNR activated *ytfE* gene. *Infect. Immun.* MS#IAITMP-00226-09.

Invited Papers and Chapters

- 1 Cotter, P. A., Akerley, B., and J. F. Miller. (1995). BvgAS Dependent Phenotypic Modulation of *Bordetella* Species. In: R. Rappuoli, V. Scarlato, and B. Arico (eds) Signal Transduction and Bacterial Virulence, Austin: R. G. Landes Co., 21-34.
- 2 Akerley, B. J., and J. F. Miller. (1996). Understanding Signal Transduction During Bacterial Infection. *Trends in Microbiol.* 4 (4): 141-146.
- 3 Akerley, B. J. and D. J. Lampe. (2002) Analysis of Gene Function in Bacterial Pathogens by GAMBIT. In V. L. Clark and P. M. Bavoil (eds.) Methods in Bacterial Pathogenesis Part C. *Meth. Enzymol.* 358:100-108.
- 4 Wong, S. M. S. and B. J. Akerley. (2008) Identification and Analysis of Essential Genes in *Haemophilus influenzae*. In S.Y. Gerdes and A.L. Osterman (eds.) Gene Essentiality at the Genomic Scale: Protocols and Bioinformatics. Humana Press. *Methods Mol. Biol.* 2007; 416:27-44.