

**s BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel in the order listed for Form Page 2.  
Follow the sample format on for each person. (See attached sample). **DO NOT EXCEED FOUR PAGES.**

|  |                           |                |                |
|--|---------------------------|----------------|----------------|
| NAME   |                           | POSITION TITLE |                |
| Josephine E. Clark-Curtiss   |                           | Professor      |                |
| EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.) |                           |                |                |
| INSTITUTION AND LOCATION   | DEGREE<br>(if applicable) | YEAR(s)        | FIELD OF STUDY |
| St. Mary's College, Notre Dame, IN   | B.S.                      | 1968           | Biology        |
| Medical College of Georgia, Augusta, GA  | Ph.D.                     | 1974           | Microbiology   |

**PROFESSIONAL EXPERIENCE:**

1968-1969 Graduate Assistant, Dept. of Cell and Molecular Biology,  
1970-1973 Medical College of Georgia, Augusta, GA  
1969-1970 USPHS Training Grant Fellow, Dept. of Microbiology, Medical College of Georgia,  
Augusta, GA  
1973-1976 Postdoctoral Trainee, Dept. of Microbiology, University of Alabama in Birmingham, AL  
1974 Visiting Instructor, Universidad de Los Andes, Merida, Venezuela  
1976-1979 Research Associate, Dept. of Microbiology, University of Alabama in Birmingham, AL  
1979-1982 Senior Research Associate, Dept. of Microbiology, University of Alabama in Birmingham, AL  
1982-1983 Research Assistant Professor, Dept. of Microbiology, University of Alabama in Birmingham, AL  
1983-1990 Research Assistant Professor, Depts. of Microbiology & Immunology and of Biology, Washington  
University, St. Louis, MO  
1990-2003 Research Associate Professor, Depts. of Biology and of Molecular Microbiology, Washington University,  
St. Louis, MO  
2003-2005 Research Professor, Depts. of Biology and of Molecular Microbiology, Washington University, St.  
Louis, MO  
2004-present Professor, School of Life Sciences and Biodesign Institute, Arizona State University, Tempe, AZ

**HONORS:**

1969 President's Fellowship, American Society for Microbiology, Summer  
1986-1991 Member, Leprosy Panel of the Joint U.S.-Japan Cooperative Medical Sciences Program  
1990-1991 Chair-elect, Division U (Mycobacteriology), American Society for Microbiology  
1991-1992 Chair, Division U (Mycobacteriology), American Society for Microbiology  
1990-2000 Member, International Committee on Systematic Bacteriology  
1991-2002 Member, Editorial Board, Infection and Immunity  
1995-1999 Member, Bacteriology and Mycology Study Section I, National Institutes of Health  
2002-2004 Alternate Councilor, Division U (Mycobacteriology), American Society for Microbiology  
2004-2006 Councilor, Division U (Mycobacteriology), American Society for Microbiology  
2006 Member, Topics in Bacterial Pathogenesis Study Section, USHHS PHS National Institutes of Health

**SOCIETIES:**

1969-present American Society for Microbiology; 1981-present: International Leprosy Association;  
1973-present Sigma Xi

**PUBLICATIONS: (43 Total Publications)**

Jacobs, W.R., M.A. Docherty, R. Curtiss III, and **J.E. Clark-Curtiss**. 1986. Expression of *Mycobacterium leprae* genes from a *Streptococcus mutans* promoter in *Escherichia coli* K-12. Proc. Natl. Acad. Sci. USA. **83**:1926-1930.

- Clark-Curtiss, J.E.** and M.A. Docherty. 1989. A species-specific repetitive sequence in *Mycobacterium leprae* DNA. *J. Inf. Dis.* **159**:7-15.
- Clark-Curtiss, J.E.**, and G.P. Walsh. 1989. Conservation of genomic sequences among isolates of *Mycobacterium leprae*. *J. Bacteriol.* **171**:4844-4851.
- Sathish M., R.E. Esser, J.E.R. Thole, and **J.E. Clark-Curtiss**. 1990. Identification and characterization of antigenic determinants of *Mycobacterium leprae* that react with antibodies in leprosy patients' sera. *Infect. Immun.* **58**:1327-1336.
- Clark-Curtiss, J.E.** 1990. Genome structure of mycobacteria. p. 77-96. In: *The Molecular Biology of the Mycobacteria*. J.J. McFadden (ed.), Academic Press, London.
- Sela, S. and **J.E. Clark-Curtiss**. 1991. Cloning and characterization of the promoter of the 16S ribosomal RNA gene of *Mycobacterium leprae*. *Gene* **98**:123-127.
- Sela, S., J.E.R. Thole, T.H.M. Ottenhoff, and **J.E. Clark-Curtiss**. 1991. Identification of *Mycobacterium leprae* antigens from a cosmid library: characterization of a 15 kDa antigen that is recognized by both the humoral and cellular immune systems in leprosy patients. *Infect. Immun.* **59**:4117-4124.
- Thole, J.E.R., R. Schonigh, A.A.M. Janson, T. Garbe, **J.E. Clark-Curtiss**, A.H.J. Kolk, T.H.M. Ottenhoff, R.R.P. deVries and C. Abou-Zeid. 1992. Molecular and immunological analysis of a fibronectin-binding protein antigen secreted by *Mycobacterium leprae*. *Molec. Microbiol.* **6**:153-163.
- Jagusztyn-Krynicka, E.K., **J.E. Clark-Curtiss** and R. Curtiss III. 1993. *Escherichia coli* heat-labile toxin subunit B fusions with *Streptococcus sobrinus* antigens expressed by *Salmonella typhimurium* oral vaccine strains: importance of the linker for antigenicity and biological activities of the hybrid proteins. *Infect. Immun.* **61**:1004-1015.
- Rinke de Wit, T.F., **J.E. Clark-Curtiss**, F. Abebe, A.H.L. Kolk, A.A.M. Janson, and J.E.R. Thole. 1993. A *Mycobacterium leprae*-specific gene encoding an immunologically recognized 45 kDa protein. *Molec. Microbiol.* **10**:829-838.
- Wieles, B., M. van Agterveld, A. Janson, **J. Clark-Curtiss**, T. Rinke de Wit, M. Harboe and J. Thole. 1994. An antigenic protein secreted by *Mycobacterium leprae*: a homologue of *Mycobacterium tuberculosis* MPT 32. *Infect. Immun.* **62**:252-258.
- Plum, G. and **J.E. Clark-Curtiss**. 1994. Induction of *Mycobacterium avium* gene expression following phagocytosis by human macrophages. *Infect. Immun.* **62**:476-483
- Schorey, J.S., Q. Li, D.W. McCourt, M. Bong-Mastec, **J.E. Clark-Curtiss**, T. L. Ratliff, and E. J. Brown. 1995. A *Mycobacterium leprae* gene required for efficient invasion of Schwann cells encodes a fibronectin-binding protein. *Infect. Immun.* **63**:2652-2657.
- Clark-Curtiss, J.E.**, and G. Plum. 1996. Induction of mycobacterial gene expression during growth in human macrophages. *Acta. Microbiol. Polonica.* **44**:245-254.
- Clark-Curtiss, J.E.** 1997. Identification of virulence determinants in pathogenic mycobacteria. *Curr. Topics Microbiol. Immunol.* **225**:57-79.
- Plum, G., M. Brenden, **J.E. Clark-Curtiss**, and G. Pulverer. 1997. Cloning, sequencing and expression of the *mig* gene of *Mycobacterium avium* coding for a secreted, macrophage-induced protein. *Infect. Immun.* **65**:4548-4557.
- Graham, J.E., and **J.E. Clark-Curtiss**. 1999. Identification of *Mycobacterium tuberculosis* RNAs synthesized in response to phagocytosis by human macrophages by selective capture of transcribed sequences (SCOTS). *Proc. Natl. Acad. Sci. USA* **96**: 11554-11559.
- Haydel, S.E., W.H. Benjamin, Jr., N.E. Dunlap, and **J.E. Clark-Curtiss**. 2002. Expression, autoregulation, and DNA binding properties of the *Mycobacterium tuberculosis* TrcR response regulator. *J. Bacteriol.* **184**: 2192-2203.
- Hou, J.Y., J.E. Graham, and **J.E. Clark-Curtiss**. 2002. Gene expression in *Mycobacterium avium* during growth in human macrophages detected by selective capture of transcribed sequences (SCOTS). *Infect. Immun.* **70**:3714-3726.
- Daigle, F., J.Y. Hou, and **J.E. Clark-Curtiss**. 2002. Microbial gene expression elucidated by selective capture of transcribed sequences (SCOTS). *Meth. Enz.* **358**: 108-122.
- Clark-Curtiss, J.E.** and S.E. Haydel. 2003. Molecular genetics of *Mycobacterium tuberculosis* pathogenesis. *Annu. Rev. Microbiol.* **57**: 517-549.
- Clark-Curtiss, J.E.** and L.E. DesJardin. 2004. Analysis of *Mycobacterium tuberculosis* gene expression in the human host. pp. 187-226. In: L.S. Schlesinger and L.E. DesJardin (eds.), *Tuberculosis: The Microbe:Host Interface*. Horizon Bioscience, Norfolk, UK.
- Haydel, S.E. and **J.E. Clark-Curtiss**. 2004. Global analysis of two-component system regulator genes during *Mycobacterium tuberculosis* growth in human macrophages. *FEMS Microbiol. Lett.* **236**: 336-342.

Haydel, S.E. and **J.E. Clark-Curtiss**. 2006. The *Mycobacterium tuberculosis* TrcR response regulator represses the expression of a seven-bladed  $\beta$ -propeller protein. *J. Bacteriol.* **188**: 150-159.

## RESEARCH SUPPORT

### Ongoing Research Support:

RO1 AI 046428

02/01/00 to 11/30/09

NIH/NIAID

Gene Expression in *Mycobacterium tuberculosis*

This study investigates gene expression and regulation of gene expression in *Mycobacterium tuberculosis* while the organism is growing in primary human macrophages. This will be accomplished by mutating specific genes that have been shown to be expressed by *M. tuberculosis* during growth in human macrophages and comparing survival and growth of wild type and mutant strains of *M. tuberculosis* in macrophages. In addition, genes expressed by *M. tuberculosis* at various times after infection of human macrophages will be identified from cDNA libraries prepared at different times after infection of macrophages.

Role: PI

R01 AI 056289

Roy Curtiss III (PI)

NIH/NIAID

Recombinant Attenuated *Salmonella* Vaccines for Humans

These studies are designed to develop vaccines for humans based on recent technical developments by the Curtiss Research Group in the use of recombinant attenuated *Salmonella* vaccines. The objectives are: (1) to construct and evaluate the contribution of strain background and the RpoS+ phenotype on immunogenicity of a recombinant antigen expressed by attenuated *Salmonella typhi* strains, (2) to design, construct and evaluate a recombinant attenuated *S. typhi* vaccine to express and deliver protective antigens specified by genetic information from *Streptococcus pneumoniae* to prevent pneumococcal disease caused by strains with diverse capsular serotypes, and (3) to design, construct and evaluate a recombinant attenuated *S. typhi* vaccine to express and deliver protective antigens specified by genetic information from *Mycobacterium tuberculosis* as a preventative/therapeutic vaccine against tuberculosis.

Role: Co-PI

### Pending:

None