

Curriculum Vitae Simran Banga

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EDUCATION

Ph.D. Molecular Biology & Microbiology Purdue University, West Lafayette, Indiana
M.S. Microbiology University of Bombay, Mumbai, India.
B.S. Microbiology University of Bombay, Mumbai, India.

EMPLOYMENT

Assistant Professor, Department of Biology, Western Kentucky University 2016
Assistant Professor of Biology, School of Natural Science & Mathematics, Indiana University East, Richmond, IN 2013- 2016
Postdoctoral Research Scholar, Department of Microbiology, University of Iowa, Iowa City, IA 2011- 2013
Postdoctoral Research Associate, Department of Biological Sciences, Purdue University, West Lafayette, IN 2009 - 2011
Graduate Research Assistant, Department of Biological Sciences, Purdue University, West Lafayette, IN 2004 - May 2009
Graduate Teaching Assistant, Department of Biological Sciences, Purdue University, West Lafayette, IN 2003 – 2008
Lecturer, Department of Microbiology, S.I.E.S College of Arts, Science & Commerce, Bombay, India 1996-2003

PUBLICATIONS

Banga S, Coursen JD, Portugal S, Tran TM, Hancox L, Ongoiba A, Traore B, Doumbo OK, Huang CY, Harty JT and Crompton PD. Impact of acute malaria on pre-existing antibodies to viral and vaccine antigens in mice and humans. *PLOS One*, (2015) 10(4): e0125090

Weber MM, Chen C, Rowin K, Mertens K, Galvan G, Zhi H, Dealing CM, Roman VA, **Banga S**, Tan Y, Luo ZQ and Samuel JE. Identification of *C. burnetii* type IV secretion substrates required for intracellular replication and Coxiella-containing vacuole formation. *Journal of Bacteriology* (2013) 195 (17): 3914-3924

Zhu W, **Banga S**, Tan Y, Zheng C, Stephenson R, Gately J and Luo ZQ. Comprehensive identification of protein substrates of the Dot/Icm type IV transporter of *Legionella pneumophila*. *PLOS One*, (2011) 6(3): e17638

Fontana MF, **Banga S**, Barry KC, Shen X, Tan Y, Luo ZQ and Vance RE. Secreted bacterial effectors that inhibit host protein synthesis are critical for induction of the innate immune response to virulent *Legionella pneumophila*. *PLoS Pathogens* (2011) 7(2):e1001289

Chen C,* **Banga S**,* Mertens K,* Weber MM, Gorbaslieva I, Tan Y, Luo ZQ and Samuel JE. Large-scale identification and translocation of Type IV secretin substrates by *Coxiella burnetii*. *PNAS* (2010) 107(50): 21755-21760

Authors Contributed Equally.

Xu L, Shen X, Bryan A, **Banga S**, Swanson MS and Luo ZQ. Inhibition of Host Vacuolar H⁺-ATPase Activity by a *Legionella pneumophila* effector. *PLoS Pathogens* (2010) 6(3):e1000822

Shen X, * **Banga S**,* Liu Y, Xu L, Gao P, Shamovsky I, Nudler E and Luo ZQ. Targeting eEF1A by a *Legionella pneumophila* effector leads to inhibition of protein synthesis and induction of host stress response. *Cell Microbiol.* (2009) 11: 911-926

Authors Contributed Equally.

Liu Y, Gao P, **Banga S** and Luo ZQ. An *in vivo* gene deletion system for determining temporal requirement of bacterial virulence factors. *PNAS* (2008) 105: 9385-9390

Banga S, Gao P, Shen X, Fiscus V, Zong WX, Chen L and Luo ZQ. *Legionella pneumophila* inhibits macrophage apoptosis by targeting pro-death members of the Bcl2 protein family. *Proc. Natl. Acad. Sci. USA* (2007) 104: 5121-5126

GRANTS AND HONORS

RCAP award, 2017 Western Kentucky University

EPSCoR Research Startup Support, 2016 Western Kentucky University

EPSCoR Research Enhancement Grant, 2016, Western Kentucky University

KBRIN start-up award 2016, Western Kentucky University

Faculty Research Fellowship, Summer 2015, Indiana University East

Midwest Microbial Pathogenesis Conference Abstract Award Oct 2011, Ann Arbor, MI

Purdue Pre-Tenure Fellowship 2010

H. E. Umbarger Outstanding Graduate Student in Research (*Honorable Mention*) 2008

Department of Biological Sciences, Purdue University. IN

Purdue University Summar Research Fellowship 2004

PRESENTATIONS

Department of Biology, Western Kentucky University 2015 Host cell modulations by *Legionella pneumophila*

Department of Microbiology & immunology, University of Iowa 2013 B cell response in malaria infected mice

Department of Microbiology & immunology, University of Iowa 2011 Legionella pneumophila induced host cellular response

Banga, S., Tan, T. and Luo, Z.Q. Host nucleus targeting of *Legionella pneumophila* Dot/Icm effectors (Poster presentation) 18th Midwest Microbial Pathogenesis Conference, 2011 Ann Arbor, MI

Banga, S., Tan, T. and Luo, Z.Q. Characterization of a group of Legionella effectors that target to the nucleus of host cell (Poster presentation) ASM Conference 2010, San Diego, CA.

Department of Biological Sciences, Purdue University 2009 Inhibition of Protein biosynthesis in *Legionella pneumophila* infected macrophages.

Shen, X., **Banga, S.** and Luo, Z. Q. (Poster presentation). 2007 Biological Sciences Retreat, Purdue University, IN.

Banga, S. Manipulation of host cell functions by *Legionella pneumophila* (Oral presentation). Biological Sciences Retreat 2006, Purdue University, IN

CONFERENCES

ASM Conference for Undergraduate Educators (ASMCUE), Denver, CO July 2017

NSF Grants Conference organized by EPSCoR at the University of Louisville, Louisville, KY June 2017

NIH R15 grant workshop organized by KBRIN at University of Louisville, Louisville, KY November 2016

Beginning a Research Program in the Natural Sciences Institute organized by Council on Undergraduate Research (CUR), Arlington, VA November 18- 20, 2016.

Lilly International Conference, College and University Teaching and Learning, Bethesda, MD. May 2015

Keystone symposia conference Malaria, New Orleans, LA. Jan. 2013

18th Annual Midwest Microbial Pathogenesis, University of Michigan, Ann Arbor, MI. Oct 2011

17th Annual Midwest Microbial Pathogenesis, Washington University, St. Louis. MO. Sep 2010

ASM (American Society of Microbiology) Conference, San Diego, CA. May 2010

16th Annual Midwest Microbial Pathogenesis, Purdue University, IN. Sep. 2009

15th Annual Midwest Microbial Pathogenesis, University of Wisconsin, Madison, WI. Sep 2008

14th Annual Midwest Microbial Pathogenesis, Northwestern University, Chicago, IL. Oct 2007

LEGIONELLA 2005, 6th International Conference on *Legionella*, Chicago, IL. Oct 2005

SCIENTIFIC/COMMUNITY ACTIVITIES

Member of WISE (Women in Science and Engineering) advisory committee, Western Kentucky University, 2016

Member Student Research Council, Western Kentucky University, 2016

Event Supervisor, Disease Detective, Science Olympiad 2017

Journal Reviewer for PLoS One, PLoS Pathogens

Judge for Undergraduate Research Symposium, Purdue University, West Lafayette 2009-2011

Judge for Lafayette regional science and engineering fair, West Lafayette, 2008-2011

Postdoctoral and Research Scientist Advisory Committee representative, Department of Biological Sciences, Purdue University, IN.

Council Member of Purdue Post-Doctoral Association, Purdue University, IN.

PROFESSIONAL MEMBERSHIP

American Society for Microbiology (2004 – present)

The American Association of Immunologists (2011-present)

Kentucky Academy of Science 2016

Sigma Xi 2015