

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

- **Simran Banga**, Ping Gao, Xihui Shen, Valena Fiscus, Wei-Xing Zong, Lingling Chen, and Zhao-Qing Luo. *Legionella pneumophila* inhibits macrophage apoptosis by targeting pro-death members of the Bcl2 protein family. *Proc. Natl. Acad. Sci. USA* (2007) 104: 5121-5126
- Yancheng Liu, Ping Gao, **Simran Banga**, and Zhao-Qing Luo. An *in vivo* gene deletion system for determining temporal requirement of bacterial virulence factors. *PNAS* (2008) 105 : 9385-9390

- Xihui Shen*, **Simran Banga***, Yancheng Liu, Li Xu, Ping Gao, Ilya Shamovsky, Evgeny Nudler and Zhao-Qing Luo. 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.**
- Li Xu, Xihui Shen, Andrew Bryan, **Simran Banga**, Michele Swanson and Zhao-Qing Luo. Inhibition of Host Vacuolar H⁺-ATPase Activity by a *Legionella pneumophila* effector. *PLoS Pathogens* (2010) 6(3) :e1000822
- Chen Chen*, **Simran Banga***, Katja Mertens*, Mary W. Weber, Ivana Gorbashlieva, Yunhao Tan, Zhao-Qing Luo and James E. Samuel. Large-scale identification and translocation of Type IV secretin substrates by *Coxiella burnetii*. *PNAS* (2010) 107(50): 21755-21760
* **Authors Contributed Equally.**
- Mary F. Fontana, **Simran Banga**, Kevin C. Barry, Xihui Shen, Yunhao Tan, Zhao-Qing Luo and Russell E. Vance. 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
- Wenhan Zhu, **Simran Banga**, Yunhao Tan, Cheng Zheng, Robert Stephenson, Jonathan Gately and Zhao-Qing Luo. Comprehensive identification of protein substrates of the Dot/Icm type IV transporter of *Legionella pneumophila*. *PLOS One*,(2011) 6(3): e17638
- Mary Weber, Chen Chen, Kristina Rowin, Katja Mertens, Gloria Galvan, Hui Zhi, Christopher Dealing, Victor Roman, **Simran Banga**, Yunhao Tan, Zhao-Qing Luo, and James Samuel. 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
- **Simran Banga**, Yunhao Tan and Zhao-Qing Luo. Characterization of a group of *Legionella* effectors that target to the nucleus of host cell. (*Under Review*)
- **Simran Banga**, Jill D. Coursen, Silvia Portugal, Tuan M. Tran, Lisa Hancox, Aissata Ongoiba, Boubacar Traore, Ogobara K. Doumbo, Chiung-Yu Huang, John T. Harty and Peter D. Crompton. Impact of acute malaria on pre-existing antibodies to viral and vaccine antigens in mice and humans. *PLOS One*,(2015) 10(4): e0125090

GRANTS AND HONORS

- KEBRIN 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
- **Simran Banga**, Yunhao Tan and Zhao-Qing Luo. Host nucleus targeting of *Legionella pneumophila* Dot/Icm effectors (Poster presentation) 18th Midwest Microbial Pathogenesis Conference, 2011 Ann Arbor, MI
- **Simran Banga**, Yunhao Tan and Zhao-Qing Luo. 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.
- Xihui Shen, **Simran Banga** and Zhao-Qing Luo. (Poster presentation). 2007 Biological Sciences Retreat, Purdue University, IN.
- **Simran Banga**. Manipulation of host cell functions by *Legionella pneumophila* (Oral presentation). Biological Sciences Retreat 2006, Purdue University, IN

CONFERENCES

- 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
- Member Student Research Council, Western Kentucky University
- 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