

CURRICULUM VITAE

NAME: Selvakumar Subbian, Ph.D

PRESENT TITLE: Associate Professor

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EDUCATION:

- A. Undergraduate Graduate and Professional
Bharathiar University
Coimbatore, India
Bachelor of Science (Biochemistry)
- B. Graduate and Professional
University of Madras
Chennai, India
Master of Science (Biomedical Genetics)
The Tamilnadu Dr. MGR Medical University
Chennai, India
Ph.D (Basic medical sciences) 04/2003

POSTGRADUATE TRAINING:

- A. Internship and Residencies
None
- B. Research Fellowships
Junior Research Fellowship (JRF) from the Council for Scientific and Industrial Research
New Delhi, India
Basic medical sciences

Senior Research Fellow (SRF) from the Council for Scientific and Industrial Research
New Delhi, India
Basic medical sciences
- C. Postdoctoral Appointments
Department of Veterinary and Basic Medical Sciences, University of Nebraska, Lincoln,
Nebraska

Department of Microbial and Molecular Pathogenesis
Texas A&M System Health Science Center, College station, Texas.

ACADEMIC APPOINTMENTS:

1). Associate Professor

Public Health Research Institute Center and Department of Medicine at Rutgers, New Jersey
Medical School, Newark, New Jersey

2). Assistant Professor

Public Health Research Institute Center and Department of Medicine at Rutgers, New Jersey
Medical School, Newark, New Jersey

3). Research Teaching Specialist

Public Health Research Institute center and Department of Medicine at University of Medicine and Dentistry of New Jersey, Newark, New Jersey

OTHER EMPLOYMENT OR MAJOR VISITING APPOINTMENTS:

1). *Research Assistant*

Dept. of Immunology, Tuberculosis Research Center (ICMR), Chennai, India

2). *Lecturer (Bioinformatics)*

Punjab Technical University, Chennai, India

MEMBERSHIPS, OFFICES AND COMMITTEE ASSIGNMENTS IN PROFESSIONAL SOCIETIES:

1). *American Society for Microbiology* (ASM) since 2003

Member and International minority student mentor, 2004 – Present

2). *New York Academy of Sciences* (NYAS), 2011 – Present

3). *American Association of Immunologists* (AAI), 2019-

HONORS AND AWARDS:

1. Travel Award at the EMBO-India Research Symposia at New Delhi, India, Feb-2020
2. Invited Guest Speaker at the University of Tennessee, Knoxville, TN. June, 2019
3. Grant Reviewer for Wellcome Trust-South Africa, Since 2020
4. Grant Reviewer for Ireland Medical Foundation, Since 2020
5. Grant Reviewer for UK Medical Foundation, Since 2020
6. Mentor of the Month featured at the National Research Mentoring Network (NRMN), May-2019.
7. Best Poster Award at the 17th Annual Department of Medicine Research Day, New Jersey Medical School, Newark, NJ, May-2019
8. Invited Guest Speaker at the NIH/NIAID workshop on small animal models for HIV and co-morbid conditions, NIH, Bethesda, MD. June, 2019
9. Invited Guest Speaker at the World TB Day-2019, Albany Medical Center, Albany, NY. Mar, 2019
10. Grant Reviewer for French National Research Agency, 2019
11. Invited Guest Speaker at the Houston Methodist Hospital Research Institute, Houston, TX, Feb, 2019
12. Grant Reviewer for Wellcome Trust India Alliance, Since 2019
13. Invited Guest Speaker at the Dept. of Microbiology, University of Tennessee, Knoxville, TN. 2018.
14. Key Note Speaker at Theobald Smith Society, New Jersey branch of American Society for Microbiology (ASM), 2017.
15. Young Investigator-2017 Award from Theobald Smith Society of American Society for Microbiology, 2017.
16. Invited guest speaker at the Keystone Symposium on Novel Therapeutic Approaches to Tuberculosis (C7-2014) at Keystone, Colorado. March 31-April 4th, 2014.
17. Best poster award for “Differential Activation of Early Innate Immunity Predicts the Outcome of *Mycobacterium tuberculosis* infection in Rabbit Lungs” at the symposium on “Innate Immune Mechanisms Controlling Inflammation and Infection” New Jersey Medical School at University of Medicine and Dentistry of New Jersey-School of Medicine, Newark, New Jersey, March 2013.
18. NIH Reviewer (CETR), NIAID / NIH, 2013.
19. Awarded second prize for the poster, “EphA2-deficient mice display altered granuloma morphology and lung immune cell composition following tuberculosis infection” at “Molecular Basis of Infectious Diseases Retreat” Texas A&M Health Science Center, Houston, Texas. March 2008.
20. Travel award to present “Illuminating Reactive Oxygen and Nitrogen Species Resistance Mechanisms through Analysis of Bioluminescence-like Genes in Mycobacteria” to present at the “Keystone symposium on Tuberculosis: From Lab Research to Field Trials”. National Institute for Allergy and Infectious Diseases (NIAID)/NIH. Jan. 2007.

21. Junior and Senior Research Fellowship for PhD from the Council for Scientific and Industrial Research, India. Jan. 1996 – Jan. 2001.
22. Qualified National Level Eligibility Test for Research and Lectureship from the Council for Scientific and Industrial Research, India. Jan 1996.
23. University-level second rank (B.Sc. Biochemistry), Bharathiar University, Coimbatore, India. April 1993.
24. Silver medal for academic proficiency (B.Sc. Biochemistry), Bharathiar University, Coimbatore, India. April 1993.

SERVICE ON NATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES:

- A. NIH grant review panel member, 2013-
- B. Judge for Poster and Oral Presentations, Annual Biomedical Research Conference for Minority Students (ABRCMS), a body of the American Society for Microbiology. 2008-

SERVICE ON MAJOR COMMITTEES:

- A. **International** (*Name, Inclusive Dates*)
 - 1) Scientific Expert for the Agence Nationale de la Recherche (ANR), France, 2018-
 - 2) Wellcome Trust-India Alliance Grants Reviewer, 2016-
 - 3) Wellcome Trust-South Africa Grants Reviewer, 2020-
 - 4) Reviewer for Ireland Medical Foundation, 2020-
 - 5) Reviewer for UK Medical Foundation, 2020-
- B. **Medical School/University:**
 - 1). Rutgers Faculty Committee on Appointments and Promotions, 2019-
 - 2). Rutgers Biosafety Committee for COVID research, 2020-
 - 3). Rutgers Revitalizing Committee for Biological, Biochemical and Biomedical Research after COVID, 2020-
 - 4). Rutgers-Newark IACUC committee, (2016-2018)
 - 5). Graduate Recruitment (candidate interviewer) Day / Open House of NJMS, 2018-
 - 6). Judge for Poster and Oral Presentations, Annual Graduate Student Research Conference, New Jersey Medical School, Rutgers University, 2017-
 - 7). Judge for Poster and Oral Presentations, 17th Annual Department of Medicine Research Day, New Jersey Medical School, Rutgers University, 2017-
- C. **Editorial Boards** (*Journal Name, Inclusive Dates*)
 1. Medicina, 2020-
 2. Frontiers in Epidemiology , 2020-
 3. Mycobacteriology, 2018-
 4. PLOS ONE, 2014-
 5. British Journal of Applied Science and Technology (BJAST), 2014-
 6. Nature Scientific Reports, 2014-
 7. Journal of Global Infectious Diseases (JGID), 2014-
- D. **AdHoc Reviewer** (*Journal Name, Inclusive Dates*)
 1. PLOS ONE, 2012-
 2. British Journal of Applied Science and Technology (BJAST), 2014-
 3. Nature Scientific Reports, 2014-
 4. Journal of Global Infectious Diseases (JGID), 2014-
 5. Cell Host Microbe, 2012-
 6. PNAS, 2013-
 7. Am J Respir Crit Care Med (AJRCCM), 2013-
 8. Immunobiology, 2015-
 9. Journal of Interferon and Cytokine Research (JICR), 2015-
 10. EBioMedicine, 2015-
 11. Journal of Immunology Research, 2015-
 12. British Journal of Pharmacology, 2016-

13. Biochemica Biophysica Acta, 2016-
14. Journal of Ethanopharmacology, 2017-
15. Tuberculosis (Edin.), 2015-
16. Antimicrobial Agents and Chemotherapy (AAC), 2018-
17. Cell Proliferation. 2019-
18. Cellular Immunology, 2018-
19. Comparative Immunology, Microbiology and Infectious Diseases, 2016-
20. European Journal of Pharmacology, 2019-
21. Experimental Molecular Pathology, 2019-
22. Frontiers in Immunology, 2017-
23. Frontiers in Endocrinology, 2019-
24. International Journal of Infectious Diseases, 2018-
25. Immunological Research, 2018-
26. Infection, Genetics and Evolution, 2018-
27. Journal of Clinical Medicine, 2018-
28. MDPI-Microbiology, 2019-
29. Mycobacterial Diseases, 2015-
30. Pathogen and Diseases, 2018-
31. PLoS Neglected Tropical Diseases, 2019-
32. Frontiers in Microbiology, 2019-
33. Frontiers in Cellular and Infectious Diseases, 2019-
34. European Journal of Clinical Microbiology, 2019-
35. Expert Opinion in Thereapeutic Targets, 2019-
36. MDPI-Microorganisms, 2019-
37. mSphere, 2019-
38. MDPI-Pathogens, 2020-
39. Medicina, 2020-
40. ACS Nano, 2020-
41. MDPI-Pharmaceuticals, 2020-
42. Transboundary and Emerginng Diseases, 2020-

SERVICE ON GRADUATE SCHOOL COMMITTEES: Graduate thesis committee, 2017-

SPONSORSHIP OF POSTDOCTORAL FELLOWS: 5

1. Afsal Kolloli
2. Pooja Singh
3. Ranjeetkumar
4. Anshika Narang
5. Santhamani Ramasamy

TEACHING RESPONSIBILITIES:

- A. Lectures or Course Directorships
Punjab Technical University, Chennai, India
Lecturer in Bioinformatics – Gene expression and regulation in pro and eukaryotes
02/2002 – 02/2003 (4 hours per week)
- B. Research Training
Post Doctoral Fellows: Two (Drs. Afsal Kolloli and Pooja Singh)
Pre Doctoral Students:
At PHRI: (i) Sumaaya Mohamed (2016-2017)
(ii) Viraj Khetani (2013)

At the Dept. of Veterinary and Basic Medical Sciences, University of Nebraska at Lincoln, Nebraska:

- i. Elizabeth Thiemann (08/2003 – 11/2005)

- ii. Karen Lee (08/2003 – 11/2005)
- iii. Angela Mckinney Williams (06/2004 – 10/2005)

At the Dept. of Microbial and Molecular Pathogenesis, Texas A&M Health Science Center at College Station, Texas:

- i. Alfredo Echeverria (04/2007 – 03/2008)
- ii. Randy Eman (05/2006 – 08/2007)
- iii. Megan Files (06/2006 – 10/2008)
- iv. Greg Maberry (06/2007 – 10/2008)

PUBLICATIONS:

A. Refereed Original Article in Journal:

1. O'Brien P, Vinnard C, Subbian S. An improved protocol to establish experimental tuberculous meningitis in the rabbit. *MethodsX*. 2020 Feb 21;7:100832. doi: 10.1016/j.mex.2020.100832. PMID: 32195146
2. Tsenova L, Fallows D, Kolloli A, Singh P, O'Brien P, Kushner N, Kaplan G, Subbian S. Inoculum size and traits of the infecting clinical strain define the protection level against Mycobacterium tuberculosis infection in a rabbit model. *Eur J Immunol*. 2020 Mar 4. doi: 10.1002/eji.201948448. PMID: 32130727
3. Kumar R, Kolloli A, Singh P, Vinnard C, Kaplan G, Subbian S. Thalidomide and Phosphodiesterase 4 Inhibitors as Host Directed Therapeutics for Tuberculous Meningitis: Insights From the Rabbit Model. *Front Cell Infect Microbiol*. 2020 Jan 14;9:450. doi: 10.3389/fcimb.2019.00450. PMID: 32010638
4. Akkina R, Barber DL, Bility MT, Bissig KD, Burwitz BJ, Eichelberg K, Endsley JJ, Garcia JV, Hafner R, Karakousis PC, Korba BE, Koshy R, Lambros C, Menne S, Nuermberger EL, Ploss A, Podell BK, Poluektova LY, Sanders-Bear BE, **Subbian S**, Wahl A. Small Animal Models for Human Immunodeficiency Virus (HIV), Hepatitis B, and Tuberculosis: Proceedings of an NIAID Workshop. *Curr HIV Res*. 2019 Dec 22. doi: 10.2174/1570162X18666191223114019. PMID:31870268.
5. Dusthacker A, Balasubramanian M, Shanmugam G, Priya S, Nirmal CR, Sam Ebenezer R, Balasubramanian A, Mondal RK, Thiruvankadam K, Hemanth Kumar AK, Ramachandran G, **Subbian S***. Differential Culturability of *Mycobacterium tuberculosis* in Culture-Negative Sputum of Patients With Pulmonary Tuberculosis and in a Simulated Model of Dormancy. *Front Microbiol*. 2019 Oct 23;10:2381. doi: 10.3389/fmicb.2019.02381. eCollection 2019. PMID:31749768
6. Kumar R, Singh P, Kolloli A, Shi L, Bushkin Y, Tyagi S, **Subbian S***. Immunometabolism of Phagocytes During *Mycobacterium tuberculosis* Infection. *Front Mol Biosci*. 2019 Oct 14;6:105. doi: 10.3389/fmolb.2019.00105. eCollection 2019. PMID:31681793
7. Li J, Fu L, Wang G, **Subbian S**, Qin C, Zhao A. Unmethylated CpG motif-containing genomic DNA fragment of *Bacillus calmette-guerin* promotes macrophage functions through TLR9-mediated activation of NF- κ B and MAPKs signaling pathways. *Innate Immun*. 2019 Oct 15:1753425919879997. doi: 10.1177/1753425919879997. PMID:31615313
8. Kolloli A, Singh P, Rodriguez GM, **Subbian S***. Effect of Iron Supplementation on the Outcome of Non-Progressive Pulmonary *Mycobacterium tuberculosis* Infection. *J Clin Med*. 2019 Aug 2;8(8). pii: E1155. doi: 10.3390/jcm8081155. PMID:31382404
9. Mezocho A, Thakur KT, Zentner I, **Subbian S**, Kagan L, Vinnard C. Attainment of target rifampicin concentrations in cerebrospinal fluid during treatment of tuberculous meningitis. *Int J Infect Dis*. Apr 30;84:15-21. PMID:31051278.
10. Ayyappan JP, Ganapathi U, Lizardo K, Vinnard C, **Subbian S**, Perlin DS, Nagajyothi JF. Adipose Tissue Regulates Pulmonary Pathology during TB Infection. *MBio*. Apr 16;10(2). pii: e02771-18. PMID:30992360.
11. Shi L, Jiang Q, Bushkin Y, **Subbian S**, Tyagi S. 2019. Biphasic Dynamics of Macrophage Immunometabolism during *Mycobacterium tuberculosis* Infection. *MBio*. Mar 26;10(2). pii: e02550-18. PMID:30914513.
12. Teskey G, Cao R, Islamoglu H, Medina A, Prasad C, Prasad R, Sathananthan A, Fraix M, **Subbian S**, Zhong L, Venketaraman V. 2018. The Synergistic Effects of the Glutathione Precursor, NAC

- and First-Line Antibiotics in the Granulomatous Response Against *Mycobacterium tuberculosis*. *Frontiers in Immunology*. Sep 12;9:2069. PMID:30258443.
13. Guerrini V, Prideaux B, Blanc L, Bruiners N, Arrigucci R, Singh S, Ho-Liang HP, Salamon H, Chen PY, Lakehal K, **Subbian S**, O'Brien P, Via LE, Barry CE 3rd, Dartois V, Gennaro ML. 2018. Storage lipid studies in tuberculosis reveal that foam cell biogenesis is disease-specific. *PLoS Pathog*. 30;14(8):e1007223. doi: 10.1371/journal.ppat.1007223. PMID:30161232.
 14. Liao G, Wang Y, Liu TB, Kohli G, Qian W, Shor E, **Subbian S**, Xue C. 2018. Role of the inositol pyrophosphate multikinase Kcs1 in Cryptococcus inositol metabolism. *Fungal Genet Biol*. pii: S1087-1845(18)30006-9. PMID: 29357302.
 15. Esteves PJ, Abrantes J, Baldauf HM, BenMohamed L, Chen Y, Christensen N, González-Gallego J, Giacani L, Hu J, Kaplan G, Keppler OT, Knight KL, Kong XP, Lanning DK, Le Pendu J, de Matos AL, Liu J, Liu S, Lopes AM, Lu S, Lukehart S, Manabe YC, Neves F, McFadden G, Pan R, Peng X, de Sousa-Pereira P, Pinheiro A, Rahman M, Ruvoën-Clouet N, **Subbian S**, Tuñón MJ, van der Loo W, Vaine M, Via LE, Wang S, Mage R. 2018. The wide utility of rabbits as models of human diseases. *Exp Mol Med*. May 22;50(5):66. doi: 10.1038/s12276-018-0094-1. PMID:29789565.
 16. Singh P and **Subbian S***. 2018. Harnessing the mTOR pathway for tuberculosis treatment. *Front. Microbiol*. 9:70. doi: 10.3389/fmicb.2018.00070.(* corresponding author).
 17. Kolloli A, **Subbian S***. 2017. Host-Directed Therapeutic Strategies for Tuberculosis. *Front Med (Lausanne)*. Oct 18;4:171. doi: 10.3389/fmed.2017.00171. eCollection 2017. PMID: 29094039. (* corresponding author).
 18. Ayyappan JP, Vinnard C, **Subbian S***, Nagajyothi JF. 2017. Effect of Mycobacterium tuberculosis infection on adipocyte physiology. *Microbes Infect*. Nov 8. pii: S1286-4579(17)30183-1. doi: 10.1016/j.micinf.2017.10.008. PMID: 29109018. (* corresponding author).
 19. Kurthkoti K, Amin H, Marakalala MJ, Ghanny S, **Subbian S**, Sakatos A, Livny J, Fortune SM, Berney M, Rodriguez GM. 2017. The Capacity of *Mycobacterium tuberculosis* To Survive Iron Starvation Might Enable It To Persist in Iron-Deprived Microenvironments of Human Granulomas. *MBio*. Aug 15;8(4). pii: e01092-17. doi: 10.1128/mBio.01092-17. PMID: 28811344.
 20. Guerrini V, **Subbian S**, Santucci P, Canaan S, Gennaro ML, Pozzi G. Experimental Evolution of Mycobacterium tuberculosis in Human Macrophages Results in Low-Frequency Mutations Not Associated with Selective Advantage. *PLoS One*.2016 Dec 13;11(12):e0167989. doi: 10.1371/journal.pone.0167989. eCollection 2016. PubMed PMID: 27959952; PubMed Central PMCID: PMC5154527.
 21. Tasker C, **Subbian S**, Gao P, Couret J, Levine C, Ghanny S, Soteropoulos P, Zhao X, Landau N, Lu W, Chang TL. IFN- γ protects primary macrophages against HIV infection. *JCI Insight*. 2016 Dec 8;1(20):e88255. PubMed PMID: 27942584; PubMedCentral PMCID: PMC5135270.
 22. Dehnad A, Ravindran R, **Subbian S***, Khan IH. Development of immune-biomarkers of pulmonary tuberculosis in a rabbit model. *Tuberculosis (Edinb)*. 2016 Dec;101:1-7. doi: 10.1016/j.tube.2016.07.008. Epub 2016 Jul 26. PubMed PMID: 27865378. (*Corresponding author)
 23. Unissa AN, **Subbian S**, Hanna LE, Selvakumar N. Overview on mechanisms of isoniazid action and resistance in Mycobacterium tuberculosis. 2016 Nov;45:474-492. doi: 10.1016/j.meegid.2016.09.004. Epub 2016 Sep 6.Review. PubMed PMID: 27612406.
 24. **Subbian S***, Koo MS, Tsenova L, Khetani V, Zeldis JB, Fallows D, Kaplan G. Pharmacologic Inhibition of Host Phosphodiesterase-4 Improves Isoniazid-Mediated Clearance of Mycobacterium tuberculosis. *Front Immunol*. 2016 Jun 17;7:238. doi:10.3389/fimmu.2016.00238. eCollection 2016. PubMed PMID: 27379099; PubMed Central PMCID: PMC4911353. (*Corresponding author)
 25. Shi L, Eugenin EA, **Subbian S***. Immunometabolism in Tuberculosis. *Front Immunol*.2016 Apr 21;7:150. doi: 10.3389/fimmu.2016.00150. eCollection 2016. Review.PubMed PMID: 27148269; PubMed Central PMCID: PMC4838633. (*Corresponding author)
 26. **Subbian S***, Tsenova L, Holloway J, Peixoto B, O'Brien P, Dartois V, Khetani V, Zeldis JB, Kaplan G. Adjunctive Phosphodiesterase-4 Inhibitor Therapy Improves Antibiotic Response to Pulmonary Tuberculosis in a Rabbit Model. *EBioMedicine*. 2016 Jan 14;4:104-14. doi: 10.1016/j.ebiom.2016.01.015. eCollection 2016 Feb. PubMed PMID: 26981575; PubMed Central PMCID: PMC4776074. (*Corresponding author).

27. **Subbian S***, Tsenova L, Kim MJ, Wainwright HC, Visser A, Bandyopadhyay N, Bader JS, Karakousis PC, Murrmann GB, Bekker LG, Russell DG, Kaplan G. Lesion-Specific Immune Response in Granulomas of Patients with Pulmonary Tuberculosis: A Pilot Study. *PLoS One*. 2015 Jul 2;10(7):e0132249. doi: 10.1371/journal.pone.0132249. eCollection 2015. PMID:26133981. (*Corresponding author)
28. **Subbian S***, Pandey R*, Soteropoulos P, Rodriguez GM. Vaccination with an attenuated ferritin mutant protects mice against virulent *Mycobacterium tuberculosis*. *J Immunol Res*. 2014. Article ID:385402 (*Equal first authorship).
29. Liu TB*, **Subbian S***, Pan W, Eugenin E, Xie J, Xue C. Cryptococcus inositol utilization modulates the host protective immune response during brain infection. *Cell Commun Signal*. 2014 Sept10;12(1):51. PMID:25201772 (Accepted; *Equal first authorship).
30. **Subbian S**, Eugenin E, Kaplan G. Detection of *Mycobacterium tuberculosis* in Latently Infected Lungs by Immunohistochemistry and Confocal Microscopy. *J Med Microbiol*. 2014 Aug 26. pii: jmm.0.081091-0. doi: 10.1099/jmm.0.081091-0. PMID:25161200.
31. Tsenova L, O'Brien P, Peixoto B, Soteropoulos P, Fallows D, Kaplan G, **Subbian S**. Etanercept exacerbates inflammation and pathology in a rabbit model of active pulmonary tuberculosis. *J Cytokine and Interferon Res*. 2014 Sep;34(9):716-726. PMID:24831609.
32. Manca C, Koo MS, Peixoto B, Fallows D, Kaplan G, **Subbian S**. Host targeted activity of pyrazinamide in *Mycobacterium tuberculosis* infection. *PLoS One*. 2013; Aug 28; 8(8):e74082. PMID: 24015316.
33. **Subbian S**, Bandyopadhyay N, Tsenova L, O'Brien P, Khetani V, Kushner NL, Peixoto B, Soteropoulos P, Bader JS, Karakousis PC, Fallows D, Kaplan G. Early innate immunity determines outcome of *Mycobacterium tuberculosis* primary infection in rabbits. *Cell Commun Signal*. 2013; Aug 19; 11(1):60. PMID: 23958185.
34. Das R, Koo MS, Kim BH, Jacob ST, **Subbian S**, Yao J, Leng L, Levy R, Murchison C, Burman WJ, Moore CC, Scheld WM, David JR, Kaplan G, MacMicking JD, Bucala R. Macrophage migration inhibition factor (MIF) is a critical mediator of the innate immune response to *Mycobacterium tuberculosis*. *Proc Natl Acad Sci (PNAS)*. 2013;110 (32):E2997-3006. PMID:23882081.
35. **Subbian S**, O'Brien P, Kushner NL, Yang G, Tsenova L, Peixoto B, Bandyopadhyay N, Bader JS, Karakousis PC, Fallows D, Kaplan G. Molecular immunologic correlates of spontaneous latency in a rabbit model of pulmonary tuberculosis. *Cell Commun Signal*. 2013 Feb 28; 11(1):16. PMID: 23448601.
36. **Subbian S**, Tsenova L, O'Brien P, Yang G, Kushner NL, Parsons S, Peixoto B, Fallows D, Kaplan G. Spontaneous latency in a rabbit model of pulmonary tuberculosis. *Am J Pathol*. 2012 Nov 181 (5):1711-24. PMID:22960076.
37. **Subbian S**, Tsenova L, Yang G, O'Brien P, Parsons S, Peixoto B, Taylor L, Fallows D, Kaplan G. Chronic pulmonary cavitary tuberculosis in rabbits: a failed host immune response. *Open Biol*. 2011 Dec;1(4):110016. PMID:22645653.
38. Koo MS*, **Subbian S***, Kaplan G. Strain specific transcriptional response in *Mycobacterium tuberculosis* infected macrophages. *Cell Commun Signal*. 2012 Jan 26;10(1):2. PMID:22280836. (*Equal first authorship).
39. **Subbian S**, Tsenova L, O'Brien P, Yang G, Koo MS, Peixoto B, Fallows D, Dartois V, Muller G, Kaplan G. Phosphodiesterase-4 inhibition alters gene expression and improves isoniazid-mediated clearance of *Mycobacterium tuberculosis* in rabbit lungs. *PLoS Pathog*. 2011 Sep;7(9):e1002262. PMID:21949656.
40. **Subbian S**, Tsenova L, O'Brien P, Yang G, Koo MS, Peixoto B, Fallows D, Zeldis JB, Muller G, Kaplan G. Phosphodiesterase-4 inhibition combined with isoniazid treatment of rabbits with pulmonary tuberculosis reduces macrophage activation and lung pathology. *Am J Pathol*. 2011 Jul;179(1):289-301. PMID:21703411.
41. Koo MS, Manca C, Yang G, O'Brien P, Sung N, Tsenova L, **Subbian S**, Fallows D, Muller G, Ehrt S, Kaplan G. Phosphodiesterase 4 inhibition reduces innate immunity and improves isoniazid clearance of *Mycobacterium tuberculosis* in the lungs of infected mice. *PLoS One*. 2011 Feb 25;6(2):e17091. PMID:21364878.
42. Kong Y, Yao H*, Ren H*, **Subbian S***, Cirillo SL, Sacchetti JC, Rao J, Cirillo JD. Imaging tuberculosis with endogenous beta-lactamase reporter enzyme fluorescence in live mice. *Proc Natl Acad Sci U S A*. 2010 Jul 6;107(27):12239-44. PMID:20566877. (*Equal second authorship).

43. Kong Y, **Subbian S**, Cirillo SLG, Cirillo JD. Application of optical imaging to study of extrapulmonary spread by tuberculosis. *Tuberculosis*.2009; 89 Suppl 1: S15-7. PMID:20006298.
44. Cirillo SLG, **Subbian S**, Chen B, Weisbrod TR, Jacobs Jr. WR, Cirillo JD. Protection of *Mycobacterium tuberculosis* from reactive oxygen species conferred by the *mel2* locus impacts persistence and dissemination. *Infect. Immun.* 2009 Jun;77(6):2557-67. PMID:19349422.
45. Khounlotham M, **Subbian D**, Smith III R, Cirillo SLG, Cirillo JD. *Mycobacterium tuberculosis* interferes with the response to infection by inducing the host ephA2 receptor. *J.Infect. Dis.* 2009 Jun 15;199(12):1797-806. PMID:19426113.
46. Park B, **Subbian S**, El-Etr SH, Cirillo SLG, Cirillo JD. Use of gene dosage effects for a whole-genome screen to identify *Mycobacterium marinum* macrophage infection loci. *Infect. Immun.* 2008 Jul;76(7):3100-15. PMID:18443095.
47. Dusthacker A, Kumar V, **Subbian S**, Sivaramakrishnan G, Zhu G, Subramanyam B, Hassan S, Nagamaiah S, Chan J, Narayanan PR. Construction and evaluation of luciferase reporter phages for the detection of non-replicating tubercle bacilli. *J Microbiol Meth.* 2008 Apr; 73(1):18-25. PMID:18272245.
48. **Subbian S**, Narayanan S. Identification and characterization of the regulatory elements of the inducible acetamidase operon from *Mycobacterium smegmatis*. *Can J Microbiol.* 2007 May; 53(5):599-606. PMID:17668018.
49. Subbian S, Mehta PK, Cirillo SLG, Bermudez LE, Cirillo JD. A *Mycobacterium marinum mel2* mutant is defective for growth in macrophages producing reactive oxygen and nitrogen species. *Infect. Immun.* 2007 Jan; 75(1):127-34. PMID:17030568.
50. **Subbian S**, Mehta PK, Cirillo SLG, Bermudez LE, Cirillo JD. The *Mycobacterium marinum mel2* locus displays similarity to bacterial bioluminescence systems and plays a role in defense against reactive oxygen and nitrogen species. *BMC Microbiol.* 2007 Jan 19; 7:4. PMID:17239244.
51. Mehta PK, Pandey AK, **Subbian S**, El-Etr SH, Cirillo SLG, Samrakandi MM, Cirillo JD. Identification of *Mycobacterium marinum* macrophage infection mutants. *Microbial Pathogenesis.* 2006; 40(4):139-151. PMID:16451826.
52. El-Etr SH, **Subbian S**, Cirillo SLG, Cirillo JD. Identification of two *Mycobacterium marinum* loci that affect interactions with macrophages. *Infect. Immun.* 2004 Dec; 72(12): 6902-13. PMID:15557611.
53. Narayanan S, **Subbian S**, Ranganathan A, Sambandamurthy VK, Narayanan PR. Transcriptional analysis of inducible acetamidase gene of *Mycobacterium smegmatis*. *FEMS Microbiol Lett:* 2000; 192: 263-268. PMID:11064205.

B. Books, Monographs and Chapters :

1. Singh P, Kolloli A, **Subbian S**. 2018. *Chapter 4.* Animal Models of Tuberculosis. In Venketaraman (Eds). *Understanding the Host Immune Response Against Mycobacterium tuberculosis Infection.* London, UK: Springer-Nature International Publishing AG.
2. Kolloli A, Singh P and **Subbian S**. 2018. *Chapter 3.* Granulomatous Response to *Mycobacterium tuberculosis* infection. In Venketaraman (Eds). *Understanding the Host Immune Response Against Mycobacterium tuberculosis Infection.* London, UK: Springer-Nature International Publishing AG.
3. **Subbian S**, Karakousis PC, Kaplan G. 2016. Rabbit model of tuberculosis. Chapter 24; Section 5: In vivo laboratory models of tuberculosis in Many Hosts of Mycobacteria: Tuberculosis, Leprosy, and other Mycobacterial Diseases of Man and Animals. Mukundan H, Waters RW, Chambers MA, Larsen MH (Eds.). CAB International Publications, Wallingford, UK.

C. Other Articles (Reviews, Editorials, etc. In Journals; Chapters; Books; other Professional Communications):

1. **Subbian S**, Park B, Cirillo SLG, Cirillo JD. Illuminating a new path: Bioluminescence-related pathways and resistance to reactive oxygen and nitrogen species. *Proc US-Japan Co-op. Med. Sci. Prog.* 2006 Jul: 61-65.
2. Cirillo SLG, Mehta PK, Pandey AK, **Subbian S**, Park B, Khounlotham M, El-Etr SH, Samrakandi MM, Cirillo JD. Identification of mycobacterial genes that affect interactions with macrophages. *Proc. US-Japan Co-op. Med. Sci. Prog.* 2005 Jul: 77-81.

D. Abstracts

1. Kumar R, Kolloli A, Singh P, Bushkin Y, Shi L, Tyagi S, Subbian S. Developing and exploring the spatial expression of immune-metabolic markers in pulmonary granulomas. EMBO-India Research Symposium, New Delhi, Feb11-14, 2020.
2. Singh P, Kolloli A and **Subbian S**. Effect of BCG vaccination on the innate immune response to *Mycobacterium tuberculosis* in infants. Symposium on Immune Cells at the Forefront of Health and Disease, Center for Infection, Immunity and Inflammation, Rutgers Biomedical and Health Sciences, Newark, NJ. May 21-22, 2019.
3. Singh P, Kolloli A and **Subbian S**. Investigating trained innate immune response to *Mycobacterium tuberculosis* infection in human monocytic cells. Annual Department of Medicine Research Day, Rutgers University, Newark, NJ, USA. 16th May, 2019.
4. Singh P, Kolloli A and **Subbian S**. Effect of BCG on the immune response to *Mycobacterium tuberculosis* in human monocytic cells. Theobald Smith Society of American Society for Microbiology (ASM) Spring Meeting. Rutgers University, New Brunswick, NJ, USA. April 25th, 2019.
5. Kolloli A, Singh P, Sigal A and **Subbian S**. Differential host immune response to infection with singles and aggregates of *Mycobacterium tuberculosis* in rabbit lungs. Symposium on Immune Cells at the Forefront of Health and Disease, Center for Infection, Immunity and Inflammation, Rutgers Biomedical and Health Sciences, Newark, NJ. May 21-22, 2019.
6. Kolloli A, Singh P, Sigal A and **Subbian S**. Aggregation state of *Mycobacterium tuberculosis* differentially regulates host immunity and augments pathogenicity in a rabbit model of pulmonary infection. Seventeenth Annual Department of Medicine Research Day, Rutgers University, Newark, NJ, USA. 16th May, 2019.
7. Kolloli A, Singh P, Sigal A and **Subbian S**. Aggregation of *Mycobacterium tuberculosis* augments pathogenicity in a rabbit model of pulmonary tuberculosis. Theobald Smith Society of American Society for Microbiology (ASM) Spring Meeting. Rutgers University, New Brunswick, NJ, USA. April 25th, 2019.
8. Zentner I, **Subbian S** and Vinnard C. Immune activation and NAT2 genotype are independently associated with BCL-2 gene expression in PBMCs of HIV/tuberculosis patients. International Union Against Tuberculosis and Lung Diseases (IUTLD), June-2019.
9. Mukundan S, Singh P, **Subbian S** and Parekkadan B. Bioengineered In vitro 3D Miniaturized Tuberculosis Mimetic Granulomas. Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, Oct-16-19, 2019.
10. **Subbian S** and Chauhan N. Oxidative stress resistance and modulation of macrophage proinflammatory response by *Candida albicans* MAM33. FEBS advanced lecture course on Human Fungal Pathogens, La Colle sur Loup, France. May13-19, 2017.
11. Mavrianos J, Ranpura A, Ranganathan D, **Subbian S** and Chauhan N. Oxidative stress resistance and modulation of macrophage proinflammatory response by *Candida albicans* mitochondrial mutants. 13th ASM Conference on Candida and Candidiasis, Seattle, WA, 04/13/2016.
12. Shepherd TF, Janagama H, Sule P, Galbadage T, Cirillo SLG, Zinniel DK, **Subbian S**, Barletta RG and Cirillo JD. *Mycobacterium tuberculosis luxR1 (Rv3295)* is Important for pulmonary tuberculosis in mice. Molecular Basis of Infectious Diseases Retreat 2015 at Texas A&M Health Science Center, Houston, Texas. Mar. 2015.
13. Shepherd TF, Galbadage T, Janagama H, **Subbian S**, Cirillo JD. MMAR_1239 is a transcriptional regulator important for mycobacterial virulence. Graduate student's organization symposium at Texas A&M Health Science Center, College Station, Texas. Apr. 2014.
14. Pandey R, **Subbian S** and Rodriguez M. Role of iron storage proteins in iron homeostasis and pathogenesis in *Mycobacterium tuberculosis*. World TB day-2014, New York Academy of Sciences, Mar. 2014.
15. Tsenova L, Soteropoulos P, Fallows D, Kaplan G and **Subbian S**. Etanercept exacerbates inflammation and pathology in a rabbit model of active pulmonary tuberculosis. World TB day-2014, New York Academy of Sciences, Mar. 2014.
16. **Subbian S**, Bandyopadhyay N, Tsenova L, O'Brien P, Khetani V, Kushner NL, Peixoto B, Bader JS, Karakousis PC, Fallows D, Kaplan G. Differential activation of early innate immunity predicts the outcome of *Mycobacterium tuberculosis* infection in rabbit lungs (Abstract # 13). "Symposium on Innate Immune Mechanisms Controlling Inflammation and Infection" at the New Jersey Medical School, UMDNJ, Newark, NJ on March 18-19, 2013.

17. Galbadage T, Patel D, **Subbian S**, Zinniel DK, Cirillo SLG, Barletta RG and Cirillo JD. Virulence gene regulatory locus MMAR_1239 in *Mycobacterium marinum*. Molecular Basis of Infectious Diseases Retreat 2012 at Texas A&M Health Science Center, Houston, Texas. Mar. 2012.
18. **Subbian S**, Tsenova L, O'Brien P, Yang G, Koo MS, Peixoto B, Fallows D, Zeldis JB, Muller G, Kaplan G. Impact of the modulation of macrophage activation by a Phosphodiesterase-4 (PDE4) inhibitor on the isoniazid response to *Mycobacterium tuberculosis*. Gordon Research Conference on Phagocytes held at Davidson College, Davidson, NC during June 19-24, 2011.
19. Kong Y, Yao H, Ren H, **Subbian S**, Rao J and Cirillo JD. Application of reporter-enzyme-fluorescence imaging to the study of Tuberculosis *in vivo*. (Abstract # 09-GM-A-3325-ASM). American Society for Microbiology General Meeting at Philadelphia during May 17-21, 2009.
20. Cirillo SLG, **Subbian S**, Kong Y, Chang MH, Nawar H, Shi Y, Cirillo JD. Molecular imaging strategies for tuberculosis: visualizing the White Plague. (Abstract# 0046). World Molecular Imaging Congress at the Acropolis Convention Center, Nice, France during September 10-13, 2008.
21. Khounlotham M, **Subbian S**, Smith R, Cirillo SLG, Cirillo JD. EphA2-deficient mice display altered granuloma morphology and lung immune cell composition following tuberculosis infection. Molecular Basis of Infectious Diseases Retreat 2012 at Texas A&M Health Science Center, Houston, Texas. March 28, 2008.
22. Mehta PK, **Subbian S**, Cirillo SLG and Cirillo JD. Association of mycobacterial mel2 locus with enhanced TNF-alpha production and increased intracellular survival in murine macrophages. International Symposium on New Frontiers in Tuberculosis Research. International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi, India. December 4-6, 2006.
23. **Subbian S**, Cirillo SLG and Cirillo JD. Illuminating reactive oxygen and nitrogen species resistance mechanisms through analysis of bioluminescence-like genes in mycobacteria. (Abstract # 433). Keystone symposia on Tuberculosis: From Lab Research to Field Trials at Vancouver, Canada during March 20-25, 2007.
24. Haight J, Campbell M, Williams AM, **Subbian S**, Cirillo SLG, Willey J, and Cirillo JD. Use of streptomycetes to study quorum sensing in mycobacteria. Sixth Annual Nebraska-BRIN/INBRE meeting, Lincoln, NE. Jul. 2007.
25. Williams AM, Campbell M, Perlinger T, **Subbian S**, Cirillo SLG, Willey J and Cirillo JD. Isolation of a biologically active quorum sensing molecule from *Mycobacterium smegmatis*. Sixth Annual Nebraska-BRIN/INBRE meeting, Lincoln, NE. Jul. 2007.
26. **Subbian S**, Mehta PK, Cirillo SLG, Cirillo JD. The mycobacterial mel2 locus displays similarity to microbial bioluminescence systems and affects survival in macrophages. 106th ASM meeting, Orlando, Florida, USA. May. 2006.
27. **Subbian S**, Narayanan S, Narayanan PR. Regulators and operators involved in the regulation of the highly inducible acetamidase operon from *M. smegmatis*. Bioinformatics in Tuberculosis Research. Indian Institute of Technology (IIT), Karaghpur, India. Jan. 2003.
28. **Subbian S**, Narayanan S, Narayanan PR. Transcriptional regulation of acetamidase gene expression in *M. smegmatis*. International Symposium on Mycobacterial Diseases: Pathogenesis, Protection and Control, Kolkatta, India. Jan. 2001.

E. Reports: The following data documents were submitted to GenBank/Gene Expression Omnibus (GEO) of National Center for Biotechnology Information (NCBI):

- 1). Nucleotide sequence accession numbers: AY623663 (*mel*₁ locus) and AY623664 (*mel*₂ locus) in *Mycobacterium marinum* (GenBank).
- 2). Protein sequence accession numbers: AAV32079 – AAV32089 (MelA – MelK) in *Mycobacterium marinum*. (GenBank).
- 3). GSE25313- Effect of PDE4 inhibition on host gene expression of Mtb-infected mouse lungs. (Mice lung microarray gene expression data submission to GEO; Approved 11/13/2010).
- 4). GSE27992- PDE-4 inhibition alters gene expression and improves INH-mediated clearance of Mtb in rabbit lungs (Rabbit lung microarray gene expression data submission to GEO; Approved 3/16/2011).
- 5). GSE33094- Kinetics of progressive pulmonary cavitary TB disease in rabbits (Rabbit lung microarray gene expression data submission to GEO; Approved 12/07/2011).

- 6). GSE48027- Host directed activity of pyrazinamide in *Mycobacterium tuberculosis* infection (Mice lung microarray gene expression data submission to GEO; Approved 07/28/2013).
- 7). GSE39219- Spontaneous latency in a rabbit model of pulmonary tuberculosis (Rabbit lung microarray gene expression data submission to GEO; Approved 07/11/2012).
- 8). GSE49947- Early innate immunity determines outcome of *Mycobacterium tuberculosis* pulmonary infection in rabbits (Rabbit lung microarray gene expression data submission to GEO; Approved 09/17/2013).
- 9). GSE54442 - Rabbit lung microarray gene expression during Etanercept treatment; transcriptional data submission to GEO; Approved 01/27/2014).
- 10). GSE58810 – A ferritin mutant induces protective immunity against virulent *mycobacterium tuberculosis* infection; BCG or Mtb-KO-for bfrB vaccinated and Wt Mtb infected mice lung transcriptome data from microarray experiments submitted to GEO; Approved 09/01/2014).

PRESENTATIONS:

A. Scientific (2011 onwards):

1. **Subbian S.** Exploration of a Rabbit model of pulmonary *Mycobacterium tuberculosis* infection, the University of Tennessee, Knoxville, TN, USA, June-2019.
2. **Subbian S.** Pulmonary *Mycobacterium tuberculosis* infection in rabbits. Public Health Research Institute, NJMS, Newark, NJ, USA, June-2019.
3. **Subbian S.** Exploring the Rabbit Model of Pulmonary Tuberculosis. NIH/NIAID workshop on small animal models for HIV and co-morbid conditions, NIH, Bethesda, MD, USA, June-2019.
4. **Subbian S.** Pulmonary Mixed *Mycobacterium tuberculosis* infection in a Rabbit Model. World TB Day-2019. Albany Medical Center, Albany, NY, USA, Mar-2019.
5. **Subbian S.** Rabbit Model of Pulmonary Tuberculosis for Host-directed therapy. Houston Methodist Hospital Research Institute, Houston, TX, USA, Feb-2019.
6. **Subbian S.** Host-directed therapy for tuberculosis. Dept. of Microbiology, University of Tennessee, Knoxville, TN, USA, 2018.
7. **Subbian S.** Serial Killing of Macrophages by *Mycobacterium tuberculosis*. American Society for Microbiology (ASM) NJ branch, Seton Hall University, NJ, USA. 2018.
8. **Subbian S.** Pathogenicity of clumped and de-clumped Mtb in animal models of pulmonary TB. (Oral presentation) at the Bill and Melinda Gates Foundation Meeting on Aerobiology at Seattle, Washington on 3/8/2017.
9. **Subbian S,** Tsenova L, Kim MJ, Wainwright H, Visser A, Bandyopadhyay N, Bader JB, Karakousis PC, Murmann G, Bekker LG, Russell DG and Kaplan G. Lesion specific immune response in granulomas of patients with pulmonary tuberculosis. Keystone Symposia on Host response in Tuberculosis (J3 &J4) at Santa Fe, New Mexico on 01/24/2015.
10. **Subbian S.** Changing the course of TB pathogenesis and treatment. Oral presentation at Keystone Symposia on Novel Therapeutic Approaches to Tuberculosis (C7-2014) at Keystone, Colorado on 04/03/2014.
11. **Subbian S.** Early immune response to *Mycobacterium tuberculosis* infection in rabbit lungs. Oral presentation at TB club of UMDNJ on 04/01/2013.
12. **Subbian S.** Effect of CC11050 in mouse and rabbit models of pulmonary TB. (Oral presentation) at the Bill and Melinda Gates Foundation Drug Accelerator Meeting at Washington DC on November 11-12, 2012.
13. **Subbian S.** Pulmonary cavitary TB in rabbits: a failed host immune response. Oral presentation at TB club of UMDNJ on 01/09/2012.
14. **Subbian S,** Karakousis PC and Kaplan G. Active cavitary TB and spontaneous latency in rabbits (oral presentation by Subbian S) at a Comparative Mycobacteriology Symposium on “The Many Hosts of Mycobacteria V: Advancing Translational Science” held at NIH, Bethesda, MD during July 16-17, 2012.
15. **Subbian S** and Kaplan G. Characterizing transcriptional responses in rabbits actively and latently infected with *Mycobacterium tuberculosis*. Oral presentation/group discussion at the Johns Hopkins University Center for TB Research Seminar on June 21, 2012.
16. **Subbian S.** Perturbing host-pathogen interactions as a means of improving TB treatment. Oral presentation at the institutional seminar at PHRI, UMDNJ on 02/02/2011.