CURRICULUM VITAE

Raphael Simon, PhD
Assistant Professor, Center for Vaccine Development
University of Maryland School of Medicine

DATE: September 20, 2016

CONTACT INFORMATION

Center for Vaccine Development
University of Maryland School of Medicine
685 W. Baltimore St., HSF I, Rm. 480
Baltimore, MD 21201
Tel. (410) 706-8085
E-mail: rsimon@medicine.umaryland.edu

Foreign Languages

Hebrew – fluent
French – basic

EDUCATION

2001	B.S.	University of California at Santa Barbara, Santa Barbara, CA Major: Microbiology
2003	M.A.	University of California at Santa Barbara, Santa Barbara, CA Program: Molecular, Cellular and Developmental Biology
2007	Ph.D.	University of California at Santa Barbara, Santa Barbara, CA Program: Molecular, Cellular and Developmental Biology Thesis Title: The Interferon and innate immune response to *Salmonella* infection Thesis Advisor: Prof. Charles E. Samuel, Ph.D.

POST GRADUATE EDUCATION AND TRAINING

June 2007- Aug 2007	Postdoctoral Fellow Department of Molecular, Cellular and Developmental Biology University of California at Santa Barbara, Santa Barbara, CA Mentor: Prof. Charles E. Samuel, Ph.D.
September 2007- June 2009	UC Discovery Fellow College of Engineering University of California at Santa Barbara, Santa Barbara, CA Mentors: Matthew Tirrell, Ph.D, Dean, College of Engineering.; Pierre Wiltzius Ph.D., Dean of Math, Life and Physical Sciences
July 2009-July 2011	Vaccinology Fellow Center for Vaccine Development University of Maryland School of Medicine, Baltimore, MD Mentor: Myron M. Levine, M.D., D.T.P.H., Director Center for Vaccine Development
July 2011- February 2012	Postdoctoral Fellow Center for Vaccine Development

University of Maryland School of Medicine, Baltimore, MD
Mentor: Myron M. Levine, M.D., D.T.P.H., Director Center for Vaccine Development

EMPLOYMENT HISTORY

July 2013 - present	Assistant Professor & Head Antigen Purification Facility Center for Vaccine Development University of Maryland School of Medicine, Baltimore, MD
2012 - 2013	Instructor & Head Antigen Purification Facility Center for Vaccine Development University of Maryland School of Medicine, Baltimore, MD
2008 - 2009	Program Manager College of Engineering University of California at Santa Barbara, Santa Barbara, CA
1999	Summer Research Associate in Immunology Division PDL Biopharma, Fremont, CA

HONORS AND AWARDS

1999	Deans Honors, College of Letters and Sciences, University of California, Santa Barbara
2007 - 2009	UC Discovery Fellowship
2009 - 2011	NIH/NRSA T32 Vaccinology Fellowship
2011	National Foundation for Infectious Disease Maurice R. Hilleman Early-Stage Career Investigator Award

ADMINISTRATIVE SERVICE

2014 – 2015	UMB Commercial Ventures and Intellectual Property Scientific Review Committee
2015 – 2016	UMB Commercial Ventures and Intellectual Property Scientific Review Committee
2016 – 2017	UMB Commercial Ventures and Intellectual Property Scientific Review Committee
2014 – 2016	Alternate member for the Department of Medicine on the UM School of Medicine Council
2016 – 2018	Alternate member for the Department of Medicine on the UM School of Medicine Council

NATIONAL AND INTERNATIONAL SERVICE

2013 - 2015	Continuing professional education committee member for National Foundation for Infectious Diseases

2009 - present	Ad-hoc manuscript review for scientific journals including: Vaccine, Virulence, Clinical and Vaccine Immunology, Journal of Immunological Methods, Journal of Infectious Diseases, Expert Reviews of Vaccines, Applied and Environmental Microbiology, PLoS ONE, PLoS NTD
2014- 2017	Organizing and Scientific committee of National Foundation for Infectious Diseases Annual Conference on Vaccine Research
2015	Guest Editor – "NFID ACVR 2015" supplement for Journal Vaccine
2015-2017	Member of Editorial Board of Clinical & Vaccine Immunology
2015	Invited grant reviewer for New Zealand Marsden Fund
2016	Invited grant reviewer for DOD CDMRP

TEACHING SERVICE

2000 - 2006	Department of Molecular, Cellular and Developmental Biology University of California at Santa Barbara, Santa Barbara, CA Teaching Assistant/Instructor in: Biochemistry (2000), AIDS and the Immune System (2001), Immunology (2002), Animal Virology (2002-2006)
2011	Center for Vaccine Development The University of Maryland School of Medicine, Baltimore, MD Mentored summer student Marine Jourdain June - September 2011.
2012	Center for Vaccine Development The University of Maryland School of Medicine, Baltimore, MD Mentored undergraduate intern Josh Kassner June 2012 – June 2013.
2013, 2015	Center for Vaccine Development The University of Maryland School of Medicine, Baltimore, MD Lecturer for course in Vaccinology
2014-present	Center for Vaccine Development The University of Maryland School of Medicine, Baltimore, MD Postdoctoral Mentor: Scott Baliban, Ph.D.
2015-2016	Center for Vaccine Development The University of Maryland School of Medicine, Baltimore, MD Postdoctoral Mentor: Mohammed Amin, Ph.D.
2016-present	Center for Vaccine Development The University of Maryland School of Medicine, Baltimore, MD Postdoctoral Mentor: Nicolas Hegerle, Ph.D.

PUBLICATIONS

Peer reviewed journal articles

1. **Simon R** and Samuel CE. 2007. Activation of NF-κB dependant gene expression by *Salmonella* Flagellins FliC and FljB. Biochem. Biophys. Res. Comm. 355:280-285

2. **Simon R** and Samuel CE. 2007. Innate Interferon Response in Macrophage and Epithelial Cells Infected with Wild-type compared to DNA Adenine Methylase and Flagellin Mutant *Salmonella enterica* Serovar Typhimurium. Interferon & Cytokine Res. 27:317-327
3. **Simon R**, Heithoff DM, Mahan MJ and Samuel CE. 2007. Comparison of tissue-selective proinflammatory gene induction in mice infected with wild-type, DNA adenine methylase-deficient, and flagellin-deficient *Salmonella enterica*. Infect. Immun. 75:5627-5639
4. **Simon R** and Samuel CE. 2008. Interleukin-1β Secretion is Activated Comparably by FliC and FljB Flagellins but Differentially by Wild-Type and DNA Adenine Methylase-deficient *Salmonella*. Interferon & Cytokine Res. 28:661-666
5. **Simon R**, Tennant SM, Galen JE, Levine MM. 2011. Mouse models to assess the efficacy of non-typhoidal *Salmonella* vaccines: Revisiting the role of host innate susceptibility and routes of challenge. Vaccine. 29 (32): 5094-5106
6. Tennant SM, Wang JY, Galen JE, **Simon R**, Passetti M, Gat O, Levine MM. 2011. Engineering and pre-clinical evaluation of attenuated non-typhoidal *Salmonella* strains serving as live oral vaccines and as reagent strains. Infect. Immun. Oct;79(10):4175-85
7. **Simon R,** Tennant SM, Wang JY, Schmidlein PJ, Lees A, Ernst RK, Pasetti MF, Galen JE, Levine MM. 2011. *Salmonella* Enteritidis Core-O Polysaccharide (COPS) conjugated to H:g,m flagellin as a candidate vaccine for protection against invasive infection with *Salmonella* Enteritidis. Infect. Immun. Oct;79(10):4240-9
8. Gat O**,** Galen JE, Tennant SM, **Simon R**, Blackwelder WC, Silverman DJ, Passetti M, Levine MM. 2011. Cell-associated flagella enhance the protection conferred by mucosally-administered attenuated *Salmonella* Paratyphi A vaccines. PLoS Negl. Trop. Dis. 5(11): e1373. doi:10.1371/journal.pntd.0001373
9. **Simon R** and Levine MM. 2012. Glycoconjugate vaccine strategies for protection against invasive *Salmonella* infections. Hum. Vacc. Immunother. Apr;8(4):494 - 498
10. Wahid R, **Simon R**, Zafar SJ, Levine MM, Sztein MB. 2012. Live oral typhoid vaccine Ty21a induced cross reactive humoral immune responses against *S*. Paratyphi A and *S*. Paratyphi B in humans. Clin. Vacc. Immunol. Jun;19(6):825-34
11. **Simon R,** Wang JY, Boyd MA, Tulaparkur EM, Ramachandran G, Tennant SM, Pasetti MF, Galen JE, Levine MM. 2013. Sustained protection in mice immunized with fractional doses of *Salmonella* Enteritidis core and O polysaccharide-flagellin glycoconjugates. PLOS ONE May;31;8(5):e64680
12. Boyd MA, Tennant SM, Saague VA, **Simon R**, Muhsen K, Ramachandran G, Cross AS, Galen JE, Pasetti MF, Levine MM. 2014. Serum bactericidal assays to evaluate typhoidal and nontyphoidal *Salmonella* vaccines. Clin. Vacc. Immunol. May;21(5):712-21
13. **Simon R**, Curtis B, Deumic V, Nicki J, Tennant SM, Pasetti MF, Lees A, Wills PW, Chacon M, Levine MM. 2014. A scalable method for biochemical purification of *Salmonella* flagellin. Protein Expr. Purif. Jul;19(102C):1-7
14. Tennant SM, Schmidlein P, **Simon R**, Pasetti MF, Galen JE, Levine MM. 2015. Refined live attenuated *Salmonella* Typhimurium and Enteritidis vaccines mediate homologous and heterologous serogroup protection in mice. Infect. Immun. Dec;83(12):4504-12
15. Curtis B, Grassel C, Laufer RS, Sears KT, Pasetti MF, Barry EM, **Simon R**. 2016. Simple method for purification of enterotoxigenic *Escherichia coli* fimbriae. Protein Expr. Purif. Mar;119:130-5
16. Ramachandran G, Tennant SM, Boyd MA, Wang JY, Tulapurkar ME, Pasetti MF, Levine MM, **Simon R**. 2016. Functional activity of antibodies directed towards flagellin proteins of non-typhoidal *Salmonella*. PLOS ONE. Mar 21;11(3):e0151875
17. Tennant SM, MacLennan CA, **Simon R**, Martin LB, Khan MI. 2016. Nontyphoidal *Salmonella* disease: Current status of vaccine research and development. Vaccine. Jun 3;34(26):2907-10
18. Martin LB, **Simon R**, Maclennan CA, Tennant SM, Sahastrabuddhe S, Khan MI. 2016. Status of paratyphoid fever vaccine research and development. Vaccine. Jun 3;34(26):2900-2
19. Ramachandran G, Boyd MA, MacSwords J, Higginson E, **Simon R**, Galen JE, Pasetti MF, Levine MM, Tennant SM. 2016. Opsonophagocytic Assay to Evaluate Immunogenicity of Non-Typhoidal *Salmonella* Vaccines. Clin. Vacc. Immunol. Jun 6;23(6):520-3
20. Higginson EE, **Simon R**, Tennant SM. 2016. Animal models for Salmonellosis – applications in vaccine research. Clin. Vacc. Immunol. Sep 6;23(9):746-56
21. Fuche FJ, Sow O, **Simon R**, Tennant SM. 2016. *Salmonella* Group C: Current status of vaccines and why they are needed. Clin. Vacc. Immunol. Sep 6;23(9):737-45

22. Ifeonu O, **Simon R**, Tennant SM, Sheoran AS, Dali MC, Felix V, Kissinger JC, Widmer G, Levine MM, Tzipori S, Silva JC. 2016. *Cryptosporidium hominis* Gene Catalog: a resource for the selection of novel *Cryptosporidium* vaccine candidates. Database. Manuscript accepted.

Non-peer reviewed journal articles

1. Galen JE, **Simon R**, Ernst RK. 2011. *Salmonella* expressing detoxified lipopolysaccharide is immunogenic and protective both as an attenuated vaccine and for delivery of foreign antigens. Expert Reviews of Vaccines. Dec;10(12):1679-82

Abstracts and/or Proceedings

1. **Simon R,** Heithoff DM, Mahan MJ and Samuel CE. Innate Interferon Response in Mice and Macrophage Cells Infected with Wild-type Dam+ versus Dam- Mutant *Salmonella* Typhimurium. Poster presentation at the 2005 Conference of International Union of Microbiological Societies, San Francisco, CA.
2. **Simon R**, Tennant SM, Wang JY, Schmidlein PJ, Lees A, Ernst RK, Pasetti MF, Galen JE, Levine MM. Design, Synthesis and Characterization of *Salmonella* Enteritidis Core-O Polysaccharide (C-OPS) conjugated to Enteritidis flagellin (H:g,m) as a candidate vaccine to prevent invasive *Salmonella* Enteritidis infections. Oral presentation at the 2010 National Meeting of Regional Centers of Excellence representing Mid-Atlantic RCE, Las Vegas, NV
3. **Simon R.** Core-OPS:Flagellin Conjugate Vaccine for protection against infection with non-typhoidal *Salmonella*. Invited speaker for the "Invasive nontyphoidal *Salmonella* disease in Africa Symposium" at the 59th American Society for Tropical Medicine and Hygiene meeting, 2010, Atlanta, GA
4. **Simon R**, Tennant SM, Wang JY, Schmidlein PJ, Lees A, Ernst RK, Pasetti MF, Galen JE, Levine MM. *Salmonella* Enteritidis Core-O Polysaccharide (COPS) conjugated to Enteritidis flagellin (H:g,m) as a candidate vaccine for protection against *Salmonella* Enteritidis infection. Oral presentation at the 2011 National Meeting of Regional Centers of Excellence representing Mid-Atlantic RCE, Denver, CO
5. **Simon R,** Tennant SM, Wang JY, Schmidlein PJ, Lees A, Ernst RK, Pasetti MF, Galen JE, Levine MM. *Salmonella* Enteritidis Core-O Polysaccharide (COPS) conjugated to Enteritidis flagellin (H:g,m) as a candidate vaccine for protection against *Salmonella* Enteritidis infection. Poster presentation at the 2011 National Foundation for Infectious Disease 14th Annual Conference on Vaccine Research, Baltimore, MD
6. **Simon R**. *Salmonella* Enteritidis Core-O Polysaccharide (COPS) conjugated to Enteritidis flagellin (H:g,m) as a candidate vaccine for protection against *Salmonella* Enteritidis infection. Oral presentation for Maurice R. Hilleman award at the 2011 National Foundation for Infectious Disease 14th Annual Conference on Vaccine Research, Baltimore, MD
7. **Simon R**, Tennant SM, Wang JY, Schmidlein PJ, Lees A, Ernst RK, Pasetti MF, Galen JE, Levine MM. *Salmonella* Enteritidis Core-O Polysaccharide (COPS) conjugated to Enteritidis flagellin (H:g,m) as a candidate vaccine for protection against *Salmonella* Enteritidis infection. Oral presentation at 2011 meeting of Vaccines for Enteric Diseases, Cannes, France
8. **Simon R**, Tennant SM, Wang JY, Schmidlein PJ, Lees A, Ernst RK, Pasetti MF, Galen JE, Levine MM. *Salmonella* Core-O Polysaccharide (COPS) conjugated to flagellin as a candidate vaccines for protection against invasive *Salmonella* infections. Oral presentation at 2013 8th International conference on typhoid fever and other invasive salmonelloses, Dhaka, Bangladesh
9. **Simon R,** Tennant SM, Wang JY, Ernst RK, Pasetti MF, Lees A, Galen JE, Levine MM. Non-typhoidal *Salmonella* (NTS) Core-O Polysaccharide (COPS) conjugated to the homologous flagellin as candidate vaccines for protection against invasive NTS infections. Oral presentation at 2013 meeting of Vaccines for Enteric Diseases, Bangkok, Thailand
10. Tennant SM**, Simon R**, Ramachandran G, Boyd MA, Tulapurkar M, Pasetti MF, Levine MM. Functional bactericidal activity *in-vitro* and protective activity in animal models of antibodies specific for *Salmonella* flagellin proteins. Poster presentation at 2015 9th International Conference on Typhoid and Invasive NTS Disease, Bali, Indonesia
11. **Simon R**, Tennant SM, Curtis B, Wang JY, Lees A, Pasetti MF, Galen JE, Levine MM. Bivalent Core and O polysaccharide (COPS)-Flagellin conjugate vaccine against invasive non-typhoidal *Salmonella* Enteritidis and Typhimurium infections. Oral presentation at 2015 9th International Conference on Typhoid and Invasive NTS Disease, Bali, Indonesia