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Myron M. Levine, MD, DTPH

Simon and Bessie Grollman Distinguished Professor

Academic Title:

Professor

Primary Appointment:

Medicine

Secondary Appointment(s):

Microbiology and Immunology, Epidemiology & Public Health, Pediatrics

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Education and Training

City College of New York, B.S., 1963

Medical College of Virginia, M.D., 1967

London School of Hygiene and Tropical Medicine (with Distinction), D.T.P.H., 1974

Internship, Bronx Municipal Hospital Center, Albert Einstein College of Medicine, Pediatrics, 1967-1968

Residency, Bronx Municipal Hospital Center, Albert Einstein College of Medicine, Pediatrics, 1968-1970

Fellowship, Albert Einstein College of Medicine, Pediatric Infectious Diseases and Immunology, 1970

Fellowship, University of Maryland School of Medicine, Division of Infectious Diseases, 1970-1972

Biosketch

Dr. Levine has worked on infectious disease research, continuously, since 1970. He co-founded the Center for Vaccine Development (CVD) in 1974 and served as Director from inception until 2015. He has spent considerable time in developing countries working on the epidemiology, treatment, and prevention of infectious diseases and applied this field experience to studies of the pathogenesis of such infections and development and testing of vaccines.

For 42 years, Dr. Levine has conducted Phase 1, 2, 3, and 4 clinical trials to evaluate the safety, immunogenicity, and efficacy of a wide array of vaccines; served as a clinician in vaccine testing for both adults and children; designed and supervised domestic and international epidemiologic studies; overseen research activities in the laboratory; and supervised development of diagnostic assays for use in developing countries and subsequent testing in field trials. His laboratory research has focused on the construction and characterization of attenuated strains of *Salmonella* Typhi, *S. Paratyphi A*, non-typhoidal *Salmonella* serovars, and *Shigella* to serve as live oral vaccines and as live vectors for the expression of foreign antigens. Multiple constructs have progressed from animal models to human trials.

Dr. Levine has designed and supervised large-scale, randomized, controlled field trials that investigated the efficacy of live oral typhoid vaccine Ty21a, which led to its licensure by the US Food and Drug Administration (FDA). Post-licensure work with *Haemophilus influenzae* type b conjugate vaccine led to early introductions into the routine infant immunization schedule in Chile (1996) and Mali, West Africa (2005). After years of challenge trials and an effective clinical trial, the single-dose oral cholera vaccine, Vaxchora, was approved for licensure by the FDA in 2016.

Research/Clinical Keywords

Salmonella Typhi, *S. Paratyphi A*, non-typhoidal *Salmonella* serovars, *Shigella*, *Escherichia coli*, *Vibrio cholerae* O1, *Shigella*, *Haemophilus influenzae*, live oral vaccines, vaccine development, conjugate vaccines, clinical trials, pathogenesis, human immune response.

Highlighted Publications

Dr. Levine has 613 peer reviewed papers, 117 book chapters, and is the Senior Editor of the 4th edition of *New Generation Vaccines*, a textbook of research vaccinology.

His most recent publications include:

Liu J, Platts-Mills JA, Juma J, Kabir F, Nkeze J, Okoi C, Operario DJ, Uddin J, Ahmed S, Alonso PL, Antonio M, Becker SM, Blackwelder WC, Breiman RF, Faruque AS, Fields B, Gratz J, Haque R, Hossain A, Hossain MJ, Jarju S, Qamar F, Iqbal NT, Kwambana B, Mandomando I, McMurry TL, Ochieng C, Ochieng JB, Ochieng M, Onyango C, Panchalingam S, Kalam A, Aziz F, Qureshi S, Ramamurthy T, Roberts JH, Saha D, Sow SO, Stroup SE, Sur D, Tamboura B, Taniuchi M, Tennant SM, Toema D, Wu Y, Zaidi A, Nataro JP, Kotloff KL, **Levine MM**, Houpt ER. [Use of quantitative molecular diagnostic methods to identify causes of diarrhoea in children: A reanalysis of the GEMS case-control study](#). *Lancet*. 2016;388:1291-1301.

Higginson EE, Galen JE, **Levine MM**, Tennant SM. [Microgravity as a biological tool to examine host-pathogen interactions and to guide development of therapeutics and preventatives that target pathogenic bacteria](#). *Pathog Dis*. 2016 Sep 13. doi: <http://dx.doi.org/10.1093/femspd/ftw095>.

Wahid R, Fresnay S, **Levine MM**, Sztejn MB. [Cross-reactive multifunctional CD4+ T cell responses against Salmonella enterica serovars Typhi Paratyphi A and Paratyphi B in humans following immunization with live oral typhoid vaccine Ty21a](#). *Clin Immunol*. 2016 Sep 12.

Feasey NA, Hadfield J, Keddy KH, Dallman TJ, Jacobs J, Deng X, Wigley P, Barquist L, Langridge GC, Feltwell T, Harris SR, Mather AE, Fookes M, Aslett M, Msefula C, Kariuki S, Maclennan CA, Onsare RS, Weill FX, Le Hello S, Smith AM, McClelland M, Desai P, Parry CM, Cheesbrough J, French N, Campos J, Chabalgoity JA, Betancor L, Hopkins KL, Nair S, Humphrey TJ, Lunguya O, Cogan TA, Tapia MD, Sow SO, Tennant SM, Bornstein K, **Levine MM**, Lacharme-Lora L, Everett DB, Kingsley RA, Parkhill J, Heyderman RS, Dougan G, Gordon MA, Thomson NR. [Distinct Salmonella Enteritidis lineages associated with enterocolitis in high-income settings and invasive disease in low-income settings](#). *Nat Genet*. 2016 Aug 22;48:1211-1217. doi: 10.1038/ng.3644.

Darton TC, Jones C, Blohmke CJ, Waddington CS, Zhou L, Peters A, Haworth K, Sie R, Green CA, Jeppesen CA, Moore M, Thompson BAV, John T, Kingsley RA, Yu LM, Voysey M, Hindle Z, Lockhart S, Sztejn MB, Dougan G, Angus B, **Levine MM**, Pollard AJ. [Using a Human Challenge Model of Infection to Measure Vaccine Efficacy: A Randomised, Controlled Trial Comparing the Typhoid Vaccines M01ZH09 with Placebo and Ty21a](#). *PLoS Negl Trop Dis*. 2016 Aug 17;10(8). doi: 10.1371/journal.pntd.0004926.

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