

Swinburne A. J. Augustine (Jason), Research Microbiologist/Immunologist, in EPA's National Exposure Research Laboratory

Exposure Methods and Measurements Division

[Mailing Address](#)

Augustine.swinburne@epa.gov

Area of Expertise: Augustine's research is aimed at developing and applying rapid, cost-effective, sensitive and multiplexed immunoassay methods to determine/measure human exposure to environmental pathogens. His work addresses a significant gap in the microbial exposure framework, bridging the gap between occurrences in the environment and actual human exposure. This work uses human saliva as a source of salivary antibodies against waterborne, food-borne and airborne pathogens. Using salivary antibodies as a source of biomarkers of exposure is relatively easy, non-invasive and cheap and, most importantly, can be collected from children without much difficulty. This work is based on the Luminex microsphere platform for multiplexing numerous antigens to known environmental pathogens and studying them simultaneously in small quantities of saliva. Data collected will be used to assess and manage risks of exposure in specific communities and in the general population.

Select Publications:

Augustine, S.A.J., Simmons, K.J., Curioso, C. L., Griffin, S.M., Fout, G. Shay, See, M.J., Wymer, L., Eason, T., Oshima, K., Grimm, A., Wade, T and Dufour, A.. 2015. Approaches for interpreting results from a multiplex immunoassay to measure salivary IgG antibodies to waterborne pathogens. *Journal of Immunological Methods*.

Augustine, S.A.J. et al. 2015. Developing a salivary antibody multiplex immunoassay to measure human exposure to environmental pathogens. *Journal of Visualized Experiments*.

Augustine, S.A.J., Simmons, K.J., Eason, T., Griffin, S.M., Curioso, C., Wymer, L.J., Fout, G. Shay, Oshima, K., Grimm, A., and Dufour, A. 2015. Statistical approaches to developing a multiplex immunoassay for determining human exposure to environmental pathogens. *Journal of Immunological Methods*.425, 1-9, doi.org/10.1016/j.jim.2015.06.002

Augustine, S.A.J. and Simmons, K. 2013. Saliva-based immunoassay of waterborne pathogen exposure. *McGraw-Hill Yearbook of Science & Technology 2013*.

Villegas, Eric N., Augustine, S.A.J. et al. 2010. Using Quantitative Reverse Transcriptase PCR and Cell Culture Plaque Assays to Determine Resistance of *Toxoplasma gondii* Oocysts to Chemical Sanitizers. *Journal of Microbiological Methods*. Volume 81, 219-225.

Ware, Michael W., **S.A.J. Augustine**, *et al.* 2010. Determining UV Inactivation of *Toxoplasma gondii* Oocysts by using Cell Culture and a Mouse Bioassay. *Applied and Environmental Microbiology*. Volume 76, No. 15, 5140-5147.

View more research publications by [Swinburne Augustine](#).

Education:

- Ph.D. Microbiology/Immunology, Meharry Medical College, Nashville, TN, 2006
- B.S. Biology, Trevecca Nazarene University, Nashville, TN 1999
- A.A.S, General Studies, Georgia Military College, Ft. Gordon, GA 1995
- Practical Nurse Diploma, US Army Academy of Health Sciences, Ft. Sam Houston, TX 1993

Professional Experience:

Honors and Awards:

- USEPA Bronze Medal for Commendable Service, 2011
- Several On-the-Spot and Individual Cash awards for excellence at the US EPA, Cincinnati, OH. 2007- 2015