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Area of Expertise

My interest is how the microbiome and host interact in health and disease. My research aims to understand the role of the microbiome in disease development (such as tick born disease, Phenylketonuria, Alzheimer's disease, inflammation after severe injury, etc.). Our projects include tick microbiome and disease associated human microbiome, and using genomic and metagenomic approaches to investigate the microbiome dynamics.

We also provide services for Next Generation Sequencing (IonTorrent, Miseq) and develop bioinformatics and statistical tools for metagenomic analysis.

Qualifications

PhD in Microbiology, Chinese Academy of Sciences

BS in Microbiological Pharmaceutics, Shenyang Pharmaceutical University

MS in Microbiology & Biochem Pharm, Shenyang Pharmaceutical University

PhD in Civil Engineering, University of Tennessee, Knoxville

Recent Publications

The adult phenylketonuria (PKU) gut microbiome

Mancilla, V. J., Mann, A. E., Zhang, Y. & Allen, M. S., Mar 2021, In: *Microorganisms*. 9, 3, p. 1-13 13 p., 530.

Comparative analysis of racial differences in breast tumor microbiome

Thyagarajan, S., Zhang, Y., Thapa, S., Allen, M. S., Phillips, N., Chaudhary, P., Kashyap, M. V. & Vishwanatha, J. K., 1 Dec 2020, In: *Scientific Reports*. 10, 1, 14116.

Comparison of the Bacterial Gut Microbiome of North American *Triatoma* spp. With and Without *Trypanosoma cruzi*

Mann, A. E., Mitchell, E. A., Zhang, Y., Curtis-Robles, R., Thapa, S., Hamer, S. A. & Allen, M. S., 13 Mar 2020, In: *Frontiers in Microbiology*. 11, 364.

Bacterial microbiomes of *Ixodes scapularis* ticks collected from Massachusetts and Texas, USA

Thapa, S., Zhang, Y. & Allen, M. S., 24 Jun 2019, In: *BMC Microbiology*. 19, 1, 138.

Effects of temperature on bacterial microbiome composition in *Ixodes scapularis* ticks

Thapa, S., Zhang, Y. & Allen, M. S., May 2019, In: *MicrobiologyOpen*. 8, 5, e00719.

Variations of the lung microbiome and immune response in mechanically ventilated surgical patients

Huebinger, R. M., Smith, A. D., Zhang, Y., Monson, N. L., Ireland, S. J., Barber, R. C., Kubasiak, J. C., Minshall, C. T., Minei, J. P., Wolf, S. E. & Allen, M. S., Oct 2018, In: *PLoS ONE*. 13, 10, e0205788.

Alterations to the Intestinal Microbiome and Metabolome of *Pimephales promelas* and *Mus musculus* Following Exposure to Dietary Methylmercury

Bridges, K. N., Zhang, Y., Curran, T. E., Magnuson, J. T., Venables, B. J., Durrer, K. E., Allen, M. S. & Roberts, A. P., 7 Aug 2018, In: *Environmental Science and Technology*. 52, 15, p. 8774-8784 11 p.

Spatial Microbial Composition Along the Gastrointestinal Tract of Captive Attwater's Prairie Chicken

Zhang, Y., Simon, S. E., Johnson, J. A. & Allen, M. S., 1 May 2017, In: *Microbial Ecology*. 73, 4, p. 966-977 12 p.

Common lung microbiome identified among mechanically ventilated surgical patients

Smith, A. D., Zhang, Y., Barber, R. C., Minshall, C. T., Huebinger, R. M. & Allen, M. S., Nov 2016, In: PLoS ONE. 11, 11, e0166313.

Detection of African swine fever virus-like sequences in ponds in the Mississippi Delta through metagenomic sequencing

Wan, X. F., Barnett, J. L., Cunningham, F., Chen, S., Yang, G., Nash, S., Long, L. P., Ford, L., Blackmon, S., Zhang, Y., Hanson, L. & He, Q., Jun 2013, In: Virus Genes. 46, 3, p. 441-446 6 p.