

NIH Office of Dietary Supplements (ODS) 2022–2023 Seminar Series

The Use of Comparative Nutrigenomics to Select Human-relevant Animal Models

Harry Dawson, Ph.D.

Research Chemist, Nutritionist; Diet, Genomics and Immunology Laboratory;
U.S. Department of Agriculture/Agricultural Research Service (USDA/ARS)

Wednesday, December 14, 2022 • 11 a.m. – 12 p.m. ET

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Dr. Dawson earned his Ph.D. in Nutrition from Pennsylvania State University in 1998. He completed his postdoctoral work in the Laboratory of Clinical Immunology at the Gerontology Research Center of the National Institute on Aging in 2001. Since then, he has worked as a senior scientist in the Diet, Genomics and Immunology Laboratory at the USDA ARS's Beltsville Human Nutrition Research Center. Dr. Dawson conducts studies on the interactions between dietary factors, primarily resistant starches, and immune function or inflammation. He also has conducted studies with garlic, green tea, cinnamon, prebiotics, probiotics, and vitamins A and D. His research also focuses on swine as surrogates for humans.

He has conducted several large-scale comparative genomic analyses of the porcine immunome, inflammasome, and nutriome. He also maintains the Porcine Translational Research database, a bioinformatics database devoted to cross-species (mouse-pig-human) model comparisons. He is the author or co-author of 89 publications. He is also an Adjunct Associate in the Department of International Health, Johns Hopkins Bloomberg School of Public Health where he has taught the course "Immunity and Undernutrition" since 2010.

Recent Publications

1. Dawson, H.D., Loveland J.E., Pascal, G., Gilbert J., et al. Structural and functional annotation of the porcine immunome. *BMC Genomics*. 2013; 14:332–348. PMID: 23676093 PMCID: [PMC3658956](#) doi.org/10.1186/1471-2164-14-332.
2. Dawson, H.D., Smith, A.D., Chen, C., Urban Jr, J.F. An in-depth comparison of the porcine, murine and human inflammasomes; lessons from the porcine genome and transcriptome. *Vet Microbiol*. 2017; 202:2–15. PMID: 27321134 doi.org/20/10.1016/j.vetmic.2016.05.013.
3. Dawson, H.D., Chen, C., Gaynor B., Shao, J., et al. The porcine translational research database: A manually curated, genomics and proteomics-based research resource. *BMC Genomics*. 2017;18(1):643. PMID: 28830355 PMCID: [PMC5568366](#) doi.org/10.1186/s12864-017-4009-7.



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