

Bruce S. Seal, PhD - Accomplishments and Research

Dr. Bruce S. Seal completed his undergraduate and graduate education at the University of Nevada-Reno followed by post-doctoral studies at the UC San Diego School of Medicine and the Zoological Society of San Diego. The bulk of Dr. Seal's research was in the animal health programs of the Agricultural Research Service of USDA at the National Animal Disease Center in Ames IA and the high containment facility for avian viral diseases in Athens GA. During 2004 Dr. Seal took the position of Research Leader for the Poultry Microbiological Safety Research Unit joining the food safety research programs for ARS, USDA. Dr. Seal retired from the ARS-USDA during 2014 and now is an Instructor and Adjunct in the Biology Program at Oregon State University Cascades campus in Bend OR USA.



Dr. Seal has been an active molecular biologist for over thirty years and has greater than 100 peer-reviewed publications, numerous published proceedings as well as invited book chapters while directing the research of graduate students, post-doctoral associates and international visiting scientists. Dr. Seal has made scientific presentations at more than 100 internationally recognized conferences and has presented over 80 national or internationally invited seminars at scientific institutions, as well as to commodity associates. Dr. Seal remains an adjunct graduate faculty member in the Department of Infectious Diseases, College of Veterinary Medicine at the University of Georgia and has served on grant proposal review panels for the USDA, the NSF and the NIH along with providing reviews on an annual basis for other granting agencies internationally.

Scientific accomplishments have included basic research and diagnostics development for a variety of animal pathogens including bovine herpesviruses, swine and feline caliciviruses, avian paramyxoviruses, metapneumoviruses and orthomyxoviruses. Ongoing research includes genomics-proteomics analyses of food-borne bacterial pathogens and examining bacteriophage gene products along with other alternative antimicrobials as potentials to combat bacterial disease. Bacteriophages that infect the bacterium *Clostridium perfringens* have been characterized by full-genome sequencing and expression of the phage lytic proteins as alternative antimicrobials. Discovery of potential probiotic, spore-forming bacteria from geese is being conducted as part of ongoing undergraduate research at OSU Cascades.