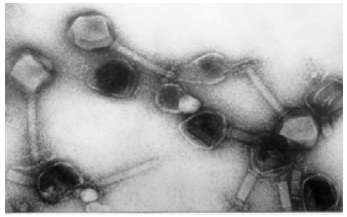

# *Seminar*

***ARS International Research Seminar Series***

**Tuesday, October 10, 2006 ◆ 1:30 p.m. – 3:00 p.m.**
**GWCC ◆ 5601 Sunnyside Ave, Bldg. Beltsville, MD 20705**
**Conference Room: 4-2223**

**Dr. Norman Stern, Dr. Greg Siragusa, Dr. Eric Line and Dr. Bruce Seal**
**Poultry Microbiological Safety Research Unit, Russell Research Center in Athens, GA**

## "Bacterial Derived Antimicrobials for Control of Food-borne Disease Agents"

Investigators at the Poultry Microbiological Safety Research Unit (PMSRU) have collaborated with a team of Russian Federation scientists at the State Research Center for Applied Microbiology and Biotechnology (SRCAMB) in Obolensk, Moscow Region for the past seven years. These scientists have identified natural proteins or bacteriocins from "good" bacteria that inhibit growth of bacterial contaminants such as *Salmonella* spp and *Campyolbacter* spp. in live chickens. The antimicrobial peptides create holes in the target cells and can consistently reduce bacterial counts one-million fold in live chickens under laboratory conditions. The researchers now plan large-scale field trials in poultry broiler flocks to demonstrate commercial feasibility.

Objectives of the PMSRU are to further reduce or eliminate bacterial food-borne pathogen contamination in poultry. Scientists assess the effectiveness and further development of bacteriocins (anti-bacterial peptides) and bacteriophage by *in vitro* bacterial growth inhibition in culture and *in vivo* experimentation via challenge in chickens. The PMSRU also works to improve cultural methods for detecting *Campylobacter* spp. in poultry in further support of regulatory agency needs, including the improvement of bacterial recovery.

The PMSRU utilizes innovative techniques to complete molecular characterization of food-borne pathogens and identify host or pathogen genes important to colonization by bacteria in poultry. This is accomplished by monitoring host and pathogen gene expression utilizing RNA and DNA microarray analyses. Another principle PMSRU goal is to quantitatively and qualitatively identify microbial populations associated with the chicken gastrointestinal tract to predict proper use of newly developed antimicrobials as alternatives to currently used antibiotic growth promoters.

**The PMSRU investigators will present the objectives, approaches, and recent research results that are emerging from their cooperative international antimicrobial research program with Russian Federation collaborators at the State Research Center for Applied Microbiology and Biotechnology under the direction of Dr. Edward Svetoch.**

***(Presentation includes Question and Discussion Time)***

**Please RSVP to Crystal D. Lewis at 301-504-4542, fax: 301-504-4528, or email: crystal.lewis@ars.usda.gov**
**5601 Sunnyside Ave, Bldg. 4-1139, Beltsville, MD 20705**