

*State of Alaska*  
*Department of Environmental Conservation*  
*Division of Environmental Health*

*From the Office of the State Veterinarian*

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**USDA APHIS Veterinary Services Reorganization Also Means Changes in Alaska**

Last year the USDA APHIS Veterinary Services began the process of reorganizing; some of you are already aware of this if you attended the Alaska State Veterinary Meeting in Anchorage several weeks ago. As part of this reorganization on a national level, the "regional office" concept was replaced by functional units to now separate out activities such as animal disease and import/export.

Here in Alaska, Dr. Comerci is assigned to the Import/Export group known as NIES (National Import Export Services Branch) and Dr. Lombardi is assigned to SPRS (Surveillance, Preparedness, and Response Services Branch). What this means is that Dr. Comerci may be doing more of the Import/Export activities especially for clients located in the Anchorage bowl. Dr. Lombardi will

**Happy New Year! January 2015**

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still be doing Import/Export activities, but not exclusively. **So it is very important to call** the office (907) 688-1229) in advance if you are sending a health certificate by mail to determine the most efficient location to send the documents.

Another major change is that we will no longer be stopping at clinics as much to do federal endorsements for international travel. We will now be meeting clients at central locations such as the State Veterinarian's Office in Anchorage or at USDA APHIS Wildlife Services Office in Palmer. So again, it is very important to plan well in advance of travel. We also recommend close coordination with our office during preparation of documents, especially for some of the more complicated countries. This will alleviate clients having to return to clinics for corrections. Also if you are unsure how to complete the forms you can always send us a "draft" so we can make sure everything is correct before we meet with the client. Please remember we always need to see the supporting documentation, particularly original rabies certificates.

We ask for your patience during this time of transition and we welcome your concerns or comments. Our goal is to not interrupt or decrease any of the services we already provide. If you have any questions please call the main office number at (907) 688-1229 or email:

[rosemarie.t.lombardi@aphis.usda.gov](mailto:rosemarie.t.lombardi@aphis.usda.gov) or  
[linda.r.comerci@aphis.usda.gov](mailto:linda.r.comerci@aphis.usda.gov)

Information regarding Animal Exports can still be found on the USDA IRegs for Animal Export website:

[http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/animalhealth?1dmy&urile=wcm%3apath%3a%2Faphis\\_content\\_library%2Fsa\\_our\\_focus%2Fsa\\_animal\\_health%2Fsa\\_export\\_from\\_us%2Fsa\\_live\\_animals](http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/animalhealth?1dmy&urile=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_animal_health%2Fsa_export_from_us%2Fsa_live_animals)

If you need additional information or forms please contact the USDA APHIS Veterinary Services at (907) 688-1229.

**European Union (EU) Pet Travel Requirements: CHANGE**

Requirements to travel internationally change so you need to verify the requirements frequently. This is very important to prevent pets from being put through

unnecessary quarantine procedures and expense, being returned back to the USA, or worse, being seized and euthanized.

We recently told that the European Union (EU) will be changing some of its requirements and forms for **pet travel beginning with pets entering the EU on December 29, 2014**. At this point, the new certificates have not been finalized and as soon as they are, they will be placed on the USDA IRegs site. [http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/animalhealth?1dmy&urile=wcm%3apath%3a%2Faphis\\_content\\_library%2Fsa\\_our\\_focus%2Fsa\\_animal\\_health%2Fsa\\_export\\_from\\_us%2Fsa\\_live\\_animals](http://www.aphis.usda.gov/wps/portal/aphis/ourfocus/animalhealth?1dmy&urile=wcm%3apath%3a%2Faphis_content_library%2Fsa_our_focus%2Fsa_animal_health%2Fsa_export_from_us%2Fsa_live_animals)

Please contact us at (907) 688-1229 for updated information if you have clients traveling to the EU. More detailed information will be provided to you as made available to us.

### **Update on EIA Testing at the Alaska State Lab**

Routine EIA samples arriving at the laboratory Thursday thru Wednesday are analyzed on Thursdays with results reported by the following Monday. The required fee, \$10 per sample, and completed paperwork must arrive with the sample. No sample can be analyzed until the fees and all required paperwork are completed and at the laboratory.

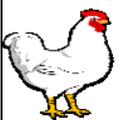
The following forms must arrive with the sample(s):

- ⇒ USDA VS 10-11 (available from Office of the State Veterinarian or USDA Office)
- ⇒ EIA Testing Agreement form ( <http://dec.alaska.gov/eh/docs/lab/Forms/EIA%20Test%20Agreement.pdf> )
- ⇒ EHL Animal Health Sample Submission form (<http://dec.alaska.gov/eh/docs/lab/Forms/AH%20Submission%20Electronic.pdf> )

Samples must be collected and submitted by a licensed veterinarian, a State or Federal animal health official or a military veterinarian.

Notification of intent to submit samples can be made by contacting the laboratory by phone (907) 375-8231 or email ([DEC.EH-Lab-ShippingReceiving@alaska.gov](mailto:DEC.EH-Lab-ShippingReceiving@alaska.gov) ).

This allows the laboratory to adequately prepare for incoming samples, helps track shipments in case they are lost, and enables the lab to disclose of any conditions that might delay analysis. Reports are delivered electronically to the submitting veterinarian, the AKDEC-OSV and the USDA-AVIC. In the event of a positive result, the submitting veterinarian, the Office of the State Veterinarian and the USDA-AVIC are notified within 24 hour of testing.



### **High Pathogen Avian Influenza (HPAI): Outbreak in the Pacific Northwest**

Avian influenza will continually be an issue for both animal and public health officials. The most recent outbreak illustrates the complicated situation.

It began in the Frazer Valley, B.C. with an outbreak of HPAI H5N2. A low pathogen strain H5N2 had been circulating in the area for a number of years what caused the transformation? Genetic analysis of the virus found 5 of the 8 genes were nearly identical to the H5N2 virus that was identified in South Korea in January of 2014 and by November had spread across Europe to England. The remaining 3 genes were from the North American H5N2. This outbreak caused widespread mortality and resulted in the loss of over 200,000 birds.

The H5N8 virus was then identified in Washington State in December from some falcons that had died after being fed a duck that had been harvested during the hunting season. This virus had 5 of 8 genes that matched the Euro-Asian H5N8. Within days H5N2 was found in some ducks that were sampled as part of a morbidity mortality event just south of where the Gyrfalcon had died. These waterfowl had died from another pathogen and the influenza was a secondary finding. This H5N2 virus did match the Canadian H5N2 outbreak strain. By the end of the week H5N8 was found to be the cause of a morbidity/mortality event in southwestern Oregon. So the presumption is that the H5N8 was transported to North America by wild waterfowl, mixed with low pathogen strains resulting in the outbreaks in domestic poultry. Wild waterfowl are the reservoir for these viruses and other birds especially domestic poultry show signs of illness.

The message to poultry owners is that Biosecurity is your best defense against pathogens, in this case, we need to stress the need to keep a separation between wild and domestic birds. You can refer clients with birds to check out the USDA “Biosecurity for the Birds” website for additional information. Our office is still performing surveillance testing for domestic poultry and will run diagnostics to support local veterinarians in the investigation of a morbidity/mortality event. There are a couple of follow up articles regarding influenza illustrating the “One Health Concept”.

### **H3N1 Identified in Swine in Two States**

The U.S. Department of Agriculture IAV-S surveillance program has identified several H3N1s in U.S. swine in at least two states since December 2013. Although this is not the first time H3N1s have been detected in swine in the United States, it is a rare occurrence and needs further examination.

More importantly, two of these H3N1s carry a novel human seasonal HA gene from contemporary human viruses and are distinct from our current swine H3 viruses.

A review of Genbank data indicates there may be more human-like H3 genes (in either H3N1 or H3N2) circulating in U.S. swine subtypes than what the USDA surveillance data has captured. Potential spread of H3N1 or H3N2 that carries the human-like H3 could have significant impact in swine herds due to poor herd immunity as well as potential public health ramifications. Preliminary findings by the USDA-ARS from testing of one of these H3N1 isolates with the human-like H3 gene in swine

indicate the virus is fully virulent, causing typical influenza disease.

### **Avian Flu in Seals Could Infect People**

The avian flu virus that caused widespread harbor seal deaths in 2011 can easily spread to and infect other mammals and potentially humans. A new study by the U.S. Geological Survey and St. Jude Children's Research Hospital shows that the avian influenza H3N8 strain that infected New England harbor seals could be transmitted to other mammals through the air without physical contact. Transmission by respiratory droplets through coughing, for example, is the main way influenza viruses spread among people. The study also showed that current seasonal flu vaccines do not protect against this seal virus, meaning a new vaccine would be necessary if there ever was an outbreak in humans.

"The ability to transmit through the air is an important step in the path toward any influenza virus becoming pandemic," said USGS scientist Hon Ip. "The lack of protection against the seal virus from the annual seasonal vaccine highlights the risks posed by this H3N8 group of viruses."

### **CDC Study Shows Increase in Raw Milk-Associated Outbreaks**

A study published in the Centers for Disease Control and Prevention's Emerging Infectious Diseases Journal



(<http://www.cdc.gov/foodsafety/rawmilk/raw-milk-index.html>) states that the average annual number of outbreaks due to

drinking raw (unpasteurized) increased by a factor of 4; from an average of three outbreaks per year from 1993 to 2006 to 13 per year from 2007 to 2012. A total of 81 outbreaks were recorded in 26 states from 2007 to 2012 and affected approximately 1,000 people with 73 requiring hospitalization. Not surprising, 80 percent of the outbreaks occurred in states where selling raw milk was legal.

As more states have allowed the legal sale of raw milk, there has been a rapid increase in the number of raw milk-associated outbreaks. Since 2004, eight additional states have begun allowing the sale of raw milk, bringing the number of states where raw milk sales are legal to 30. Ten states, including Alaska, allow cow or goat shares (people can pay a fee for a cow's care in return for raw milk). As access to raw milk products continues to increase the trend is likely to increase.

### **Merck Animal Health Releases New Dairy Care365 Training Module**

Merck Animal Health today introduced its newest training module in its Dairy Care365™ series. "Handling Dairy Calves and Heifers: A Low-Stress Way to a Profitable Herd" focuses on helping dairies create and maintain a low-stress animal handling approach, as well as a safe, positive environment for young animals. A low-stress approach is not only better and safer for the animal, but it also reduces the risk of injury to the handler.

Specifically, the new module will address training calves to move and adjust to new situations, knowing how to move, process and handle heifers safely and efficiently, and learning how to train fresh heifers to be milked. "In addition to safety and animal well-being, using low-stress handling when working with young stock positively impacts the performance of those animals," said Mike Bolton, DVM technical services manager for Merck Animal Health. "In fact, research results have shown the connection between handling stress and milk production. Heifers experiencing stress while entering the milking parlor produced three pounds less milk per day, lost 30 pounds more weight and experienced more lameness.

Results also showed that dairy cattle's fear of humans can result in a 30 to 50 percent difference in the level of milk production between herds." This module was developed in partnership with Ben Bartlett, DVM well-known Michigan State University extension educator, who noted that this training is an ideal resource for dairies that are committed to making continuous improvement in their herds' performance.

This training module presents the information in an easy-to-understand format that explains how to raise calves that respect people and respond to handler movement requests. It is available in English or Spanish and takes approximately 20 minutes to complete. At the end of the course, participants can take a short quiz to test their knowledge. Dairy managers also can use the results of the training to help identify areas for improvement.

Merck Animal Health developed Dairy Care365™ to train, equip and support dairy farmers and their employees so they're able to provide the best possible care for dairy animals every day. The new module and previous Dairy Care365™ courses, including "Introduction to Dairy Stockmanship" and "Milk Parlor Handling," are available by sending an email to [info@DairyCare365.com](mailto:info@DairyCare365.com).

### **Five-Year Study Compares Organic and Conventional Dairies**

Daniel Robison, Oregon State University. Cows raised on organic and conventional dairy farms in three regions of the United States show no significant differences in health or in the nutritional content of their milk, according to a new study by Oregon State University researchers and their collaborators. Many organic and conventional dairies in the study also did not meet standards set by three commonly used cattle welfare programs.

While there are differences in how cows are treated on organic farms, health outcomes are similar to conventional dairies," said Mike Gamroth, co-author of the study and professor emeritus in OSU's College of Agricultural Sciences. "Few dairies in this study performed well in formal criteria used to measure the health and well-being of cows."

Nearly 300 small dairy farms—192 organic and 100 conventional—in New York, Oregon and Wisconsin participated in the study, which was funded by a \$1 million grant from the National Institute of Food and Agriculture in the U.S. Department of Agriculture (USDA).

The five-year project looked at many aspects of dairy cow health, including nutrition, lameness, udder cleanliness, and other conditions. Milk samples were screened for bacteria and common diseases, and farmers were asked about their operations, including the use of veterinarians and pain relief when removing horns from cattle.

Researchers found the following:

- One in five herds met standards for hygiene, a measure of animal cleanliness;
- 30 percent of herds met criteria for body condition, which measures size and weight of cows;
- Only 26 percent of organic and 18 percent of conventional farms met recommendations for pain relief during dehorning;
- Four percent of farms fed calves recommended doses of colostrum, which helps boost their limited immune systems after birth;
- 88 percent of farms did not have an integrated plan to control mastitis, a common disease in dairy cattle;
- 42 percent of conventional farms met standards for treating lameness;
- Cows on organic farms produced 43 percent less milk per day than conventional non-grazing cattle, the study found, and 25 percent less than conventional grazing herds.

Milk from organic and non-organic herds also showed few nutritional differences, researchers found. Organic milk can occasionally contain more omega-3 fatty acids, which may improve heart health. However, those increases come from seasonal grazing and are not present when cattle are fed stored forage, according to Gamroth.

### **Study Examined Animal Welfare Perceptions Among Public and Beef Producers**

What is the relationship between consumer perceptions of animal welfare practices on farms and those of producers? Are popular media accounts of animal welfare practices truly reflective of consumer and producer perceptions? More importantly, are consumers willing to pay higher retail prices for cuts of meat from animals raised using certain welfare practices? A research project at Kansas State University and Michigan State University show that the answers are complicated.

Animal welfare is a wicked problem that's not going away soon, and information gaps exist between the beef industry and the general public" creating opportunities and potential threats for the industry, the researchers said. The preliminary research shows four general areas of agreement on animal welfare issues with seven areas of general disagreement. Producers and consumers agreed on the three most effective and practical practices for beef

production. Areas of agreement for animal welfare were with belief that the typical U.S. beef product comes from: cattle dehorned/disbudded with pain control, cattle older than three months of age castrated with pain control, farms/ranches with consistent training program for employees focusing on principles of animal care and handling; and farms/ranches with third party verification that appropriate animal care and facilities are provided.

Areas of agreement with regard to the most effective and practical actions to improve welfare of beef cattle in the U.S. are providing access to fresh, clean feed and water appropriate for the animal's physiological state; providing adequate comfort through shade, windbreaks, and ventilation assuring clean, dry sanitary environmental conditions, and promptly treating or euthanizing all injured or sick animals. When producers were asked about actual practices on their farms, responses also lined up with this list. When further pressed to indicate a preference pain control, 66 percent of the public surveyed indicated they would vote to ban cattle castration without use of pain control but only 36 percent were willing to pay a premium for beef from cattle castrated with pain control. On the issue of limited antibiotic use, 71 percent of the public indicated they would vote to limit use to treatment for disease purposes only; while only 48 percent would be willing to pay a premium for beef from cattle raised using the practice.

The purpose of the national survey was to compare public opinions with those of cow/calf producers. Results show that 65 percent of the public surveyed were concerned about the welfare of beef cattle in the United States. The survey then looked at 11 different topics relating to animal welfare and nine practices that respondents were asked to rank as most effective to least effective and most practical to least practical. Beef cattle surveying for the project was conducted by Kansas State University. Michigan State University is conducting similar consumer and producer surveys targeting the dairy industry.

As results are further analyzed more will be released and the team expects this study to lead to further studies to help bridge the communication gaps between beef and dairy producers and U.S. consumers.

### **UW Faculty Member Publishes Sheep Obesity Research that Could Affect Future Generations**

Obesity in female sheep during pregnancy can impact the metabolic profile and health of the animals' granddaughters, as well as their daughters. The study has implications for predicting obesity, particularly abdominal fat, in humans. Stephen Ford, the University of Wyoming's Rochelle Endowed Chair in the Department of Animal Science and director of the Center for the Study of Fetal Programming, is lead writer of a paper, titled "Multi-Generational Impact of Maternal Over-nutrition/Obesity in the Sheep on the Neonatal Leptin Surge in Granddaughters." The Sheep on the Neonatal Leptin Surge in Granddaughters." The International Journal of Obesity provides an international, multi-disciplinary forum for the

study of obesity. The journal publishes basic, clinical and applied studies and also features a quarterly pediatric highlight.

The multigenerational effects of over-nutrition during pregnancy on body-fat levels, and blood glucose and insulin concentrations, have been studied in rodents, but it remains uncertain whether the same findings apply to large-animal species, including humans, that tend to bear a single fetus born after a greater degree of intra-uterine development.

The paper's writers note that further research is needed to fully understand the processes that govern these multigenerational effects and to explore whether and to what extent epigenetic mechanisms (whereby environmental factors program changes in gene expression) are involved. They examined how obesity and overfeeding affected the animals' daughters (referred to as F1s) and granddaughters (known as F2s). The authors found that birth weight did not vary significantly between granddaughters of the two treatment groups.

Newborn lambs born to the daughters of over-nourished pregnant sheep (those that reached 70 percent to 80 percent beyond their normal weight) had higher adiposity or obesity levels, and higher blood concentrations of glucose and insulin, compared to granddaughters of the control group. In several mammalian species, including sheep, there is a surge of leptin -- a hormone involved in regulating appetite by organizing the brain structures that control our appetite -- during the first two to three weeks of post-natal life, which can be altered by diet-induced obesity.

This alteration occurs when leptin surge does not occur in the newborn during the first few weeks after birth. As a result, the sheep is predisposed to having weight struggles because the mother was overweight during pregnancy. There was a lower leptin peak in granddaughters of over-nourished sheep than in granddaughters of the control group.

This may make granddaughters of over-nourished sheep more susceptible to increased appetite, obesity, and insulin and leptin resistance in adulthood.

Ford says his study of sheep could easily correlate to humans and their struggles with controlling weight. The National Institutes of Health (NIH) reports that 30 percent of women of child-bearing age are overweight or obese at conception and remain so throughout pregnancy. Maternal obesity not only predisposes mothers to serious health problems during pregnancy, but also increases the incidence of chronic metabolic diseases in their children and grandchildren. These include hyperphagia (overeating), insulin resistance, obesity, type 2 diabetes, hypertension and cardiovascular disease.

### **Shooting Wolves Won't Save Livestock**

Killing wolves to reduce livestock losses does not work, says a study looking at 25 years of government control data. Likelihood of livestock deaths double if 20 wolves are killed, according to Washington State University

researchers analysing data collected in Montana, Wyoming and Idaho. The study found that killing one wolf results in a four per cent rise in sheep deaths, with 5-6 per cent more cattle dying. Odds of sheep deaths rise four per cent if one wolf is killed, and cattle rise six per cent.

The study, the largest of its kind, said the trend ran until 25 per cent of wolves had been killed, at which point conservationists see a "standing wave of livestock depredations." Lead author, wildlife biologist Rob Wielgus, said similar trends had been seen in cougars. "The only way you're going to completely eliminate livestock depredations is to get rid of all the wolves," he said. "Society has told us that that's not going to happen." Reintroducing wolves is controversial, with much debate over what constitutes a stable population.

When wolves are shot, social structures are broken in the pack as breeding pairs are broken up, liberating sexually mature wolves that would otherwise be prevented from mating by adult pairs. These animals then have pups, becoming bound to locations, making wild prey a bigger challenge and livestock an easier alternative.

### **Do You Have a Plan for Your Livestock Should Disaster Strike?**

Last year brought some interesting weather to our country. A multi-day severe weather event included an EF3 tornado that carved a 68-mile path from Mississippi to Alabama. Parts of Colorado had flooding so severe it destroyed thousands of homes, and wiped out 200 miles of state roads and 50 state bridges. Winter Storm Nemo dropped a record snowfall of 31.9 inches in Portland, Maine. And, California recorded its driest year ever-fueling wildfires that burned some 8,000 acres in Southern California.

Any disaster, whether it's a flood, tornado or earthquake, can catch you off guard and leave you in danger. It's important to have an emergency plan in place for your family. And if you raise livestock, an emergency plan is important as well. Using the American Veterinary Medical Association's (AVMA) procedures to prepare now, you can quickly and easily safeguard your livestock when disaster strikes.

- ⇒ **PREPARE - Get a Livestock Evacuation Kit**  
Include feed, water, supplements, supplies (medications, rope/lariat, halters/leads, cleaning supplies, knives, etc.), and papers (veterinary records and proof of ownership).
- ⇒ **REVIEW Your Kit Regularly**  
To ensure contents, especially feed and medicines, are fresh.
- ⇒ **PLAN -What You Will Do In An Emergency?**  
Determine if you are able to evacuate (This should be based on the type of disaster and the safety and stability of the shelter).

⇒ **DETERMINE - Where You Will Go If You Have to Leave**

Identify friends or relatives who could house livestock during the disaster, including fairgrounds or other livestock evacuation locations.

⇒ **DETERMINE - How You Will Evacuate**

Decide how livestock will be transported/housed and prearrange an evacuation site).

⇒ **In Case You Are Not Home:**

Designate a neighbor to tend to your livestock. (This person should be familiar with your livestock, know your evacuation procedures, know where your evacuation kit is kept, and have your emergency contact information).

Make sure livestock has some form of identification (microchip, ear/leg tag, leg band, tattoo etc.).



**Iowa State Veterinary Researchers Deliver Pain Medicine to Piglets Through Sow's Milk**

Veterinary researchers at Iowa State University have devised a novel means of delivering pain medication to piglets through the milk of the mother sow as the piglets nurse. It's a proof-of-concept study that could help pork producers reduce the stress and pain experienced by piglets that are castrated or have their tails removed without the need to inject each piglet with medicine.

A study recently published PLOS ONE, indicate that if pain medication is fed to a sow the piglets will receive the medication through the milk and experience less stress following castration and tail docking than piglets nursed on sows that didn't receive the medication. The husbandry practice of docking the tails of piglets and castrating males are common and not only stops the meat from developing an unpleasant taste referred to as "boar taint" but also lowers the level of aggression, fighting and injury.

The researchers used meloxicam in the study, a non-steroidal anti-inflammatory medication similar to aspirin. The next step in the research is to determine the lowest dose of medicine that can be given to a sow that still produces the desired amount of pain mitigation in piglets.

**Improving PRRS Control: A Scientific Look at Two Strategies**

Porcine Reproductive and Respiratory Syndrome (PRRS) continues to be a significant profit robber in U.S. swine herds, with an estimated annual cost of more than \$600 million. The first part of a three-part webinar\* at PorkNetwork.com focuses on how producers can improve PRRS control in the breeding herd, in growing pigs, and in the entire system. [\* See: <http://tinyurl.com/mdgnz5p> ] The three webinar segments can be watched separately or the complete webinar can be viewed in its entirety. The content is informative and useful to producers, veterinarians and allied pork industry representatives who have dealt with (or are dealing with) PRRS, and we encourage you to watch it.

**Segment One: Live Virus or Modified-Live Vaccine?**

The first segment features Montse Torremorell, DVM, PhD. She discusses breeding herd stabilization for PRRS, comparing live virus (LV) and modified-live vaccine (MLV) in a "load-close-expose" protocol. The findings are based on Dr. Daniel Linhares' research study. Dr. Torremorell is an associate professor and is the Allen D. Lemam Chair, Swine Health and Productivity in the College of Veterinary Medicine at the University of Minnesota (UM). The study for which Dr. Linhares was the principal, involved 60 herds and took several years to complete. "One of the goals of the study was to put some science behind PRRS control and to determine what strategies were most effective," says Dr. Torremorell.

**Antimicrobial Resistance Learning Site for Veterinarians**

ARM is a current topic of discussion in both human and veterinary medicine. The FDA announce the availability of this new teaching resource regarding Antimicrobial Resistance in Veterinary Medicine.

<http://amrls.cvm.msu.edu/>

These open-source teaching modules are designed for integration into existing veterinary school courses regarding: [Pharmacology](#), [Microbiology](#), [Public Health](#), and [Species-specific medicine](#).

Other interested visitors to the site include researchers, microbiologists, epidemiologists and animal scientists. Contributors include [Michigan State University](#), [the University of Minnesota](#) and [the Centers for Disease Control and Prevention](#).

Vet and VT continuing education credit for most modules is available through [OnlineCE.com](#)

**Popular Veterinary Immunology and Principles of Vaccination Course Moves to Exclusive On-line Delivery**

The course Veterinary Immunology and Principles of Vaccination taught at University of Iowa will now be offered online. "Now that we have several years of success in delivering this course via the web, we have made the decision to remove it from the annual training program and offer it exclusively online," said Dr. Jim Roth, DVM, PhD and course instructor. "The information is better suited to be delivered online rather than in a concentrated set of lectures in a short time-frame. People can register for the course at any time and have 3 months to complete the online class at their own pace."

The Veterinary Immunology Course has been delivered online to more than 350 participants. The course gives an overview of the scientific principles of immunology specifically as it applies to vaccines and vaccination. The online course provides access to videos of the lectures, and exams that can be taken to enhance the learning experience. Participants also receive printed booklets of the lecture slides and an outline of the lecture content.

Dr. Roth and the Institute for International Cooperation in Animal Biologics have also developed a 4 ½ hour Short Course on Veterinary Immunology course in order to introduce these important topics to people who do not have a scientific or veterinary background or who need a brief refresher. Both online courses are RACE approved for Veterinary Continuing Education credit, for 17 and 7 hours respectively. These online courses can be taken according to participants' schedules, without travel expenses or time away from work. Participants can access the courses from an iPad® and other tablets and many smartphones as well as computers. The course information, including fees and registration information is at [www.vetimmunology.org](http://www.vetimmunology.org)

The Veterinary Biologics Training Program: Procedures for Ensuring Vaccine Safety and Efficacy, will continue to be offered annually. The week-long program is taught by regulatory officials from the USDA APHIS VS Center for Veterinary Biologics. It is scheduled to take place May 11-15, 2015 in Ames, Iowa. This program will be submitted for RACE approval. <http://www.cfsph.iastate.edu/IICAB/>

The Veterinary Biologics Training Program: Procedures for Ensuring Vaccine Safety and Efficacy will continue to be offered annually in a classroom format at the Iowa State University College of Veterinary Medicine. The week-long program is taught by regulatory officials from the USDA APHIS Veterinary Services Center for Veterinary Biologics. It will take place May 11-15, 2015. Information is available at <http://www.cfsph.iastate.edu/IICAB/> (This program will also provide RACE Continuing Education.)

### **Current Vaccination Shows Promise Protecting Against CWD in Deer**

Researchers have developed a vaccination against Chronic Wasting Disease in deer that may provide some additional application two additional fronts: protecting livestock (sheep, cattle) from contracting a prion disease, and preventing similar brain infections in humans.

The study, published online in *Vaccine* Dec. 21, documents the first successful vaccination of deer against the prions that cause chronic wasting disease (CWD).

The researchers believe that this study may hold promise against human diseases suspected of being caused by prion infections, such as Creutzfeldt-Jakob disease, kuru, familial insomnia and variably protease-sensitive prionopathy. Some studies also have associated prion-like infections with Alzheimer's disease.

### **Small, Fast, and Crowded: Mammal Traits Amplify Tick-borne Illness**

According to a new paper published in *PLOS ONE*, when small, fast-living mammals abound, so too does our risk of getting sick. Richard S. Ostfeld, the paper's lead author and a scientist at the Cary Institute of Ecosystem Studies, has researched the ecology of Lyme disease since 1992. "A pattern emerged in our long-term studies. Ticks that fed on certain rodents and shrews were much more likely to pick up multiple pathogens, making the environment riskier for people."

First, they looked at life history traits for nine mammals known to harbor Lyme disease, babesiosis, and anaplasmosis. Attributes like body size, litter size, and life span were taken into consideration. Then they looked at the role of mammal population density. As 'sit and wait' parasites, ticks are much more likely to encounter animals with dense populations. This, in turn, could help pathogens evolve to exploit specific hosts, resulting in more effective transmission rates.

For Lyme disease and anaplasmosis, fast life history features were a strong predictor of an animal's ability to transmit infection to ticks. Body size was inversely related to reservoir competence. Raccoon, skunk, opossum, squirrel, and deer infected fewer ticks than their mouse, chipmunk, and shrew counterparts. Ostfeld notes, "This is consistent with past research on Lyme disease, West Nile virus, and Eastern Equine encephalitis. There is evidence that animals that mature early and have frequent, large litters invest less in some immune defenses, making them better pathogen hosts."

Population density was the best predictor of species' abilities to transmit all three pathogen groups, with animals that ticks encountered most frequently being the most effective at transferring infection. Co-author Felicia Keesing of Bard College explains, "Fast life history and high population density often go hand-in-hand. In rodents and shrews, pathogen adaptation and poor immune defense may be working together to amplify disease spread."

With Ostfeld concluding, "In our struggle to manage the ever-growing list of tick-borne diseases, we need to understand which animals magnify human disease risk. Our results suggest when generalist pathogens emerge, small mammals with large populations and a fast pace of life warrant careful monitoring."

### **Neurodegenerative Disease Transmission From Sheep and Goat to Humans Possible**

Pathogens responsible for a neurodegenerative disease in sheep and goat can cross the species barrier to infect humans with a disease similar to Creutzfeldt-Jakob disease, says an INRA study. But this is not a major risk for public health as cases of CJD are rare even though scrapie has been circulating for centuries, say the researchers. Similar to Bovine Spongiform Encephalopathy (BSE) or mad cow disease, scrapie is caused by a transmissible pathogen protein called prion.

Human transmission of BSE was shown in 1996. While epidemiological studies so far have not been able to establish a link between this disease and the occurrence of prion diseases in humans, the latest work calls for a reassessment. Researchers at INRA led by Olivier Andreoletti, studied the permeability of the human transmission barrier to scrapie-causing pathogens by using mouse models. The approach was the same that had shown the zoonotic nature of prions responsible for BSE in cows and of the variant of Creutzfeldt-Jakob disease in humans (vCJD).