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Animal Health MATTERS Newsletter

Veterinary and Biomedical Sciences

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2-15-2008

## Animal Health MATTERS

David H. Zeman  
*South Dakota State University*

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# Animal Health MATTERS



Vol. 11, Issue 1

February 2008

## Head/Director's Message

David H. Zeman, DVM, PhD

### University, College and Department Missions

Our new President, Dr. David Chicoine, has been on board for approximately one year now. There has been a considerable amount of strategic planning during the past year at all unit levels of the University. Mission statements have been updated and strategic plans reformulated at the University, College and Department levels. Here is sampling of that work:

#### **Vision of our University:**

*South Dakota State University will be a nationally recognized, locally relevant, student-centered and accessible land-grant university.*

#### **Mission and Vision of the College of Agriculture and Biological Sciences:**

**Mission:** Discover and disseminate knowledge to enhance economic development and quality of life in South Dakota, for South Dakotans and beyond.

**Vision:** Achieve national distinction while teaching, creating and applying knowledge for economic development and quality of life of the state, nation and world. Be recognized as an indispensable partner in South Dakota's economy and quality of life in South Dakota, for South Dakotans, while being environmentally and socially responsible.

**Veterinary Science Department Mission:** To protect and improve the health of animals, the viability of the SD agricultural industry, and the welfare of society through high quality diagnostic, analytical, research, extension and teaching activities.

#### **Role Specific Mission of the Animal Disease Research and Diagnostic Laboratory (ADRDL) -**

To provide high quality veterinary diagnostic services as a means to promptly and accurately establish causes of animal health problems. Such diagnoses will aid attending veterinarians and health officials in the treatment, control, prevention and surveillance of animal diseases to the benefit of the SD and national livestock industry, other animal owners, and public health.

As always, the Veterinary Science Department, and the Animal Disease Research and Diagnostic Laboratory are dedicated to improving animal health and to serving our customers to the best of our abilities... which hopefully make your missions successful as well. Thank you for being our customers and friends.

## Diagnostic News - SDSU ADRDL

### Hardware Disease Associated with Tires Used as Hay Feeding Stations: A New Source of Hardware for an Old Disease

DH Zeman, DVM, PhD, DACVP, SDSU ADRDL  
Jennifer Poindexter-Runge, DVM, Ree Heights, SD

During late winter 2006-07, seven cows from a herd of 330 crossbred beef cows had died over a period of a few weeks and several others had shown a variety of vague

clinical signs including fever, lethargy, anorexia, excessive salivation, abortion, and agonal recumbence. On March 15, 2007, the owner delivered two dead cows to the SDSU ADRDL. These cows were the fourth and fifth to die during the current week.

Cow 1: Necropsy revealed this five-year-old cow to be in good body condition. A fetid rumen-like odor was noted when the right thoracic cage was removed. The pericardial sac was markedly distended and thickened. Approximately 3 gallons of brown, fetid fluid readily poured from the pericardial sac following puncture. The inner lining of the

pericardium and the epicardial surface were diffusely covered by a thick (.25 inches) layer of yellow/tan exudate. A **wire** was observed extending from the reticulum, across the diaphragm and through the pericardial sac. The wire was 4 inches long and composed of thin, round, smooth metal. There were no other significant gross findings.

Cow 2: Necropsy revealed this nearly toothless older cow to be thin. The owner reported that this cow died rather suddenly compared to the others. Upon exposing the thoracic cavity there was no odor as described in cow 1. However, again the pericardial sac was markedly distended and appeared somewhat dark. The pericardial sac was opened and found to be distended and filled with a large blood clot. Further dissection revealed a **thin smooth round wire** extending from the reticulum into the pericardial sac as described in the previous cow. Unfortunately for this cow, the wire then precisely struck and punctured a large myocardial artery causing acute and severe hemorrhage into the pericardial sac (hemopericardium). The immediate cause of death was attributed to the cardiac tamponade syndrome. During cardiac tamponade, the heart has difficulty performing due to constrictive pressures of the pericardial blood clot on the softer portions of the heart such as the atria and vena cava. Consequently, the flow of blood through the chambers is severely reduced or stopped and death ensues due to circulatory collapse.

The diagnostic summary was death due to classic Hardware Disease. The owner was sent home with the wire and instructed to look for the source. It was discovered that a **large tire** (large enough to encircle a round-bale) was being used as a hay feeding station. The tire had been split in half and contained **steel belts formed by a myriad of thin small wires**. Over time, as the cattle reached over the tire to feed on the hay bale, their necks tended to wear away the rubber and expose the wires, which would **eventually break free and drop into the hay**.

Based on this case, we would strongly discourage the use of steel belted tires for use as hay feeding stations.

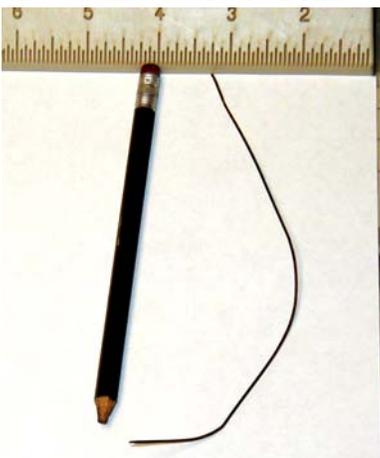


Figure 1. Wire retrieved from hardware case necropsy.

(Source: SDVMA Annual Meeting Proceedings, Aug. 2007)

### Holiday hours:

February 18 – President’s Day  
May 26 – Memorial Day



Figure 2. Old steel-belted tire used as hay feeder. Steel belts are fraying at the inside edge, exposing wires that eventually break off and fall into the feed (circle).

## Calf Scours Submissions at SDSU ADRDL

Russ Daly, Regg Neiger, Dale Miskimins, SDSU ADRDL

With calving season upon us, the importance of diagnostics in solving our producers’ calf diarrhea/enteritis problems once again comes to the top of our minds. While most scours pathogens are the same as what we have been dealing with for years, *Clostridium* infections and Salmonellosis are two conditions that are gaining more attention. With these conditions, and others, sample selection and proper submission is often the key to getting an answer versus a “no diagnosis.”

Some observations going into this calving season:

- In order to accurately diagnose enteric disease, but especially Clostridial disease, well-preserved samples (intestine) are the clincher. We are finding that many of these infections display very subtle lesions on histopath that would not be there if any autolysis is present. This will mean submitting (and quickly preserving in formalin) samples from very recent deaths, or submitting live calves to the laboratory.
- In some of these cases, lesions are confined only to a relatively small portion of the intestine, so portions of duodenum, ileum, jejunum, cecum, and colon are all important in increasing the odds of accurate diagnosis. It is of note that in some cases of Clostridial enteritis, lesions have been confined to the duodenum, while cases of *Clostridium difficile* will have lesions confined to the colon. This illustrates

that sending samples from throughout the digestive tract (instead of just jejunum) will increase the likelihood of diagnosis.

- Diagnosis of *Salmonella* infections is greatly aided by the submission of fresh mesenteric lymph nodes for culture.

Including as much history (beef vs. dairy, age of calf, extent of problem in herd) as possible on the submission form will also help diagnosis.

Some calf enteritis problems can be extremely challenging to deal with from the viewpoint of the practitioner and producer. When clinical problems persist in a herd, it is important to communicate with the pathologist about the situation. If samples from the same herd have been previously submitted, it is very helpful to indicate this on the submission form with specific case numbers if possible. As with any disease problem or submission questions, please feel free to contact the SDSU ADRDL with your questions at 605-688-5171.

## Calf Scours / Enteritis Submission Guidelines

1. Fecal Samples: 2-5 ml in plastic bag or tube
2. Tissue Samples--the following are recommended in addition to any tissues with gross lesions:
  - a) Duodenum
    - One 6–inch length, fresh
    - One 2 inch-length fixed in 10% buffered formalin
  - b) Jejunum
    - One 6–inch length, fresh

- c) Ileum
  - One 2 inch-length fixed in 10% buffered formalin
  - One 6–inch length, fresh
  - One 2 inch-length, fixed in 10% buffered formalin
- d) Cecum
  - One 2-inch square, fresh
  - One 2-inch square, fixed in 10% buffered formalin
- e) Spiral Colon
  - One 2-inch loop, fresh
  - One 2-inch loop, fixed in 10% buffered formalin
- f) Mesenteric lymph nodes (one each from mid and lower gut), fresh
- g) Colon or Cecal content: 2-5 ml in plastic bag or tube
- h) Liver or other organs: to culture for cases of septicemia, fresh and fixed

### FOR OPTIMAL ENTERITIS DIAGNOSTIC SUCCESS:

- Samples must be taken as soon after death as possible.
- Do not open or tie-off intestinal tissue that you are submitting to the lab.
- Do not freeze.
- Pool all formalin-fixed tissues in one container with adequate amounts of formalin.
  - Use 10 parts of formalin to 1 part tissue.
  - Formalin volume can be reduced for transport if the tissues have been fixed for a day or more.
- For fresh tissue, package and label the small intestine separately from the cecum/colon.
- Don't mix intestinal samples with other viscera.
- Chill fresh intestine and colon content before mailing.
- Pack in an insulated diagnostic shipping container with enough ice packs to maintain refrigeration until the specimens reach the laboratory.

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## Research News - SDSU Veterinary Science Department

### Research Spotlight: Alan J. Young, PhD—The Immunophysiology of Prion Diseases

Over the last 2 decades, a new infectious agent has become a challenge to both animal and human medical professionals. Unlike viruses, bacteria, and other known infectious agents, **prions** contain no nucleic acids, and are highly resistant to normal decontamination procedures. In this way, prions represent a new category of infectious agent, simpler in structure than the viruses they were originally believed to be.

It is now generally believed that prion diseases are caused when a misfolded protein (PrPd) is ingested or injected into a susceptible host, where it then proceeds to convert the normal healthy prion protein (PrPc) into a pathogenic form. While disease progression is very slow, these diseases invariably result in death of the affected

individual. Scrapie, the sheep form of prion disease, has been recognized since the early 18th century. This family of diseases gained significantly more prominence following the discovery that a new cattle version of the disease (Bovine Spongiform Encephalopathy - BSE) was the cause of a similar disease in humans (variant Creutzfeldt Jakob Disease-vCJD). Originally identified in the United Kingdom, BSE has now been found within Europe, Asia, and North America, resulting in significant economic consequences for the affected countries. Although several cases of BSE have been identified within the United States and Canada, no domestic cases of vCJD have been found to date.

Native prion diseases, or Transmissible Spongiform Encephalopathies, have occurred in cattle (BSE), sheep (Scrapie), humans (CJD), wild and domesticated cervids (Chronic Wasting Disease) and farmed mink (Transmissible Mink Encephalopathy). While these diseases share many similarities, pathology and transmission appears to differ.

Chronic Wasting Disease is geographically isolated to North America, and is limited to occurrence in free-ranging animals. Furthermore, CWD appears to transmit between susceptible animals more effectively than other prion diseases, making it a further challenge for control. Nonetheless, CWD shares many characteristics with sheep scrapie and human variant CJD. While the clinical signs associated with disease are caused by the progressive neural damage, the earliest asymptomatic phases of CWD and scrapie are characterized by the progressive appearance of disease-associated prion protein (PrPd) within lymph nodes and spleen of affected animals. Despite this lymphoid phase, there is no detectable immune response to these infections. **The focus of our laboratory is to understand the means whereby this deposition takes place, and the role of the immune system in the early pathogenesis of scrapie and CWD.**

Lymphocytes are mobile cells, continually migrating between the lymphoid organs and the blood. In this way, they continually survey the body for the presence of infection, but may also play a role in distributing lymphotropic infections throughout the body. The primary goal of our research is to **understand the mechanism whereby lymph nodes become infected with prions, how these prions replicate within the lymph nodes, and how the infectious agent is disseminated throughout the body.**

For most infectious agents, the first stage in any immune response is delivery of the agent to the local lymph node. This delivery may occur either as free particles or associated with specific cells called Dendritic Cells. Work in our laboratory has illustrated that prions, like other infectious agents, are transported to lymph nodes both by migratory dendritic cells, as well as free particles. Within one hour of exposure, PrPd can be detected within the local lymph node, indicating that the early response to prion infection is as expected for any other agent. However, when scrapie prions

are injected into sheep genetically resistant to disease, the local infection disappears over the first two weeks after infection, although the infection remains in genetically susceptible animals. These data would suggest that local immune responses may be taking place within resistant animals, accounting in part for differential susceptibility to disease.

Once in the local lymph node, the PrPd agent accumulates in association with specialized immune cells called Follicular Dendritic Cells, or FDCs. These cells normally exist to promote production of strong antibody responses, but in prion infection appear to play a role in disease progression. In an effort to better understand the mechanisms occurring within lymph nodes during prion disease, our laboratory has **developed a cell culture model of prion infection** which we are currently using to investigate these processes. This model has the potential to unlock the basis of prion infection in lymph nodes, and may also serve as a model for antibody production in domestic animals and humans. To date, we have found evidence for a local disturbance in the local antibody response associated with prion infection, and we are currently investigating the effect(s) of scrapie infection on sheep lymphocyte activation and differentiation.

In a final project, we are examining the mechanisms whereby a local infection can affect distant lymphoid tissues. In our lab, we have found significant changes in the composition of the peripheral blood associated with scrapie progression. In other research, infectious PrPd has been found in the blood lymphocytes of laboratory rodents infected with prions. In our studies, we have found evidence that blood cells may leave lymph nodes associated with infection, and we are attempting to further define both the cell type and the mechanism whereby they acquire the infection. Once defined, these blood cells may provide access to a simple blood test for prion disease of both animals and humans.

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## Extension News - SDSU ADRDL

### New Vaccination Guidelines for Horses Released

Revised guidelines for the vaccination of horses are now available from the Infectious Disease Committee of the American Association of Equine Practitioners (AAEP). The committee, comprised of researchers, vaccine manufacturers, and private practitioners, updated guidelines that were established by the AAEP in 2001. Recommendations for the use of vaccines are based on the age of the horse and its previous vaccination history. The guidelines are intended to serve as a reference for veterinarians as they employ vaccines in their respective practices.

Highlights of "Guidelines for the Vaccination of Horses" include:

- The identification of **tetanus, Eastern/Western equine encephalomyelitis, West Nile virus, and rabies** as "core" vaccines. Core vaccines have clearly demonstrated efficacy and safety, and exhibit a high enough level of patient benefit and low enough level of risk to justify their use in the majority of patients.
- "Risk-based vaccinations." These include **anthrax** (newly added), **botulism, equine herpesvirus (rhinopneumonitis), equine viral arteritis, equine influenza, Potomac horse fever, rotaviral diarrhea, and strangles**. These are included in a vaccination program after the performance of a risk-benefit analysis. The use of risk-based vaccinations may vary regionally, from population to population within an area, or between individual horses within a given population.

The guidelines also include recommendations for the storage and handling of vaccines, as well as information on vaccine labeling and adverse reactions. In addition, the AAEP's Infectious Disease Control Guidelines, which provide an action plan for the containment of infectious disease during an outbreak, are also included.

The complete document, along with easy reference charts, is available on the AAEP Web site at [www.aaep.org/vaccination\\_guidelines.htm](http://www.aaep.org/vaccination_guidelines.htm). (Source: AAEP)

### Mineral Nutrition Short Course for Beef Cattle Veterinarians

The SDSU Animal and Range Science Department and Veterinary Science Department will present a special short course on mineral nutrition, designed especially for beef cattle veterinarians. The session will be held on **Friday, March 7, 2008**, from 10:00 am to 4:00 pm, in Room 130 of the SDSU Animal Disease Research and Diagnostic Laboratory in Brookings.

Topics will be presented by faculty from SDSU and will include: mineral functions, requirements, deficiency symptoms, and toxicities in beef cattle. Special emphasis will be placed on determination of mineral status in beef cattle, liver biopsy procedures, and formulating mineral supplements for beef cattle.

Participants will receive a notebook with reference materials, lunch and breaks, and a liver biopsy probe. Registration is \$100, with a deadline of February 22, 2008. Registration is limited and will be honored on a first come, first served basis.

For more information contact: Dr. Cody Wright at 605-688-5448 or [cody.wright@sdstate.edu](mailto:cody.wright@sdstate.edu).

### Master of Public Health (MPH) Program for Practicing Veterinarians

The University of Iowa, College of Public Health, in collaboration with the Iowa State University College of Veterinary Medicine, is offering a distance-learning Master of Public Health (M.P.H.) program for practicing veterinarians. Applications for the second cohort of students are due March 15, 2008 and courses will begin with an in-person 2-week summer session in Iowa City from June 2-13, 2008. The second summer session will be in Ames in June 2009. The rest of the time, courses will be taken via the Internet. The program is designed to take two full years to complete. "Course availability at-a-distance is critical for many veterinarians who are unable to leave their practice location for extended time periods," said Mary L. Aquilino, Ph.D., assistant dean and director of the UI Master of Public Health program.

"The combination of summer on-campus institutes and Web-based instruction offers a practical blend of on-campus and distance-learning opportunities." The program was developed in response to recent national and world events calling for public health preparedness in areas where public health and veterinary medicine overlap. An Association of American Veterinary Medical Colleges (AAVMC) task force has identified an urgent need for veterinarians trained in public health. The distance-learning MPH will play a crucial role in meeting this need.

"This distance-learning MPH program provides practicing veterinarians with an excellent opportunity to contribute to the national need for more public practice veterinarians," said James A. Roth, DVM., PhD, director of the Center for Food Security and Public Health and at the ISU College of Veterinary Medicine. Veterinarians with an MPH degree can look forward to employment opportunities in local, state, and federal health, agricultural and environmental agencies, colleges and universities, the private sector food industry, the military, and international public health organizations. A degree in veterinary medicine from a U.S. accredited college of veterinary medicine is a prerequisite for the program. Students will be enrolled in the UI College of Public Health. Selected faculty from the ISU College of Veterinary Medicine will provide instruction as adjunct faculty of the UI.

For more information about the distance-learning MPH program, contact Lily French at 319-384-5991 in Iowa City ([lily-french@uiowa.edu](mailto:lily-french@uiowa.edu)), or Danelle Bickett-Weddle, DVM, MPH at 515-294-1492 in Ames ([dbweddle@iastate.edu](mailto:dbweddle@iastate.edu)). For more information about this 42-credit MPH degree, please visit: [http://www.public-health.uiowa.edu/mph/about/professional\\_programs/mph\\_vets.html](http://www.public-health.uiowa.edu/mph/about/professional_programs/mph_vets.html)

### Veterinary Loan Repayment Program Implemented

USDA's Cooperative State Research, Education, and Extension Service (CSREES) and Food Safety Inspection Service (FSIS) have jointly announced the implementation of the Veterinary Medicine Loan Repayment Program authorized in 2003 by the passage of the National Veterinary Medical Services Act (NVMSA).

This program provides for the repayment of veterinary medicine educational loans for veterinarians willing to work in areas designated as underserved by the Secretary of Agriculture. Currently, this program is only available for federal employees employed by FSIS as Public Health Veterinarians or Veterinary Medical Officers. FSIS intends to use these funds to offer 25 veterinarians payments of \$10,000 per year over 3 years to repay their educational debt in exchange for practicing in areas of veterinarian shortage or need.

CSREES indicates that they plan to extend this program in the future to non-federal positions as additional funds become available. The agency will seek stakeholder input into how to best define veterinarian shortage situations within the limits of the authorizing legislation and cost-effectively administer a large-scale loan repayment program for non-Federal veterinarians who serve in these situations.

FSIS is currently accepting applications for positions eligible to receive NVMSA loan repayments. A current listing of shortage or need areas and other timely information about NVMSA loan repayments to Federal veterinarians are available at

[http://www.fsis.usda.gov/careers/Student\\_Loan\\_Repayments\\_VMO/index.asp](http://www.fsis.usda.gov/careers/Student_Loan_Repayments_VMO/index.asp).

For additional information about FSIS NVMSA loan repayment opportunities contact Ronald K. Jones, Phone: 202-720-9521 or [Ronald.Jones@fsis.usda.gov](mailto:Ronald.Jones@fsis.usda.gov).

## VHSV, South Dakota Aquaculture, and Veterinary Medicine

Regg Neiger, DVM PhD

We are happy to announce that this January, the USDA has approved SDSU's ADRDL to conduct **aquatic animal export testing for VHSV** (Viral Hemorrhagic Septicemia Virus). We have added this test to help the South Dakota aquaculture industry deal with new challenges.

The greatest of these challenges is VHSV. No, South Dakota **does not have the virus at this time** and hopefully never will. However, VHSV is present in the Great Lakes region, where it has caused some large fish die offs in the Great Lakes and some inland waters in the states surrounding the Great Lakes. USDA-APHIS reacted to this outbreak by quarantining the states and Canadian provinces bordering the Great Lakes. These quarantined areas can only export fish under strict conditions. In addition, the states involved in the quarantine--and other states as well--have increased the regulations for bringing fish into their states. South Dakota fish producers have sold large numbers of fish to these states over the years. Now, in order for them to continue the sale of South Dakota fish, our producers must have their fish inspected and tested in much the same manner as we have been doing with domestic livestock for a long time now. Fish must be inspected and collected for testing by third party personnel certified by the American Fish Society (AFS) or licensed and accredited veterinarians. AFS certified personnel are limited and the aquaculture industry is looking to veterinarians to fill the gap.

For a long time there has been a fish bait industry in South Dakota, mostly involving trapping wild bait fish and selling that bait retail and wholesale within South Dakota or exporting it out of state. There is now a growing segment of SD aquaculture involved with raising fish on fish farms. These operations can involve hatching and growing or

feeding fish. These fish can be sold at most any age as stockers or go to slaughter plants.

The SD Game Fish and Parks department has been very helpful in many ways with this project, including the purchase of the low- temperature incubators necessary for the test procedure.

### **If you are involved with submitting samples for VHSV:**

The requirements for running the test are demanding and we need you to call us a couple of weeks ahead of submissions involving VHS virus isolation requests. We need to grow the testing cell lines so we have enough available for inoculation when your fish arrive. Please call Dr. Regg Neiger at the ADRDL (605-688-5171) for complete information and details.

**If you as a veterinarian would like to be involved:** It may be wise (and in some instances required) to get some training in fish health assessment. An opportunity to get such training is available in St. Paul, Minnesota, on March 6<sup>th</sup>, 2008, at the Minnesota Veterinary Diagnostic Laboratory. For full information, visit the website <http://www.cvm.umn.edu/outreach/events/fish.html>.

## Pieces and Parts

**Searching University Cooperative Extension websites.** A new and easy way to search Cooperative Extension sites across the country is <http://search.extension.org>. This is a quick way to gather research-based information on any topic supported by the nation's land-grant universities. The service is provided by "eXtension", an educational partnership of 74 Universities in the United States devoted to providing objective, research-based information and learning opportunities that help people improve their lives.

**Bovine Leukosis Virus (BLV) Serology—Change in test at ADRDL.** The IDEXX ELISA kit previously used at the SDSU ADRDL for BLV serology is off the production line until further notice. We are currently using the BLV Agar Gel Immunodiffusion (AGID) test until the kit comes back on line, or another ELISA test can be evaluated. We are offering the AGID test at a reduced cost of \$3 per sample (same as the ELISA) as a service to our clients until we know the future of the BLV ELISA test.

**FARAD continues to survive.** In December, FARAD (the Food Animal Residue Avoidance Databank) received a last-minute infusion of funds to keep operating for one more year. FARAD is a computer-based decision support system designed to provide livestock producers, Extension specialists, and veterinarians with practical information on how to avoid drug, pesticide and environmental contaminant residue problems. Veterinarians with questions about withdrawal times when drugs are used in an extra-label

manner can call 1-888-USFARAD (1-888-873-2723) or e-mail [farad@ucdavis.edu](mailto:farad@ucdavis.edu) or [farad@ncsu.edu](mailto:farad@ncsu.edu). These Regional Access centers operate during normal business hours. For the time being, the online question submission function is unavailable. More information about FARAD and drug residue avoidance can be found at [www.farad.org](http://www.farad.org).

**Addition to Compounding Pharmacy Listings.** The past two issues of Animal Health Matters have included listings of

pharmacies that offer compounding services for veterinarians. An additional business offering such services is:

Dakota Compounding Pharmacy  
628 Main Ave Suite C  
Brookings, SD 57006  
Phone: (605) 692-7992  
Fax: (605) 692-2118  
[www.dakotacompounding.com](http://www.dakotacompounding.com)

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## Student News - SDSU Veterinary Science Department

### “Introduction to Veterinary Medicine” at SDSU, Fall 2007

Russ Daly, Extension Veterinarian

Forty-nine students were enrolled in Veterinary Science 103, “Introduction to Veterinary Medicine,” for the Fall 2007 semester at South Dakota State University. The course was team-taught by the members of the SDSU Veterinary Science faculty with pre-vet advising responsibilities: Drs. Chris Chase, Russ Daly, Alan Erickson, Tanya Graham, Larry Holler, Dave Knudsen, Dale Miskimins, Regg Neiger, Angela Pillatzki, and Dave Zeman.

At the outset of the course, the teaching team identified the course goal as, “To inform, inspire, and prepare students for success in pursuing careers related to veterinary medicine.” Four objectives for the course were identified:

1. Position pre-veterinary students for academic success at SDSU.
2. Inform and prepare pre-vet students for applying to colleges of veterinary medicine.
3. Provide insight to students regarding the lifestyle and other aspects of veterinary practice today and in the future; support students’ interest in becoming veterinarians.
4. Inform students about other veterinary-related careers.

The students, predominantly incoming freshmen (67% female, 33% male), indicated strong interest in veterinary medicine upon entering the class: on a scale of 1 to 10, their answer to the question, “how interested are you in becoming a veterinarian?” with 10 being “absolutely, without a doubt,” averaged at 8.87.

Course material was presented by faculty members and veterinarians from outside SDSU. Topics and speakers included:

- What to expect from your advisor and what they should expect from you
- Study skills, access to tutoring, and chemistry help sessions – faculty from SDSU College of General Studies and Chemistry Department

- Tips for success from a panel of SDSU senior pre-vet students
- Colleges of Veterinary Medicine requirements and application procedures – Dr. John Thomson, Dean, Iowa State University CVM; Larry Bjorklund, University of Minnesota
- Rewards of private practice—Drs. Corale Dorn, Dell Rapids; Don and Megan Ernst, Webster; Michelle Jensen, Harrisburg; Dick Rogen, Sioux Falls; and Brett Andrews, Burwell NE (Academy of Rural Veterinarians).
- Industrial and governmental veterinarians—Drs. Jerry Stokka, Pfizer; and Dustin Oedekoven, SD Animal Industry Board.
- Diagnostic and research veterinarians

A post-course survey revealed that 89% of the students indicated they had similar or greater interest in veterinary medicine at the end of the course, despite many of them having just completed the rigors of their first college semester of coursework. Seventy-eight (78) percent indicated that information presented in the course influenced their interest in the profession.

The success of this semester’s course was due in large part to the practitioners and others who gave their time to speak to the students. Many more South Dakota veterinarians than were able to be scheduled expressed interest in sharing their stories with the class. The link between practitioners of all aspects of the profession and these students is an important one. If you are interested in sharing information with the class or have ideas for topics for next year’s class sessions, please contact Dr. Daly at the SDSU Veterinary Science Department.

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# Animal Health MATTERS

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The SDSU Veterinary Science Department conducts research, teaching, professional service, and extension service to South Dakota and the surrounding region. Entities within the department include the South Dakota Animal Disease Research and Diagnostic Laboratory, the Olson Biochemistry Laboratory, and the Center for Infectious Disease Research and Vaccinology.

The South Dakota Animal Disease Research and Diagnostic Laboratory is a full-service, all-species diagnostic laboratory accredited by the *American Association of Veterinary Laboratory Diagnosticians (AAVLD)*. The AAVLD accreditation program complies with international expectations for quality diagnostic services under the guidance of the *World Organization for Animal Health (the OIE)*. The ADRDL collaborates with the USDA National Veterinary Services Laboratory on many federal disease monitor and eradication programs and is a member of the National Animal Health Laboratory Network. For information regarding the laboratory's Quality System, contact Rajesh Parmar – ADRDL Quality Manager. at 605 688 4309.

Phone: (605) 688-5171 · Fax: (605) 688-6003 · Website: <http://vetsci.sdstate.edu>

## Calendar of Events

**March 7 – Mineral Nutrition Short Course for Beef Cattle Veterinarians**, SDSU Animal Disease Research and Diagnostic Lab, Brookings, SD <http://ars.sdstate.edu/extbeef/>

**April 3-5 – Academy of Veterinary Consultants Spring Meeting**, Omaha, NE <http://www.avc-beef.org>

**May 28-30 – International Symposium on Beef Cattle Welfare**, Kansas State Univ. Manhattan, KS <http://www.isbcw.beefcattleinstitute.org/>

**June 1-3 – SDVMA Summer Meeting**, Ramkota Inn & Convention Center, Pierre, SD. Recreation opportunities on Monday expanded to include team roping. (605) 688-6649 or [www.sdvmed.org](http://www.sdvmed.org)

**August 3-8 – 5<sup>th</sup> Biennial Foreign Animal Diseases Training Course**, Best Western Inn on the Park, Madison, WI <http://svmweb.vetmed.wisc.edu/pbs/courses/FAD2008/index.php>

**August 13-16 – South Dakota Veterinary Medical Association Annual Meeting**, Ramkota Inn, Rapid City, SD 605-688-6649 or [www.sdvmed.org](http://www.sdvmed.org)

Editor: Russ Daly, DVM

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