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Animal Health MATTERS Newsletter

Veterinary and Biomedical Sciences

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Animal Health MATTERS

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South Dakota State University

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Animal Health MATTERS

April 2013



Dave Zeman Retires as Department Head and Director

Russ Daly DVM, SDSU

After 27 years at SDSU, including 16 of them as the administrative leader of the Veterinary and Biomedical Sciences Department (VBSD) and Animal Disease Research and Diagnostic Laboratory (ADRDL), Dr. David Zeman has officially retired.

A reception honoring him on his retirement was held in the atrium of the Northern Plains Biostress Lab on Monday, January 14. A large gathering of his SDSU colleagues, including upper administration, fellow department heads, faculty and staff, as well as friends and family members, were on hand to honor Dr. Zeman and wish him well.

A North Dakota native, Dr. Zeman's SDSU career started in 1986 after completing his PhD degree at Louisiana State. He served as a diagnostic pathologist and case coordinator in the Veterinary Science Department, and became department head and director of the ADRDL in 1998.

During his tenure as department head and ADRDL director, both the department and laboratory experienced growth in testing numbers, revenue and employees, all in the name of better service to the veterinarians and livestock producers in the state and region. In addition, the lab's Food Safety section was created, one of the 2010 Governor's Centers (the Center for Infectious Disease Research and Vaccinology) was awarded to the department, and the Animal Resource Wing was added. Under his leadership, the ADRDL became members of the National Animal Health Laboratory Network, the Food Emergency Response Network, and the Veterinary Laboratory Investigation and Response Network. Dr. Zeman also pro-



Dr. Russ Daly, (R) acting department head, presents a plaque to Dr. Zeman from the faculty & staff of the Veterinary and Biomedical Sciences Department. (Photo: Eric Landwehr)

vided the impetus to change the department's name to the Veterinary and Biomedical Sciences Department.

Zeman is a diplomate of the American College of Veterinary Pathology, one of only two in the state of South Dakota. He has served in numerous national leadership roles relative to animal health and diagnostic medicine, including president of the American Association of Veterinary Laboratory Diagnosticians (AAVLD).

Among his many awards and honors, Dr. Zeman received the EP Pope National Award for professional contributions and leadership to the discipline of veterinary

diagnostic medicine in 2006 from the AAVLD, the discipline's highest honor. He was named the South Dakota Veterinarian of the Year award in 2003 by the South Dakota Veterinary Medical Association.

Dr. Zeman has planned an "active retirement", signing on as Executive Director of the South Dakota Poultry Industries Council. He will also serve as a veterinary pathology consultant for IDEXX Laboratories, Inc. He and his wife Colleen are spending the winter in Venice, Florida and will return to Brookings in the spring. ■

Interim Director's Message: Transitions

Russ Daly, DVM, Interim Director ADRDL

Among the best things about living here in the Northern Plains are the changing seasons. Every few months we live through changes in our weather patterns, changes in the length of the day, and changes in the landscape. Even though this year we're still waiting for springlike weather, we know it's coming. Before long the planters will be in the fields, the pastures will green up and the trees will finally sprout leaves. That transition is always a welcome one where we live.



Right now our department and the ADRDL are going through transitions as well. This past January, we sent off Dr. Dave Zeman with best wishes upon his retirement. Dave has served all of us as a worthy leader of our units here at SDSU, and has left the department and lab in great shape by any measure. But he has also served all of us as a trusted friend, advisor, and advocate for animal health inside as well as outside our state's borders. Dave is making a transition out of the academic world. He will continue to stay active in his discipline, but now has a great opportunity to spend time more as he sees fit.

The transition to a new department head and ADRDL director is in full swing. A search committee has met and reviewed the results of a national search, and is in the process of inviting candidates to campus for interviews. I hope that if you get the chance, you'll participate in this process—either directly or through your representatives on the committee. I don't have to tell any of you that this is an important job for animal health and veterinary medicine in South Dakota

and the region. I'm confident that a new director will be in place before long, starting a transition of his or her own.

Finally, it's nearing the end of the spring semester here on the SDSU campus, and many of our pre-veterinary students are preparing to make transitions of their own—moving from their undergraduate years into veterinary school. If the past is any indication, these students will continue to spread the reputation of SDSU's pre-vet program to places like Iowa State and the University of Minnesota. We will be honoring these future veterinarians by presenting them stethoscopes at a ceremony on campus on the last day of classes. We'll have their pic-

tures and names for you in our next Animal Health Matters.

Here's hoping the transitions in your own lives are all going well! As always, let me know how we in our department can be of service to you in answering your questions about animal health. ■



Dr. Barry Dunn, Dean of the College of Agriculture and Biological Science, (right), presents Dr. David Zeman, retiring Veterinary and Biomedical Sciences Department Head, (center), with a gift at the reception held in the Northern Plains Biostress Atrium. (Photo: Eric Landwehr)

Dr. Ying Fang Awarded Distinguished Researcher Award at SDSU

Dr. Ying Fang, Associate Professor in the Veterinary and Biomedical Sciences Department, received the Distinguished Researcher Award for the College of Agriculture and Biological Sciences at SDSU's Faculty Recognition Event held February 11 on campus. This award recognized Dr. Fang's contributions to the understanding and prevention of viral diseases of animals. A key accomplishment illustrating that point is her recent first authorship of a paper in the Proceedings of the National Academy of Sciences of the United States of America (PNAS) entitled, "Efficient -2 frameshifting by mammalian ribosomes to synthesize an additional arterivirus protein." This is the first time an SDSU researcher has been published in this highly ranked and regarded journal.

Dr. Fang's research focuses on the molecular characterization of viral pathogens, development of vaccines and diagnostic assays for disease prevention and treatment. Dr. Fang earned significant external funding, has published more than two dozen peer reviewed journal articles and mentors both undergraduate and graduate student researchers. She has been recognized as one of the leading scientists in the field.

Dr. Fang received her MS degree from Iowa State University in 1997 and PhD



Dr. Barry Dunn, (center) Dean of the College of Agriculture and Biological Sciences, awards Dr. Ying Fang (left), the Distinguished Researcher Award as Dr. Kevin Kephart, Vice President of Research, looks on. (Photo: Eric Landwehr)

degree from South Dakota State University in 2004. In collaboration with other researchers, she has published more than 40 papers in peer-reviewed journals, and has been invited to give presentations nationally and internationally. Her previous awards have included the Intellectual Property Commercialization Award in 2010, and the Dean's Research Award in 2006.

Established in 2008 by the Office of Research & Sponsored Programs and the Research Advisory Council, The Distinguished Researcher Awards are made to outstanding SDSU faculty members who are selected by their college deans in recognition of significant achievements in research, scholarship, or creative activities. ■



Ag Day at Washington Pavilion

SDSU's Pre-Veterinary Club has had an annual presence at Ag Day at the Washington Pavilion, and this year was no exception. This year's event was held March 23 at the pavilion in Sioux Falls. The students put together an interactive booth that dealt with internal and external parasites of pets and farm animals. Children and their parents were able to look through the microscope and see some of these "bugs" for themselves and get tips on how to keep their animals free of these pests. Over 1,800 people were in attendance at this year's Ag Day at the Pavilion.

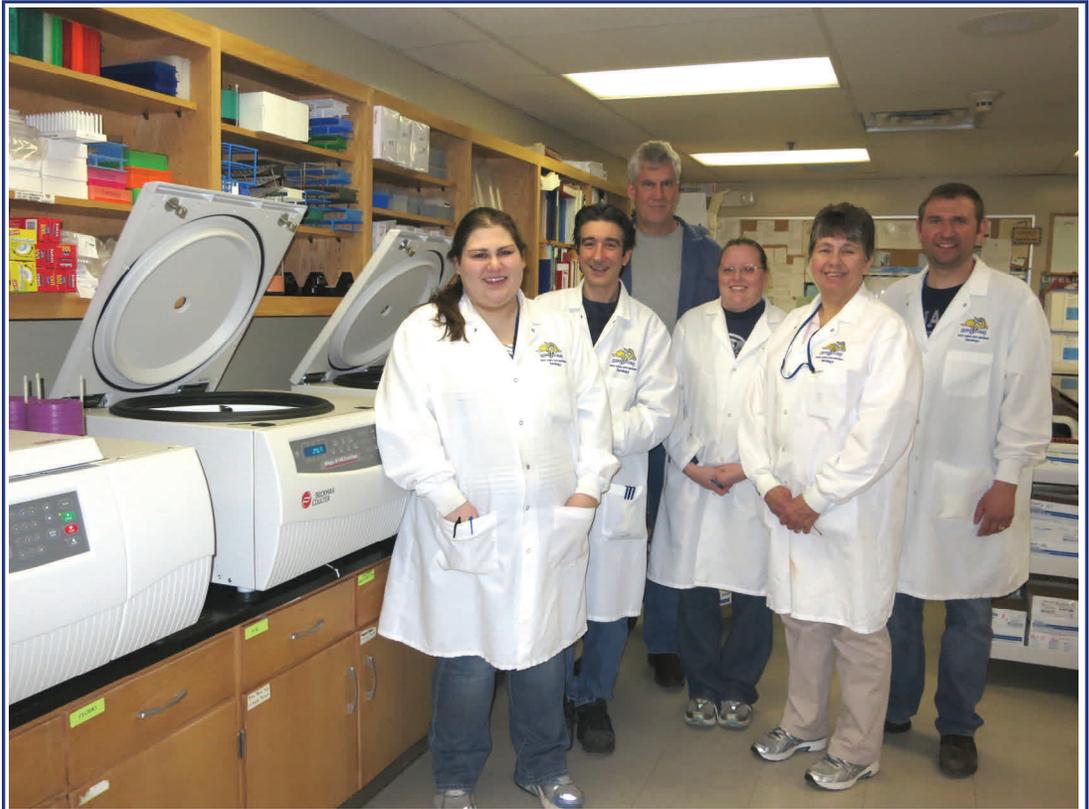
Pictured with their booth are (L-R) Kenzie Rathbun, pre-veterinary student from Fairview, SD; Dr. Dave Knudsen, Pre-Veterinary Club Advisor; and Hannah Ellsworth, Pre-Veterinary Club president, from Ft. Thompson, SD. ■

Meet the Serology Section at ADRDL

On any given day, the Serology Section at the SDSU Animal Disease Research and Diagnostic Laboratory handles hundreds to thousands of samples from animals to be tested for various reasons. Some of these animals are moving from barn to barn and disease exposure needs to be known. Others are going to dry lots or feedlots. Some are sick. Some are crossing state or international lines or heading to new herds. A wide variety of tests on several species are run every day. This past fiscal year over 480,000 individual tests were performed in the serology section.

Trends over the years have changed. Currently a large portion of the testing is export driven with beef and dairy animals going to places such as Turkey and Russia and swine going to Mexico. The section has been a national leader in this field and is actively involved with the Livestock Export Association and their educational seminars. Last year, over 126,000 samples were tested for Bovine Leukosis Virus (BLV). Next most frequent is the Johne's ELISA (over 95,000 tests), followed by Brucella testing (nearly 95,000), and Bluetongue ELISA (over 80,000). PRRS antibody testing still comes in strong, but screening trends have shifted away from serology and more towards oral fluid sampling and PCR.

The Serology Section at SDSU's ADRDL has been a national leader in developing Quality Control/Quality Assurance procedures for the in-house review of their testing procedures. In addition to their busy workload serving veterinarians and producers across the region, the staff is continually assessing and developing new serologic tests and procedures. Recent additions include the DAKO Mycoplasma ELISA, IDEXX Bo-



The serology group, (L-R), Kelly Schmit, Craig Welbon, Dr. Eric Nelson, Jennifer Lemon, Linda Fawcett, and Aaron Singrey, stand next to the centrifuges that were purchased recently. Not pictured: Tami Messenger. (Photo: Janice Kampmann)

vine Pregnancy test, Canine Brucella IFA and, soon to be added, Vesicular Stomatitis serum neutralization (SN) screening tests for the export market.

Dr. Eric Nelson has been the Serology Section Leader since 1995. He is responsible for the overall management of the Diagnostic Serology Section and serves as a resource to other sections within the ADRDL. His primary academic interests include classical and molecular virology, viral pathogenesis and diagnostic assay development and validation. Dr. Nelson has been very involved with PRRS virus research, as well as projects dealing with enteric viruses.

Linda Fawcett has been in charge of the day to day operations of the serology section since 1989. Linda has a BS degree in Microbiology from SDSU with an emphasis on infectious diseases. She is trained in all aspects of diagnostic serolo-

gy and is heavily involved with new test implementation. Along with day to day operations, she also coordinates the export testing and stays involved with the Export Association, helping with their educational programs.

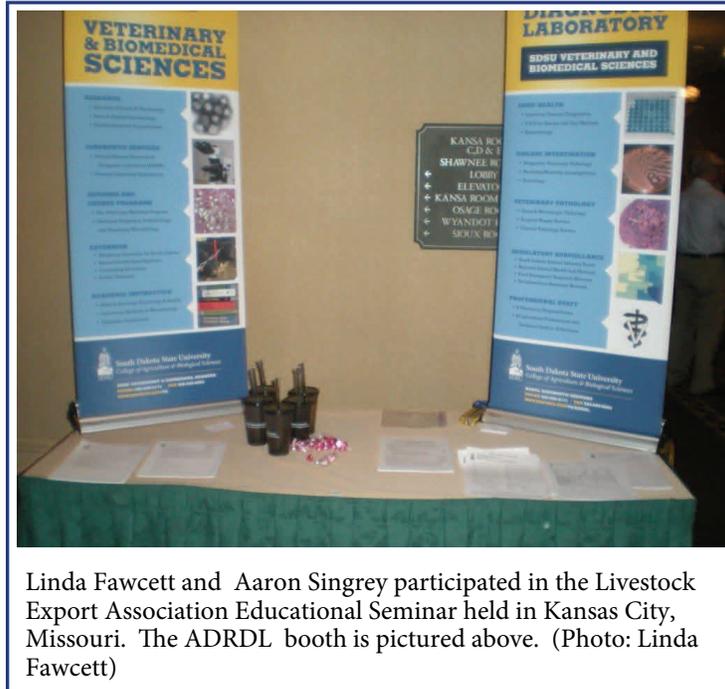
Aaron Singrey has BS and MS degrees in Animal Science from SDSU along with experience in animal genetic testing and has been with the serology section since 2006. In addition to his general diagnostic duties, he is responsible for quality assurance and quality control for the section and helps other sections in this area. Aaron also helps with test evaluation before they go on line.

Craig Welbon is another SDSU grad with a BS in Microbiology. Craig has a background in medical research beginning at the National Institutes of Health (NIH) where he researched HIV/AIDS. This research experience took him to

Lausanne, Switzerland where he studied biochemistry and continued HIV research by assisting in a clinical drug trial researching the efficacy of two new antiviral drugs. Later, Craig worked at the American Red Cross researching dendritic cell characteristics and collection methods for use in cancer therapies. He has been with the serology section since 2004 and specializes in client-specific specialized PRRS testing, test development and validation, and cell culturing and maintenance.

Jennifer Lemon also is a SDSU grad with a BS in Microbiology and has been with the section since fall of 2005.

Prior to joining the serology section, she worked in vaccine development and production with Fort Dodge Laboratories. Along with daily testing, she is responsible for instrument and equip-



Linda Fawcett and Aaron Singrey participated in the Livestock Export Association Educational Seminar held in Kansas City, Missouri. The ADRDL booth is pictured above. (Photo: Linda Fawcett)

ment maintenance and calibration procedures and records. She has also been heavily involved with the Gen 5 computer system linking the ELISA reader directly to the VADDS reporting system.

yet accurate test results available online as soon as a test is completed and verified to be within the QC standards for the test. ■

Two new members joined the serology section in the fall of 2011 to help with the day to day testing and client contact. **Tami Messenger**, who is a SDSU grad in Microbiology, came from the USD medical research area. She is originally from Wisconsin. **Kelly Schmit** is a Minnesota native with a degree in Cell and Molecular Biology from the University of Minnesota-Duluth. Both assist with day to day testing and a number of the 'behind the scenes' tasks necessary to meet the needs of our clients.

The serology section strives to be number one in customer service with quick,

Abstract: Effect of Safe-Guard Free-Choice Mineral Blocks on Trichostrongyle Nematodes in Pastured Cattle from Eastern South Dakota

Stephanie Smith, Abdelhakim Eljaki, Russ Daly, and Mike Hildreth, SDSU

Parasitic nematodes have significant detrimental effects on the profitability of beef production in South Dakota. Administering anthelmintics can be inconvenient and expensive when treating cattle on pasture. Free-choice anthelmintics were developed to improve the ability of beef producers to effectively deworm cattle without passing them through a cattle chute. The convenience of free-choice anthelmintics outweighs those of traditional deworming practices; however, the efficacy of the free-choice anthelmintics has not been tested under pasture conditions in United States Northern Great Plains. The purpose of this study was to determine the efficacy of Safe-

Guard® (Fenbendazole) free-choice mineral blocks in pastures from eastern South Dakota. Two adjacent cattle herds were used for this study. A group of 42 heifers (treatment) were given one free-choice SafeGuard® Mineral block for four days. A similar group of 22 steers (controls) were given similar, but non-medicated mineral blocks. Both groups were parasitized with trichostrongyle nematodes; PCR results indicated the presence of *Trichostrongylus spp.*, *Cooperia spp.*, *Ostertagia spp.*, *Haemonchus contortus*, and *Haemonchus placei*. Prior to treatment, nematode loads were higher in the control steers (35.82 eggs/gram) than the treated heifers (22.63 eggs/gram).

After treatment, nematode loads dropped to 1.50 eggs/gram (93.4% reduction) in the treatment group, but the control group nematode loads increased to 69.02 eggs/gram (92.7% increase). Based upon the calculated consumption rate of the SafeGuard® Mineral block by the treatment group, the average dosage consumed was lower than that recommended by the manufacturer. In spite of the lower intake, access to the medicated blocks significantly decreased trichostrongyle nematode loads in the treated cattle.

(Full paper to be published in South Dakota Academy of Sciences Proceedings, <http://www.sdaos.org/>) ■

Pieces and Parts

Dr. Chris Chase Panel Manager for USDA NIFA SBIR Program

Dr. Chris Chase served as panel manager for the USDA-National Institute of Food and Agriculture (NIFA) Small Business Initiative for Research (SBIR) Animal Health and Well-Being Panel. This grant program is for small businesses that are developing products for animals. Every federal agency that awards grants to organizations outside of the government has to set aside 2.5% of their budget for this SBIR program. It was Dr. Chase's job to organize a panel of 12 individuals and assign grants to each one of the panel members for review. Panelists represented academia, the animal health industry, and veterinary clinical practice from throughout the US. Dr. Chase's panel utilized a "virtual format" where panelists received and reviewed grants using an internet site. In order to minimize panelists' time and expense, the discussion meetings were also "virtual", being held via web conferencing over a three-day period.



Travis Clement Recognized for Professional Staff Excellence

Travis Clement was awarded the SDSU Professional Staff "Excellence in Professional Role" at the SDSU Professional Staff awards ceremony held Thursday, March 7, at the McCrory Gardens Visitor Center. The Professional Staff Award for Excellence in Professional Service recognizes consistently superior professional achievement within and beyond the professional staff member's position requirements and expectations.

Travis is a research associate within the molecular diagnostics section of the ADRDL. His leadership in that section has resulted in outstanding relationships with clients through providing timely and reliable test information for those clients. His award noted his contribution to the health of livestock and to the vitality of the agricultural industry of the state and region through his professional work. He is a member of the Association of Veterinary Microbiologist – Heartland Chapter and American Association of Veterinary Laboratory Diagnosticians.



Dr. Laurie Nichols presented Travis Clement the "Excellence in Professional Role" award. (Photo: Eric Landwehr)



Lucinda Bloker Joins Bacteriology Section

Lucinda Bloker started her new position as a microbiologist within the Bacteriology Lab in February. Lucinda, originally from Lake Benton, MN, has Bachelor's degrees in Psychology and Microbiology from SDSU. She most recently worked at SGS, as well as RTI in Brookings. Lucinda lives with her husband Jeremy and two children, Brock, 8, and Isabelle, 6, in Volga.



Bailey Herd Health Conference Covers Sheep and Goat Medicine

February saw another well-attended James Bailey Herd Health Conference held on the campus of South Dakota State University. A group of 58 veterinarians from six states attended the conference, held February 16. This year's conference theme was, "Opportunities for Veterinarians in Sheep and Goat Medicine." A great lineup of speakers, including Drs. Larry Goelz, Pipestone Veterinary Clinic; Jeff Held, SDSU Extension State Sheep Specialist; Mike Hildreth, SDSU Biology and Microbiology Department; Larry Holler, SDSU Veterinary and Biomedical Sciences Dept.; and Suelee Robbe-Austerman, USDA/APHIS/NVSL Mycobacteria/Brucella Section, presented topics throughout the day.

Participants were brought up to date on client services for sheep and goat producers, reproductive management; internal parasites and anthelmintic resistance, availability and best uses of pharmaceuticals, feed management, reproductive diseases, John's disease, and scrapie. The last session of the day featured a panel discussion by all five speakers. ■



The five speakers at the James Bailey Herd Health Conference, (L-R), Dr. Mike Hildreth, Dr. Larry Goelz, Dr. Jeff Held, Dr. Suelee Robbe-Austerman, and Dr. Larry Holler, participated in a panel discussion at the close of the program. (Photo: Janice Kampmann)

Continuing Education Events

June 6—7

SDVMA Summer Meeting

AmericInn, Pierre, SD

(605) 688-6649 or www.sdvmed.org

June 17—19

Nebraska VMA Summer Meeting

Hampton Inn & Suites Hotel & Conference Center

www.nvma.org

June 23—25

Montana VMA Summer Meeting and Trade Show

Hilton Garden Inn, Kalispell, MT

www.mtvma.org

June 15—19

Jackson Hole Veterinary Rendezvous

Jackson Hole, WY

www.jhvr.org

August 11—14

South Dakota Veterinary Medical Association Annual Meeting

Ramkota Inn, Sioux Falls, SD

(605) 688-6649 or www.sdvmed.org

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Animal Health MATTERS

The SDSU Veterinary and Biomedical Sciences 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 Agricultural Analytical Service 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.

Editor: Russ Daly, DVM

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