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Animal Health MATTERS Newsletter

Veterinary and Biomedical Sciences

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Animal Health MATTERS

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SDVMA and SDSU Initiate Stethoscope Ceremony for Outgoing Pre-Veterinary Students

Russ Daly DVM, SDSU

South Dakota State University preveterinary students those going on to veterinary school as well as scholarship award recipients—were honored at a special ceremony held on April 27, 2012 on the SDSU campus.

Fifteen students (see complete list on page 3) who had completed their pre-veterinary coursework at SDSU were presented Littmann Cardiology III stethoscopes courtesy of the SDSU Veterinary and Biomedical Sciences Department and the South Dakota Veterinary Medical Association (SDVMA). Each stethoscope was personalized with the student's

name and an SDSU insignia, and was presented to the student by an individual of their choosing who had played a special role in their education while at SDSU.

In addition, Veterinary and Biomedical Sciences Department scholarships were awarded to returning pre-veterinary students for the 2012-2013 school year.

Addressing the students, faculty, and family members present were Dr. Andrea Ray, Tea Veterinary Clinic, representing the SDVMA and Dr. Barry Dunn, Dean,

SDSU Pre-veterinary students accepted to veterinary schools for Fall 2012, with VBS faculty. (Back row, L-R): Dr. David Zeman, Dr. Regg Neiger, Cass Barbic, Elizabeth Olson, Erin Berg, Heather Browning, Andrea Wagner, Karisa Donahue, Stephanie Smith, Karly Ruppert (kneeling), Emily Jungemann, Casey Kaltenbach, Dr. Andrea Ray (kneeling), Dr. Larry Holler, Dr. Russ Daly, Dr. Dale Miskimins. (Front row, L-R): Alyssa Hesemann, Ben Langsten, Levi Garbel, Dustin Ahrendt. (Not pictured: Laura Blair). (Photo: Janice Kampmann)

SDSU College of Agriculture and Biological Sciences. Dr. Dave Zeman, Department Head, Veterinary and Biomedical Sciences, presented the scholarship awards, and Dr. Russ Daly, Associate Professor, introduced the students accepted to veterinary schools.

The stethoscopes proved to be very appreciated by the students receiving them. The department and SDVMA also welcomed the chance to provide these students this type of recognition for the first

time ever. Dr. Ray stated, "I believe the SDVMA and SDSU have started a great tradition presenting a stethoscope to each pre-vet student that has been accepted to vet school. I remember receiving my first stethoscope from my then-employer Dr. Genetzky when I was entering vet school, and I still use the same one in my practice today. The road before and after vet school is filled with many challenges and it is good to know the SDVMA is supportive."

Director's Message: Planting Seeds for the Next Generation of Veterinarians in South Dakota

David H. Zeman, DVM, PhD, DACVP — Director ADRDL

This issue of Animal Health Matters features our first (soon to be annual) "stethoscope presentation ceremony" for 15 SDSU students that are moving on to veterinary colleges across the country, and even the Car-



ibbean Sea. The pre-veterinary medicine advisors gathered together at the end of the spring semester to recognize those that were accepted into veterinary colleges, and those that will receive SDSU

scholarships this coming fall. The new ceremony format was inspired by one of our own former SDSU pre-vet students and now faculty member, Dr. Russ Daly. Many parents attended, and it was a fun time of celebration to launch our students into a wonderful profession. As the world population continues to climb, food animal veterinarians will continue to play a key role to assure a healthy food animal supply. These students will use their computer and spreadsheets as much as their scalpel and vaccine guns compared to former food animal veterinarians. However, their goals are the same; helping food animal producers feed a hungry world. The demand for work in

the companion animal sector continues to be strong as well, and is so important and appreciated by animal lovers who benefit in so many ways from the enjoyment that comes from interacting with a healthy pet. Even though undergraduate instruction is the smallest component of our activity in the Veterinary & Biomedical Sciences Department (dwarfed by our diagnostic service laboratory and research programs), it is definitely one of the most important things that we do. Thank you to our students for pursuing veterinary medicine, and thank you SDSU Pre-vet Advisors for planting and nurturing the seeds for South Dakota's future veterinarians.

Dr. David Francis Honored at Retirement Ceremony

Russ Daly DVM, SDSU

SDSU and the Department of Veterinary and Biomedical Sciences paid tribute to David Francis, PhD, at a special ceremony honoring his retirement from SDSU. The ceremony was held in the atrium of the Northern Plains Biostress building on the SDSU campus on June 15, 2012.

Dr. Francis' work throughout his career at SDSU has gained him international recognition as an expert in the pathogenesis of enterotoxigenic *Escherichia coli* (ETEC) infections and the mucosal immune response to that and similar pathogens. While this work has taken place primarily in baby pigs, much of the knowledge gained from his work has applications in the human medical world as well. Infections with ETEC are not only a scourge on baby pigs and the swine industry, they are also important human pathogens implicated in diarrheal diseases of young children in developing countries.

As such, much of Dr. Francis' research has dealt with using baby pigs as a model of human disease. Work to understand protective immunity against ETEC in baby pigs has led to investigations of preventive and therapeutic products to prevent these infections in pigs and people.

Dr. Francis' career at SDSU began in 1978, when he joined the Veterinary Science Department as an assistant professor after obtaining his PhD in Microbiology from the University of Missouri. Since then, he has held many positions within the department and university, and has amassed many honors and awards. In 1997, he was honored

Francis (Continued on page 5)



Dr. Francis' retirement reception was an opportunity for three "Davids" with long-standing ties to SDSU's Veterinary and Biomedical Sciences Department to re-unite. (L-R) Drs. David Benfield, former researcher and professor at SDSU, now Professor and Associate Director of the Ohio Agricultural Research and Development Center, Ohio State University; David Francis; and David Zeman, SDSU, Department Head, Veterinary and Biomedical Sciences. (Photo: Russell Lokken)

2012-2013 SDSU Veterinary and Biomedical Sciences Department Scholarship Award Winners



SDSU Pre-Veterinary scholarship award winners, 2012-2013, with VBS faculty. (Back row, L-R): Dr. David Zeman, Dr. Regg Neiger, Lacy Bobb, Kylie Poel, Tawnie DeJong, Britney Rauk, Dr. Russ Daly, Dr. Larry Holler, Dr. Dale Miskimins. (Front row, L-R): Meagan Abraham, Kyle Schornack, Nathan Wilen, Jessica Simons. (Not pictured: Hillery Baysinger, Allison Marnette, Elizabeth Young).

Dr. J.B. Taylor Memorial Scholarship:

Lacy Bobb, Edgerton, MN

RTI Veterinary Science Scholarship:

Kylie Poel, Milbank, SD

Dr. Harry Halverson Memorial Scholarship:

Tawnie DeJong, Philip, SD

Richard and Carol Dierks Scholarship:

Nathan Wilen, Belle Fourche, SD

J. Michael Robbie Scholarship:

Meagan Abraham, Ramona, SD Allison Marnette, Aberdeen, SD

Freeman Lewis Scholarship:

Hillery Baysinger, Rapid City, SD Britney Rauk, Forest City, IA Keith Schornack, Perham, MN Jessica Simons, Springfield, SD Elizabeth Young, Yankton, SD.

SDSU Pre- Veterinary Students Accepted to Veterinary Schools for Fall 2012

(Dr. Alan Erickson, SDSU, presenter) Dustin Ahrendt Hartford, SD Iowa State University Cass Barbic Downers Grove, IL Mississippi State University (Dr. Regg Neiger, SDSU) Iowa State University (Dr. Rose Davidson, Brookings, SD) Erin Berg Labolt, SD Hendricks, MN Heather Browning Ross University (Dr. Dave Zeman, SDSU) (choosing between Iowa State University and Kansas State University) Laura Blair Columbus, NE Karisa Donahue Howard, SD Iowa State University (Dr. Dale Miskimins, SDSU) Levi Garbel Crosby, ND Kansas State University (Dr. Ben Holland, Brookings, SD) Lakefield, MN (Dr. Regg Neiger, SDSU) Alyssa Hesemann Iowa State University **Emily Jungemann** Wolsey, SD Iowa State University (Dr. Russ Daly, SDSU) (Dr. Russ Daly, SDSU) Casey Kaltenbach Miller, SD Iowa State University Ben Langsten Cibolo, TX University of Missouri (Dr. Alan Erickson, SDSU) Elizabeth Olson Ringsted, IA (Dr. Andrea Ray, SDVMA) University of Minnesota Karly Ruppert Currie, MN University of Minnesota (Dr. Russ Daly, SDSU) Stephanie Smith Hayti, SD Iowa State University (Jen Eide, SDSU) (Dr. Rose Davidson, Brookings, SD) Andrea Wagner Parkston, SD Iowa State University

Accounting and Human Resources Staff Keep the VBS Department Running

Russ Daly DVM, SDSU

On one hand, SDSU's Veterinary and Biomedical Sciences Department carries out the traditional missions of a typical department in South Dakota's largest university. Research, teaching, and outreach roles are built into the departmental DNA. But on the other hand, the department, especially its Animal Disease Research and Diagnostic Laboratory, functions out of necessity as a multi-million dollar business entity. A staff of over 100 engaged with performing on the order of a half million diagnostic test procedures a year, in addition to research, teaching and outreach functions, requires work and diligence to support and track those functions.

Keeping those widely varied and critical activities running is a team of three individuals that oversee the important accounting, purchasing, and human resource tasks that need to occur to keep the accounts receivable coming in, to keep the employees paid, and to keep the supplies and inventory stocked on the shelves.

Russell Lokken, BS, MBA, has the title of Program Assistant II and has been at SDSU for the past 32 years. He oversees the accounting, purchasing, and human resources functions of the VBS Department as well as the ADRDL. Russell has been with the department for the past 14 years. Prior to that, he held positions on campus with the Department of Finance and Budget in the Cashier's office, as well as with campus stores and the print facility. A native of White, he holds an accounting degree from Mankato State University and an MBA from the University of South Dakota.

Shirley Wiener has served as a Senior Secretary within the department for the past four and a half years. She is responsible for management of timekeeping and leave balances, as well as many human



Accounting and Human Resources personnel (Clockwise from upper left:) Shirley Wiener, Senior Secretary; Russell Lokken, Program Assistant II; and Sandy Gustafson, Senior Claims Clerk.

resources functions for the 59 permanent faculty and staff, as well as the approximately 50 student and hourly workers employed throughout the year. Shirley's experiences with agriculture as well as accounting run deep, as she keeps her farm's records at home, has been employed as a bookkeeper at a local farmers cooperative, and has worked as an administrative assistant for a major seed company.

Sandy Gustafson is Senior Claims Clerk at the VBSD. She is the main person responsible for ordering and keeping track of the invoices for all the laboratory equipment and supplies that are used in the course of running the ADRDL's hundreds of thousands of test procedures performed every year. All of the computer equipment and office supplies used within the department are also managed by Sandy. She has been employed at SDSU for the past 25 years, the past 12 of them with the VBS department. A native of Brookings, she has held several positions with First Bank and Trust, as well as the SDSU Property and Records Management Department before coming to the department.

Francis

(Continued from page 2)

with the Gamma Sigma Delta Outstanding Research Award, given by the SDSU College of Agriculture and Biological Sciences. That preceded his F.O. Butler Outstanding Researcher of the Year award given at SDSU in 1998. In 2006, he received the Griffith Faculty Research Award at SDSU.

More recently, he has served as the Director of one of South Dakota's 2010 Centers, the South Dakota Center for Infectious Disease Research and Vaccinology. He is the principal organizer of the International Rushmore Conferences on Enteric Diseases that have been held in Rapid City and in Chicago.

In Dr. Francis' case, retirement will not exactly mean an open schedule. He will continue to keep busy within the department with a number of funded research projects while they are still active. In addition, he serves as a principal in Brookings Biomedical, Inc., a company involved in contract research work, and will continue to provide consultative services for animal and human health companies on research projects involving ETEC, among others.



Dr. Daniel Scholl, (Right), Associate Dean and Director of the South Dakota Agricultural Experiment Station, presents Dr. David Francis with a gift commemorating his retirement. (Photo: Russell Lokken)

Pre-Veterinary Club Sparks SDSU One Health Coalition; Hosts One Health Commission CEO

The "One Health" concept came to fruition on the SDSU campus this spring with an unprecedented partnership between the SDSU Pre-Veterinary Club and the Pre-Professional Sciences Club hosting the CEO of the One Health Commission.

Dr. Roger Mahr (pictured below), representing the One Health Commission based at Iowa State University in Ames, spoke to a gathering of pre-veterinary, pre-medical, and other pre-professional students as well as area veterinarians and faculty members at a session held on March 28, 2012 on the SDSU campus.

The One Health Commission One Health is the collaborative effort of multiple health science professions, together with their related disciplines and institutions – working locally, nationally, and globally – to attain optimal health for people, domestic animals, wildlife, plants, and our environment.



Scope of One Health

- Convergence of human, animal, and plant health and the health of the environment
- Human-animal bond
- Professional education and training
- Research, both basic and translational
- Ensuring a safe food and water supply that is high quality, available and affordable
- Agricultural production and land use
- Natural resources and conservation
- Disease surveillance, prevention and response, both infectious and chronic diseases
- Commonality of diseases among people and animals, such as cancer, obesity, and diabetes
- Clinical medicine demand for interrelationship between the health professions
- Environmental agent detection and response
- Disaster preparedness and response
- Public policy and regulation
- Global trade and commerce
- Communications and outreach

Potential Outcomes from the One Health Approach

- More interdisciplinary programs in education, training, research, and established policy
- More information sharing related to disease detection and diagnosis as well as education and research
- More prevention of diseases, both infectious and chronic diseases
- New therapies and approaches to treatment for unmet needs

Pieces and Parts

Faculty Members Learn of Admission Changes at Iowa State University Regional Veterinary Education Conference

Drs. David Knudsen and Russ Daly, SDSU Veterinary and Biomedical Sciences teaching faculty members, attended the annual Regional Veterinary Education Conference at Iowa State University in Ames, held June 11 and 12 at the College of Veterinary Medicine.

Attendees at the conference represented colleges and universities that have significant numbers of preveterinary students who apply to Iowa State University. Speakers and breakout sessions covered changes to the veterinary admissions evaluation process, the interview process, outcomes assessment of the admissions process, and financial literacy for veterinary students, among other topics.

Several changes to the ISU admissions process were highlighted during the conference. A significant change to the way grade point averages will be used in the evaluation process will begin with the 2012 applicant pool. Students will be evaluated equally on GPA within the required science courses and on the last 45 credits taken prior to application—not on overall GPA. In addition, a previously-used "rigor score" that considered honors courses, repeats, degrees obtained, etc. will be replaced with a simpler measure of course load (credits taken per semester).

During their visit, Knudsen and Daly were able to meet with several former SDSU students now enrolled at the Iowa State College of Veterinary Medicine. The information gained during the conference will help inform the ongoing efforts of pre-veterinary advising at SDSU.

South Dakota Honors Veterinary and Biomedical Sciences Department Employees

At a ceremony held May 21, 2012, at SDSU, the following faculty and staff members were recognized for reaching service milestones with their employment in the Veterinary and Biomedical Sciences Department, SDSU, and the State of South Dakota.

Dean Barry Dunn, SDSU College of Agriculture and Biological Sciences, presented commemorative service pins to:

25 Years of Service:

Evonne Freyberg, Secretary – Clerical Staff Sandy Gustafson, Senior Claims Clerk – Accounting

15 Years of Service:

Julie Nelson, Microbiologist – Molecular Diagnostics

10 Years of Service:

Seema Das, Senior Microbiologist, Assistant Quality Manager – Bacteriology David Knudsen, Professor

Rajesh Parmar, Laboratory Quality Manager Frank Qin, Senior Microbiologist –

Histopathology

Craig Welbon, Microbiologist - Serology



Veterinary and Biomedical Sciences staff members honored with service pins from SDSU, along with presenters. (L-R): Barry Dunn, Dean, SDSU College of Agriculture and Biological Sciences; Evonne Freyberg; Seema Das; Sandy Gustafson; Julie Nelson; Rajesh Parmar; David Zeman, Department Head, Veterinary and Biomedical Sciences Department. Not pictured: David Knudsen, Frank Qin, Craig Welbon.

ADRDL Case Presentations at SDVMA Annual Meeting

ADRDL faculty members will present a variety of diagnostic cases at the SDVMA Annual Meeting at the Ramkota Hotel in Rapid City. The case presentation session is scheduled for 3:00 PM, Friday, August 17, in the Legion I room of the Ramkota.

- BVDV Persistent Infection Dynamics Dr. Chris Chase
- Baby Pig Mesocolonic Edema Dr. Dave Knudsen
- Transport Tetany in Beef Cows Dr. Dale Miskimins (with Dr. Jeff Ehrenfried, Pierre)
- Herpes Virus in Wild Gold Fish in South Dakota Dr. Regg Neiger
- Johne's Disease Diagnostics Dr. Jane Christopher-Hennings

Veterinarians can get registration details at http://www.sdvetmed.org/.

SDSU ADRDL Offers No-Charge Swine Influenza Virus Testing as Part of USDA Anonymous Surveillance Testing Program

Jane Christopher-Hennings, Russ Daly, SDSU

The SDSU ADRDL is offering PCR testing for Swine Influenza Virus at no cost to the producer or veterinarian. This testing program is made available through the USDA's Influenza Surveillance program. Test results are provided on an anonymous basis to the USDA program.

The surveillance program will provide results for 10 samples from an individual case. Eligible samples include lung, nasal swabs, and oral fluid samples. First off, 10 samples are tested for the Influenza A matrix via PCR. This step simply identifies whether the sample is positive or negative for influenza A.

In the next step, 2 of the matrixpositive samples from the submission are tested to subtype the virus (e.g. H1N1, H3N2, H1N2, etc.) and subjected to virus isolation. If virus isolation is positive, then the isolate is sequenced at the ADRDL and a hemagglutinin (HA), neuraminidase (NA) and matrix (M) nucleotide sequencing text file is made available to you. The isolate will also be sent anonymously to NVSL for full virus sequencing. This sequence will be stored in "GenBank", a repository for genetic information. This sequence information will be used on an aggregate basis to observe changes in swine influenza viruses over time that may be helpful for research in influenza control and vaccine design.

Test results are reported to the submitting veterinarian in the same manner as other sample submissions. However, when it comes to reporting information to the USDA surveillance program or to NVSL, no herd identification information is attached except for the state of origin. No link between the cases will be made, assuring anonymity for the submitting veterinarian and producer. Veterinarians who do not wish to participate in this

program may indicate this preference by contacting the ADRDL.

In just a few weeks of testing (June 4-29), 358 samples had been tested through the program at SDSU alone. Of these, 87 samples (24%) were matrix positive for influenza. Keep in mind these are submissions from herds undergoing routine surveillance as well as herds with active

respiratory outbreaks, so making inferences about prevalence rates in the general swine population is sketchy at best. Of 49 samples that were subtyped, 26 (53%) were H3N2, 13 (27%) H1N1, and 10 (20%) were H1N2.

For more information, visit one of the links below, or call the ADRDL at 605-688-5171.

Information about USDA Anonymous SIV Surveillance:

- Veterinarian Guide to SIV surveillance: http://www.aasv.org/public/FluSurveillanceEducationOutreachFinal.pdf
- Producer Guide to SIV surveillance: http://www.aphis.usda.gov/animal-health/animal-dis-spec/swine/downloads/siv-producer-brochure.pdf
- Comprehensive Guide to SIV surveillance: http://www.aphis.usda.gov/animal health/animal dis spec/swine/siv surv manual.shtml

Continuing Education Events

August 16-18, 2012

South Dakota Veterinary Medical Association Annual Meeting Ramkota Inn, Rapid City, SD

Large and small animal sessions: Financial management for food and mixed animal practices; equine metabolic disease; small and large animal toxicology; companion animal vaccination programs; feline medicine; heifer and beef cow development; SDSU case reports, much more. 605-688-6649 or www.sdvetmed.org

August 2-4, 2012 — Academy of Veterinary Consultants Summer Meeting Embassy Suites, Kansas City, MO http://www.avc-beef.org/

August 12-14, 2012 — North Dakota Veterinary Medical Association Annual Mtg International Inn, Minot, ND http://www.ndvma.com

August 22-27, 2012 — Central Veterinary Conference Kansas City Convention and Entertainment Centers, Kansas City, MO http://www.thecvc.com

September 13-14, 2011 — Iowa Veterinary Medical Association Annual Meeting Scheman CE Center, Ames, IA http://www.iowavma.org/

September 20-22, 2012 — American Assoc. of Bovine Practitioners Annual Mtg, Palais des congrès de Montréal, Montreal, PQ, Canada http://www.aabp.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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