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Animal Health MATTERS

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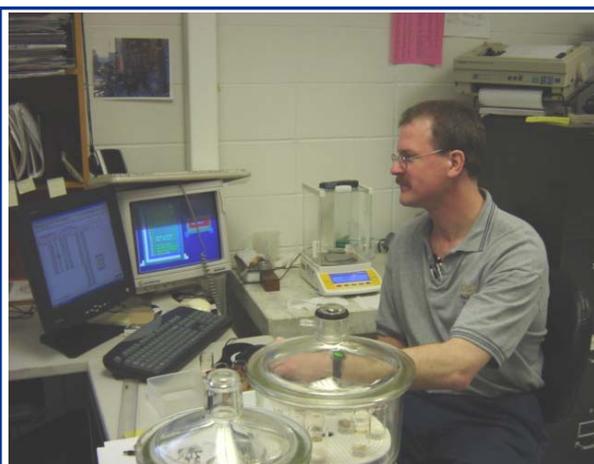
Olson Agricultural Analytical Services Laboratory Adapts to South Dakota Needs

Perhaps no service laboratory at South Dakota State University better demonstrates adapting to the changing needs of the state than the Olson Agricultural Analytical Services Laboratory (OAASL) – a major entity within the SDSU Veterinary and Biomedical Sciences Department.

From its beginnings as “Station Biochemistry” led by Dr. Oscar Olson, the OAASL has grown in scope and expanded their offerings regularly, responding to the needs of their stakeholders. The unit’s original mission was to provide analytical services for university scientists and stakeholders in agriculture.

This included testing to support the South Dakota Meat Inspection Program and providing toxicology services for the SDSU veterinary diagnostic laboratory (ADRDL). In 1984, the group began responsibilities as the State Chemical Laboratory for the department of agriculture. These functions include regulatory testing of pesticide formulations and residues, animal feed, feed-grade medications, and fertilizer. With support from the South Dakota Department of Agriculture, forage quality (NIR) testing was added in 1986. In 2004, the lab absorbed the functions of the SDSU Water Quality Laboratory. Recent additions to the Olson lab’s testing lineup include a multi-analyte method for 24 elements on liver biopsies, and biomass analysis.

In addition, the OAASL is continually developing and validating new analytical methods, especially “official” methods through AOACI (Association of Official Analytical Chemists International). The



Bryan Gildemeister analyzes fiber content results at the Olson Agricultural Analytical Services Lab.

laboratory is also active in the Food Emergency Response Network (FERN) and the NIRS Forage and Feed Testing Consortium. The OAASL is certified by USDA, the National Forage Testing Association, the South Dakota Department of Environment and Natural Resources, and the Minnesota Department of Agriculture. Many proficiency testing programs are a part of the OAASL’s work: a complete list and other information can be found at their website at <http://www.sdstate.edu/vs/obl>.

Today’s OAASL consists of 1) the General Analytical Services Laboratory, analyzing feed, forage, fertilizer, soil, animal tissue, meat, and water; and 2) the Pesticide Laboratory, analyzing pesticide formulations and pesticide residue found in water, foliage, and soil. Both labs consist of dedicated scientists and support staff who have become “go-to” groups for clients across the United States, providing high-quality, unbiased analytical and

technical services. The OAASL reports out over 100,000 results on over 25,000 samples every year.

The faculty and staff that comprise the OAASL **Analytical Services Laboratory** are:

Laboratory Manager: Nancy Thiex, MS began working in “Station Biochemistry” in 1976 doing toxicological analysis, and analysis for Kjeldahl nitrogen and specific elements. In 1979 she began managing the Analytical Services Laboratory, which she still manages to this date. Nancy has masters degrees in both physical science and chemistry from SDSU.

Senior Chemists: Lawrence

Novotny, BS has the longest tenure of anyone working at the OAASL, starting his work there in 1970. Over the years, Novotny has been responsible for nitrate and prussic acid analysis—critical to cattle producers during drought conditions—as well as amino acid analysis. He is the lab quality assurance officer, and a board member and past president of the Midwest section of AOACI. **Terri Van Erem, BS** has 27 years’ experience with the OAASL. Terri is responsible for mineral analyses of a wide variety of samples, including feed, fertilizer, animal tissue, water, and manure. She has a BS degree and additional graduate coursework in chemistry from SDSU. **Regina Wixon, PhD** has worked in laboratory settings for the past 20 years, including stints with Zeneca Pharmaceuticals and the USD Medical School. Regina has BS and MS degrees in Biology from USD, and a

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Director's Message-- Service and Grants

David H. Zeman, DVM, PhD, DACVP

This issue of *Animal Health Matters* nicely describes another **service** the department provides for animal owners and the livestock industry, the services of the Olson Agricultural



Analytical Services Laboratory (OAASL). This service laboratory has been a component of the SD Agricultural Experiment Station for over a century, and became a component of the Veterinary and Biomedical Sciences Department in 2005. They have always provided the ADRDL excellent testing services regarding ani-

mal poison investigations. However, their broad mission serves not only animal owners, but also crop producers, crop scientists, animal scientists, the ethanol industry and government regulatory officials. The OAASL is managed by Professors Matthees and Thiex, and employs 13 career service chemists and staff, and numerous student workers.

I am also pleased to announce two major recent **grants** to the Department. The ADRDL has been a member of the USDA/FDA Food Emergency Response Network (FERN) for the past five years. We received funding again in the most recent round of competition for the next five year cycle. Funding for the 2010 FERN cooperative agreement is \$233,000. The principal investigators for the FERN project are Senior Microbiologist Laura

Ruesch and me.

The second announcement is that the Department of Defense ONR has funded a contract with our Department to study diagnostic laboratory security issues. The two year study is funded at approximately \$1.5 million and the principal investigators are ADRDL pathologist Dr. Tanya Graham and me.

Lastly, I want to add my congratulations and express publicly how proud the entire Department is of Dr. Russ Daly for being voted by the SD Veterinary Medical Association, as South Dakota Veterinarian of the Year. See inside for details of this award.

I hope you enjoy this issue of *Animal Health Matters* and as always, thank you for your collaboration, business, and friendship. ■

Veterinarian Named 2010 SDSU Distinguished Young Alumnus

SDSU Alumni Association

Stacy M. Holzbauer, DVM, MPH, DACVPM, a career epidemiology field officer for the Centers for Disease Control, and a 2000 Animal Science graduate from South Dakota State University, has been named one of seven Distinguished Alumni for 2010 by the SDSU Alumni Association.

In her current position, and her previous position as an Epidemic Intelligence Officer, both with the Minnesota Department of Health, Holzbauer has distinguished herself in the area of foodborne disease outbreaks. Dr. Kirk Smith, Supervisor, Foodborne, Vectorborne, and Zoonotic Diseases Unit within the Acute Disease Investigation and Control Section of the Minnesota Department of Health, says Holzbauer has conducted numerous high profile public health investigations.

In 2006, Holzbauer investigated an outbreak of mushroom intoxications in an extended Hmong family in which a 9-

year-old child died. "Not only did Stacy characterize the outbreak, she coordinated a multi-media educational campaign to educate the large Hmong community" about the dangers of eating wild mushrooms, Smith said.

Also in 2006, she investigated an outbreak of *E. coli* infections associated with shredded iceberg lettuce at a Mexican fast-food restaurant chain. She was able to trace the lettuce back to three California farms and discovered contamination in a farm's irrigation system, which had become contaminated from two dairy farms' manure lagoons.

In 2007, she investigated *E. coli* infections associated with retail ground beef that resulted in the recall of 117,500

pounds of ground beef.

In 2009, she was one of two recipients of the Centers for Disease Control award for excellence in veterinary public health.



**Stacy Holzbauer, DVM
2010 SDSU Distinguished
Young Alumnus**

That was earned from her work as lead investigator during a multi-state outbreak of unexplained neurologic illness associated with pig slaughterhouse workers who used compressed air to extract brains from swine carcasses. No new cases have been identified since this process was stopped, Smith said.

Holzbauer obtained her DVM degree from Iowa State University in 2002, and completed a Masters of Public Health degree from

the University of Iowa in 2004. She is a native of Wagner, SD, and currently lives in St. Paul with her husband John. ■

Diagnostic Implications Following Use of a New IBR-PI3-BRSV Intranasal Vaccine

American Association of Veterinary Laboratory Diagnosticians; Drs. Tanya Graham, Russ Daly, Christopher Chase, Jane Christopher-Hennings, Eric Nelson, and Pam Leslie-Steen, SDSU ADRDL

With the release of a new intranasal vaccine labeled for cattle, the vaccine company has communicated some potential impacts on diagnostic laboratory test interpretation following use of this vaccine. The vaccine consists of a temperature sensitive modified live IBR (bovine herpesvirus I), modified live BRSV, and temperature sensitive modified live PI3 viruses.

- **BRSV Fluorescent Antibody (FA) tests:** There has been no information communicated by the company on the duration of positive test results for fluorescent antibody (FA) tests in cattle vaccinated with the vaccine. The SDSU ADRDL believes the virus would not likely be detected by FA in tissue or lung homogenates from calves vaccinated with an intranasal BRSV vaccine.
- **ELISA:** No information is available on duration of positive test results from Antigen Capture ELISA (ACE). It is anticipated that some vaccinated cattle will show positive on ACE up

to a few days post-vaccination. The effect of vaccine induced antibodies on blockage of BRSV detection by normal antigen retrieval methods is also unknown.

- **Immunohistochemistry:** No information is available on duration of positive test results from immunohistochemistry (IHC) in cattle vaccinated with the vaccine. It is anticipated by the company that some cattle will show positive on IHC, but the duration, intensity or staining pattern of IHC has not been determined. The effect of vaccine-induced antibodies on blockage of BRSV detection by normal antigen retrieval methods is also unknown.
- **BRSV Serology (Serum Neutralization):** Calves vaccinated with the intranasal 3 way vaccine did not develop high serum neutralizing (SN) antibody titers to BRSV. According to the company, titers were higher than controls, but not as high as typical SN titers seen with injectable

MLV BRSV vaccines.¹ Despite this, challenge models showed adequate protection from the vaccine.

- **PCR:** BRSV was detected in calves for up to 20 days post-vaccination when administered by the intranasal route. Most of the calves were PCR negative by day 10 post-vaccination. Published nucleotide sequences from the G coding region of a vaccine virus was capable of differentiating vaccine virus from natural infecting virus.² Currently, the SDSU ADRDL is not performing PCR tests for BRSV.

Please contact the SDSU ADRDL (605-688-5171) if you have any questions.

1. Data on file, Study Report No. 3131R-60-08-557, Pfizer Inc.
2. Detection by real-time RT-PCR of a bovine respiratory syncytial virus vaccine in calves vaccinated intranasally. Timsit E, Le Dréan E, Maingourd C, Belloc C, Guattéo R, Bareille N, Seegers H, Douart A, Sellal E, Assié S. *Vet Rec.* 2009 Aug 22;165(8):230-3.

Extension Vet receives SDVMA Veterinarian of the Year Award

Dr. Russ Daly, Extension Veterinarian for the SD Cooperative Extension Service and Associate Professor with the SDSU Department of Veterinary and Biomedical Sciences, was honored as Veterinarian of the Year by the South Dakota Veterinary Medical Association at their annual meeting on August 9, 2010. Daly has served the SDVMA as chairman of the Continuing Education committee, coordinating speakers and topics for veterinary continuing education, as well as serving as a member of the SDVMA Executive Board. At SDSU, he serves as an educational resource for veterinarians, extension educators, livestock producers and pet owners regarding animal health issues. Daly teaches two veterinary science classes at SDSU and advises pre-veterinary students, performs veterinary

field investigations, and collaborates on veterinary research projects. He serves as a co-chair for the South Dakota Cooperative Extension Service Animal Care and Well-Being team and writes a biweekly animal health column for the Farm Forum newspaper. He is President-Elect of the American Association of Extension Veterinarians, and recently became a Diplomate of the American College of Veterinary Preventive Medicine.

A native of the Columbia, SD area, Dr. Daly graduated from Groton High School and South Dakota State University. He earned his DVM in

1990 from Iowa State University where he served as the president of the Student Chapter of the American Veterinary Medical Association.

Dr. Daly was active as an associate veterinarian and then partner in private practice from 1990 to 2005 at the Montrose/Dell Rapids Veterinary Clinic. In May, 2005, he took his current position as Extension Veterinarian at South Dakota State University in Brookings.

Russ and his wife Angie currently live in Brookings SD with their two children, Joey, 10, and Libby, 8. ■



Russ Daly, DVM

Olson Agricultural Analytical Services Laboratory

(Continued from page 1)

Ph.D. in Nutrition and Food Sciences from SDSU. Her current responsibilities include analysis for animal drugs, vitamins and other similar components.

Chemists: **Nancy Anderson, BS** holds degrees in biology/chemistry and education from Augustana College and has 24 years' experience at SDSU. Nancy is responsible for all selenium, mercury, and chromium analysis on feeds, water, biological materials, and soils. Her past experience includes irrigation soils analysis and selenium and vitamin E research. **Michelle Berkland, BS** has worked at the OAASL for the past four years and has a BS degree in agronomy with a crop production specialization. She is responsible for running ELISA tests for mycotoxins and other substances, along with cyanide, nitrates, vitamin A, amino acids, moisture and ash, and available phosphate analyses. Her farm experience enables her to recognize a wide variety of crop, forage, and feed ingredients. **Bryan Gildemeister, BS** has a degree in animal science with a science concentration from Colorado State University, and has completed additional graduate coursework in food microbiology and meat science. He has managed laboratories in meat processing plants as well as waste water treatment plants. Bryan's role at the Olson lab began in 1996 with water analysis for livestock suitability and now has evolved into responsibility for fat and fiber analysis of feedstuffs, along with potassium and other analyses. Like many others at the OAASL, Bryan enjoys the mix of research, extension, and service laboratory responsibilities. **Harold Manson, BS** has 26 years of experience with the OAASL, with responsibilities for nitrogen, protein, salt, and sugars analyses. He has BS degrees in geology from UND and Medical Technology (chemistry minor) from SDSU. **Shirley Mittan, MS** has 39 years' experience in water analysis. She has been with the Water Quality Laboratory since 1970, moving with the lab to the OAASL in 2004. Her BS and MS degrees are in nutrition, with a minor

in chemistry.

Laboratory Technician: You Wang, MS's role at OAASL for the past three and one-half years has been to assist chemists with mineral analysis of samples submitted to the laboratory. Her background is in medical science in China, where she served the human medical community for over 20 years.

Faculty and staff serving the OAASL **Pesticides Laboratory** include:

Laboratory Manager: Duane Matthees, PhD is in his 30th year of supervising the OAASL pesticide laboratory. Duane holds a PhD in chemistry from the University of Maryland, and did postdoctoral work at National Bureau of Standards. He joined the SDSU Chemistry Department in 1980, where he taught and performed research in analytical chemistry. In addition to managing personnel and equipment, he corresponds regularly with clients and performs hands-on analysis in the lab. Over the years, Duane and his laboratory have observed and

adjusted to the trends in development of safer livestock pesticides. Requests for analysis of herbicide residues on crops and ornamentals have become more common than investigations of livestock poisonings.

Senior Chemists: Rose Neal, BS holds a chemistry degree from the University of Minnesota, Morris, along with graduate coursework in animal nutrition at SDSU. She has experience managing soils testing labs at SDSU and in Minnesota, along with lab tech experience in the SDSU chemistry department. Rose's responsibilities at the OAASL include sample analysis within the pesticide lab, training hourly personnel, and generation of analysis results. **Richard Larson, BS** has been responsible for analyses of herbicide, insecticide and rodenticide products and drugs in animal feeds and remedies since 1986. He holds a chemistry degree from SDSU and was a lab technician for the SDSU Chemistry and Biochemistry Department prior to his work



Analytical Services Personnel: Front Row (L-R): Billie Jo Kubat, Nancy Anderson, Nicole Deurmier. Back Row: Benjamin Ruggeberg, Michelle Berkland, Harold Manson, Nancy Thiex, Jessica Olsem, Lawrence Novotny, Terri Van Erem, Zelda McGinnis-Schlobohm, Bryan Gildemeister, You Wang, Christina Fanning, Shirley Mittan, Ritu Hooda, Anne Foster. Not pictured: Regina Wixon.



Pesticide Laboratory Personnel (L-R): Tigh Kistler, Rose Neal, Richard Larson, Ritu Hooda, Duane Matthies, Delores Bothe, Zelda McGinnis-Schlobohm, Joe Small.

at OAASL. Richard has completed graduate work in analytical chemistry and, like others within the laboratory, frequently attends workshops by regulatory and professional organizations within the field.

Several key personnel are shared between the analytical services and pesticide laboratories, including:

Laboratory Technicians: **Christina Fanning, BS** is responsible for sample log-in, supervising sample preparation, and assisting in analyses of moisture, ash, sodium nitrite on meat samples, and NIRS analysis of forages.

She has BS degrees from SDSU in animal science and range science, and a minor in agricultural business. Christina began working with the OAASL in 2005 as a student and has been full-time since February 2009. **Zelda McGinnis-Schlobohm, BS** serves as sample custodian at the OAASL, with primary respon-

sibilities for sample receiving, login, assignment, storage, and disposal, in addition to supervising sample preparation. She has seven years' experience with the laboratory and has a degree in animal science from SDSU.

Secretary: **Delores Bothe** has provided administrative support for the personnel at OAASL for the past 23 years, which follows seven years' work with the SDSU animal science department.

IT Specialist: **Ritu Hooda** coordinates the computer and network structure necessary for the OAASL's work. Animal Health Matters will feature Ritu and the IT work of the entire Veterinary and Biomedical Sciences department in a future issue.

In addition to the full-time faculty and staff who make up the OAASL, there are several student and temporary workers who help make the lab run smoothly as well, including: Nicole Deurmier, Jade Dilocker, Lanian Florke, Anne Foster, Steven Hauger, Amanda Hausladen, Tigh Kistler, Billie Jo Kubat, Trevor Lundberg, Ryan Nimick, Jessica Olsem, Rashmika Parmar, Benjamin Ruggenberg, Emma Schaubman, Amanda Beyer, Christopher Hildebrandt, Joseph Small, and Riley Svatos. ■

What gets tested at the OAASL??

Animal Feeds. Feedstuffs, such as hay, silage, grain, or distillers grains, are analyzed for nutritional content, so nutritionists and livestock producers can best formulate animal diets. Harmful substances such as mycotoxins, pesticides, prussic acid, or excessive nitrates or sulfur can be detected. Drug levels can be quantified, to verify feed label statements.

Manure and Composts. Levels of nutrients such as nitrogen, phosphorus, and potassium can be measured in animal manure so that livestock producers can best manage soil application and meet DENR permit requirements.

Fertilizers and Pesticides. Does the product actually contain the levels of nutrients or active ingredient stated on the label? The OAASL performs regulatory testing of these products.

Animal tissues. To aid the investigation of animal death loss or illness, tissues or blood samples can be analyzed to determine if toxic—or deficient—levels of minerals contributed to the animals' condition.

Soil. Did a patch of soil become contaminated by fertilizer or pesticide spills? Are there excessive levels of harmful heavy metals such as lead or mercury? The OAASL has methods to measure these compounds.

Water. Water from stock dams, wells, or other water sources can be comprehensively evaluated for its fitness for livestock consumption, and for potential contamination by fertilizers or pesticides.

Dairy Products and Meat. Nutrient and mineral content of these foods can be analyzed for product labeling or other purposes.

Damaged plants. Are there herbicide or pesticide residues present on damaged plants? Are there excessive concentrations of these substances in soils? Pesticide and herbicide residues are measured by the scientists within the pesticide lab at OAASL.

Biomass Materials. Methods recently implemented at the OAASL can measure the composition of biomass products, helping decision-makers best determine the usefulness of these products in using them as sources of renewable energy.

Paint and De-icers. What is the lead content of a sample of paint? Are there excessive levels of heavy metals present in the de-icers used on our roadways in the winter? These questions can be answered through analytical methods at the OAASL.

Survey of the Educational Needs of Animal Health Professionals in South Dakota, Summer 2010

Russ Daly and Christopher Chase, SDSU Department of Veterinary & Biomedical Sciences

During 2010, South Dakota veterinarians, veterinary technicians, and allied industry personnel were surveyed regarding their interest in further professional education. Specifically addressed in the survey was potential interest in a professional masters degree program that would serve animal health professionals within the state. Information regarding respondents' general interests in continuing education topics was also gathered. The work was supported by an Academic Scholarly Excellence grant offered through South Dakota State University.

Proposal Abstract: Lifelong learning is a goal of animal health professionals. We propose the development of a program based on SDSU's successful non-thesis Master of Science program for animal health industry research professionals. Our target population would be animal health professionals (veterinarians, veterinary technicians, extension livestock educators, animal control officers and Game, Fish and Park employees). This proposal will involve determining the feasibility of this program through a formalized survey, regional meetings with our targeted groups and the development of a curriculum.

Methods: During the summer of 2010, veterinarians and veterinary technicians were surveyed regarding their interest in a Professional Master of Science degree program. Attendees at the South Dakota Veterinary Medical Reserve Officer Corps annual training session, the South Dakota Veterinary Medical Association (SDVMA) summer meeting, and the SDVMA annual meeting were surveyed. One hundred thirty five (135) surveys were returned. Since there are approximately 300 practicing veterinarians in

South Dakota, it was determined that this was a representative survey.

Results:

1. Interest in a Professional MS program at SDSU. Respondents were asked to rate their interest in participating in a Professional MS program on a scale of 1-5, with 1 being no interest whatsoever, and 5 being extremely high interest. The mean score for this item was 2.30, with a median of 2. Fifty-three (53) respondents (39%) ranked their interest as 3 or higher. Nineteen (19) respondents (14%) ranked their interest as 4 or 5.

a. Length of professional career of respondents. Length of professional career of respondents was correlated with their interest in the MS program. Of those ranking their interest as 3 or higher, mean graduation date from their latest degree was 1993, while those ranking 2 or lower had a mean graduation date of 1982.

b. Delivery method preferred. Of those ranking their interest as 3 or higher, a hybrid program delivery method (online plus face-to-face classroom time; rating = 3.57) or online only delivery (rating = 3.40) was preferred over classroom only (2.27).

c. Reasons for interest in the MS program. Of those ranking their interest as 3 or higher, providing better service to their clients was the top-rated reason for respondents' interest in the program (3.61). Also highly-rated was the possibility that an MS program would better qualify the respondents for positions outside veterinary practice (3.23). Less highly rated were the possibility of charging more for their services (2.20) and preparation for further advanced education (2.44).

d. Obstacles for participating in the MS program. Time factors were the highest-rated obstacles to participation in an MS program. Time away from practice (4.18), managing work schedules (3.98), and time away from family (3.64) were identified as the largest obstacles for those showing interest in the program. Less highly-rated reasons were cost (2.96) and length of time since formal coursework (2.53).

e. Course content. All respondents were asked to indicate their areas of greatest interest in their current professional situations. Of those rating their interest in the professional MS program as 3 or higher, the following areas of emphasis were most frequently identified:

1. Immunology/Vaccinology (27 respondents)
2. Animal Nutrition (26)
3. Business Management (24)
4. Epidemiology/Population Medicine (19)
5. Infectious Disease Pathology (16)

2. Interest in taking additional college coursework. Respondents were also asked to rate their interest in taking college coursework that they may or may not be interested in applying to a degree program. Overall, ratings on this item were higher than for interest in the MS program (2.68 vs. 2.30). Sixty-three (63) respondents rated their interest as 3 or higher (47%), with 32 respondents (24%) rating their interest as 4 or 5.

a. Course content. Of those ranking their interest in additional college coursework as 3 or higher, the following course subjects were most frequently identified:

1. Animal Nutrition (30 respondents)

2. Immunology/Vaccinology (24)
3. Business Management (22)
4. Epidemiology/Population Medicine (18)
5. Infectious Disease Pathology (16)

b. Other considerations. While not explicitly asked of the respondents regarding additional coursework, it is expected that the same delivery methods, reasons, and obstacles rated for the MS program would apply as well to additional coursework.

Conclusions:

1. Results indicated there potentially being sufficient interest in an MS program for animal health professionals to merit its creation. Fourteen percent (14%) of respondents indicated a high interest in the program. If these survey results could be extrapolated to

the approximately 300 veterinarians in the state, this means the potential for 42 participants, which would be sufficient to establish a program. Caution should be taken in extrapolation of these numbers to the population of veterinarians and technicians as a whole, as the survey was given to veterinarians attending continuing education meetings. Therefore, it may be that this population is more interested in lifelong learning in general than the total population of veterinarians. Nevertheless, the survey empirically identified 19 individuals with high interest in the program.

2. Program requirements would need to fit participants' time constraints. Online delivery of courses appears to be required for this population of professionals to participate. Some existing courses at SDSU may need to be modified for online delivery.

3. Subject content needs of the professionals, whether they are interested in an MS program or simply desiring more

coursework, fairly closely match what is already being offered at SDSU (e.g. animal nutrition, immunology/vaccinology, epidemiology).

Next steps:

1. Develop a proposal for a model curriculum for a Professional MS program. Subsequently survey a similar population to further identify the level of interest once the details are more substantiated.

2. Better market existing online SDSU course offerings to this group of professionals. This could be done through departmental newsletters, departmental websites, announcements at CE meetings, etc. There appears to be a strong interest within this group to participate in certain college courses, many of which are currently offered online through SDSU (See "Internet Course Offerings from SDSU for Spring 2011," page 8). ■

Certificate Program in Veterinary Preventive Medicine Offered

The College of Veterinary Medicine at Iowa State University will offer a new education program for working professionals - a Graduate Certificate in Veterinary Preventive Medicine.

The 1st cohort will begin classes in January 2011. Applications for admission are welcome now and participants must be enrolled by January 3, 2011.

The purpose of the Graduate Certificate in Veterinary Preventive Medicine is to address the continued and advanced needs of animal health professionals. The certificate enables professionals to gain recognition for a skill set that includes epidemiology, risk assessment, production medicine and animal welfare.

A graduate certificate may be used to increase knowledge in a new or emerging area of interest to the candidate. As such, it may be used to formally gain recognition for retraining to meet the needs of today's food production systems.

Also, a graduate certificate provides

an introduction to graduate education that enables a candidate to decide if further degree programs are "right for them". Completing a certificate by distance, allows animal health professionals to try returning to graduate school without leaving a current position or committing to the larger number of credits needed for a Masters (30+ credits) or Doctoral (72+ credits) level program.

For further information please feel

free to visit the website at <http://vetmed.iastate.edu/vdpam/graduate-programs/certificate>

If you have additional questions about this opportunity, please contact either Annette O'Connor (Email: aconnor@iastate.edu; Phone: 515-294-5012 515-294-5012) or Lori Layman (Email: pvm-grad-programs@iastate.edu; Phone: 515-294-1761). ■



Pieces and Parts

Internet Course Offerings from SDSU for Spring 2011

A host of courses offered over the internet are available through SDSU's Distance Education for the Spring 2011 semester. A complete list, along with details on each course can be found on the SDSU Distance Education website at <http://www.sdstate.edu/cee/distance/offerings/index.cfm>.

Courses numbered 500 and above are graduate-level courses. Just a few examples of course offerings for Spring 2011 include:

MICR-492, Immunology

MICR-592, Virology

ACCT-210, Principles of Accounting I

BADM-310, Business Finance

HLTH-443, Public Health Science

HLTH-445, Epidemiology

HSC-731, Biostatistics II

STAT-281, Intro to Statistics

STAT-541, Statistical Methods II

STAT-785, Statistical Inference II



VBS Department Faculty Members Update Chinese Delegation on Swine Diseases

The SDSU Department of Veterinary and Biomedical Sciences was among the stops on a two-week-long visit by fourteen members of the Chinese swine industry sponsored by the U. S. Grains Council. While on campus on September 14, 2010, the group, which consisted of academicians, farm owners, managers, and association executives, was updated on the current state of diagnostic and clinical swine medicine. Dr. Jane Christopher-Hennings updated the group on "Diagnosis and Control of PRRSV," while Dr. Ying Fang gave an update on "PRRS Diagnostics: New Tools and Challenges." Dr. Russ Daly, Extension Veterinarian, spoke on baby pig and nursery digestive diseases, with an emphasis on clinical signs and treatment.

While in the U.S., the group also visited several local swine operations and attended the Lemn Swine Conference in St. Paul, Minnesota.

SDSU Extension Veterinarian Achieves Board Certification in Veterinary Preventive Medicine

Russ Daly, Extension Veterinarian and Associate Professor in the Department of Veterinary and Biomedical Sciences at SDSU, recently sat for and passed the certification examination for the American College of Veterinary Preventive Medicine. The examination took place over two days and was administered at the Ohio State University College of Veterinary Medicine this past June.

The ACVPM's purpose is to advance the science and art of the specialty of veterinary preventive medicine and to establish standards of experience and training for qualifying veterinarians as specialists in preventive veterinary medicine. The specialty includes veterinarians working in a variety of areas within public and private practice: disease surveillance, regulatory work, designing and conducting herd health programs, extension programs, health education, epidemiology, disease prevention research, disease outbreak investigations, and occupational health.

ACVPM certification involves demonstration of experience and expertise in work in the areas listed above, followed by a comprehensive examination (including an assessment of communication skills) within each of five different areas: Environmental Health and Toxicology; Infectious and Parasitic Diseases; Public Health Administration and Education; Epidemiology and Biostatistics; and Food Safety.

Certification information for the ACVPM can be found at the College's website, www.acvpm.org. Additionally, interested veterinarians can contact Dr. Daly for more information. The application deadline for the 2011 examination is November 15, 2010.

2010—2011 SDSU Veterinary and Biomedical Science Scholarship Awardees:

J. Michael Robbie Scholarship in Pre-Veterinary Medicine: Lacy Bobb, Victoria Pecak, Andrea Wagner

Dr. J. B. Taylor Memorial Scholarship: Dana Rausch

Freeman J. Lewis Memorial Scholarship: Katie Wollenburg, Megan DeVos, Caitlin Siefkes, Elizabeth Hassing

Dr. Harry Halverson Memorial Scholarship: Meagan Abraham

Richard & Carol Dierks Scholarship in Pre-Veterinary Medicine: Ben Lamp

Harbarth Scholarship in Veterinary Science: Andrew Rogen

Incoming Freshmen with Pre-Vet Majors at SDSU, Fall 2010

The following is a list of the incoming freshmen who have declared a pre-vet major for Fall semester 2010 at SDSU:

South Dakota

Aberdeen – Jamie Jones
 Aberdeen – Olivia Braun
 Alcester – Carmen Borns
 Bath – Caitlin Siefkes
 Belle Fourche – Nathan Wilen
 Brandon – Christian Ode
 Brandon – Ethan Sawyer
 Brandon – Victoria Hurney
 Brandon – Lauren Clements
 Brookings – Alex Cermak
 Brookings – Presley Door
 Brookings – Michelle Jensen
 Brookings – Elias Kjellens
 Brookings – Jensine Prohaska
 Dell Rapids – Katrina Mohror
 Egan – Austin Ellefson
 Fairfax – Sheryl Koenig
 Fairview – Katie Boote
 Fort Thompson – Hannah Ellsworth
 Garretson – Maggan Froseth

Harrisburg – Ashley Sarges
 Hartford – Robin Hoffman
 Hartford – Ciara Schmitz
 Hayti – Ryan Hymans
 Huron – Rhiannon Barr
 Madison – Alaina Kringen
 Mitchell – Grace Lloyd
 Montrose – Ashley Wagner
 Pierre – Shelby Abels
 Sherman – Tricia Neels
 Sioux Falls – Erica Houska
 Sioux Falls – Zachary Williams
 Sioux Falls – Megan De Vos
 Sioux Falls – Kelsey Lee
 Volin – Elise Berheim
 Winfred – Ryan McIntyre

Iowa

Emmetsburg – Christopher Olson
 Paullina – Madison Lange

Idaho

Idaho Falls – Elizabeth Hassing

Minnesota

Afton – Zachary Frichol

Foley – Bethany Halverson
 Iona – Amy Paulzine
 Lake Benton – Danielle Busselman
 Montevideo – Richard Danielson
 Perham – Kari Cavanagh
 Pipestone – Megan Viland
 Pipestone – Tishawanna Carpenter
 Racine – Krista Uptagrafft
 Russell – Renae Johnson
 Sherburn – Nicholas Dorschner
 Steen – Amanda Dissing
 Tracy – Michelle Lenertz
 Trimont – Alyssa Umbreit
 Vesta – Amanda Schmidt
 Wells – Dianna Tatge

North Dakota

Ellendale – Allyson Lechner

Nebraska

Columbus – Laura Blair
 Hallam – Justin Taylor

Ohio

Toledo – Heather Stewart ■

SDSU Students Accepted to Veterinary Schools for Fall 2010

Iowa State University:

Nicole Davis
 Jordan Graham
 Kelsey Peterson
 Shawn Flottmeyer
 Cole Tucker

University of Minnesota:

Anna Petrowiak
 Sarah Westholm
 Abigail Wirt
 Scott VanderPoel

Five additional South Dakota residents, completing pre-veterinary work at other colleges, have entered vet school as well, four at Iowa State, and one at Kansas State. ■

Calendar of Events

January 6, 2011 — SDSU Diagnostic Lab Update, SDSU, Brookings

November 11-12 – Dairy Cattle Reproduction Council – Regional Meeting, Crowne Plaza Riverfront, St. Paul, MN www.dccouncil.org

December 2-4 – Academy of Veterinary Consultants Winter Meeting, Renaissance Denver Hotel, Denver, CO <http://www.avc-beef.org>

December 6-10 – American Association of Equine Practitioners, Baltimore Convention Center, Baltimore, MD www.aep.org

December 3-4 – Wyoming Veterinary Medical Association Winter Meeting, Ramkota Inn, Casper, WY <http://www.wyvma.org/>

January 28-29, 2011 – Montana VMA Winter Meeting, Bozeman, MT www.mtvma.org

February 20-24, 2011 – Western Veterinary Conference, Mandalay Bay Convention Center, Las Vegas, NV www.wvc.org

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SDSU Veterinary and Biomedical Sciences Department
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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 and Story Author: Russ Daly, DVM

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