

COLLEGE OF VETERINARY MEDICINE

2010 – 2011 Annual Report

The College of Veterinary Medicine continues to be one of the leading veterinary medical institutions in the United States, an important contributor to the North Carolina economy, and a force for innovation in One Medicine – One Health to the benefit of animals, humans, and the environment as a whole.

Changes in Service Environment:

Economic recession and budget reductions:

Despite past budget reductions, including a 7.71%, \$2,100,083 cut two years ago, the college ranking by US News and World Report went from fifth to third. Budget reductions have taken a major toll on the numbers of tenure track faculty. Research expenditures declined in the 2010-2011 year, in part due to increased national competition for these awards (the percentage of submitted grant requests that receive funding is declining).

Business Reorganization:

In parallel with planning for business re-organization at the university level, the CVM has been re-organizing business processes and centers. Human Resource functions are already being centralized. Financials and grant management will be centralized over the next 6 months. In addition to business functions, Academic Support is also being centralized within the college. The new academic support unit will assist faculty with course web sites, test construction, retention of examinations for student review, course and instructor evaluations, and other academically focused functions.

Constructions and Renovations:

The completion of the Randall B. Terry Jr. Companion Animal Veterinary Medical Center will positively impact our hospital caseload, increasing revenue and teaching opportunities for students. The Terry Center is fully operational as of June 20, 2011. The Terry Center created 33 new faculty offices, thus creating additional space in the existing building which will be used to provide much needed small classroom space and allowing movement of faculty from off-site locations to move into the main building.

A significant investment was made in the Teaching Animal Unit to address storm water and related erosion issues on campus.

DVM Enrollment Increase:

Renovation of the North Theater will be completed summer of 2011 in anticipation of DVM enrollment expansion for the class of 2016. Final approval and funding of a 25% increase in DVM student enrollment has not yet been received.

Initiatives: Major initiatives and/or changes to programs or activities

A new naming hierarchy of “Veterinary Health Complex” was developed that includes the Randall B. Terry Jr. Companion Animal Veterinary Medical Center, Veterinary Health and Wellness Center, Equine and Farm Animal Veterinary Center, Satellite and Field Veterinary Services, and Clinical Support and Diagnostic Veterinary Medical Services. Planning is complete for the future Veterinary Health and Wellness Center and Equine Farm Animal Veterinary Center expansions. The major ongoing research initiative is building

a solid clinical trials program within the Center for Comparative Medicine and Translational Research. A search is underway for a biostatistician to support faculty work in the CCMTR. Some technological advances include transferring all courses to a new learning management system (Moodle) as well as introducing new technology to the classroom such as clickers and MediaSite lecture capture. Lecture capture allows students to review materials at their own pace and provides learning resources for students unable to attend lectures due to illness or other reasons. Of the skills video library, 186 of 193 presentations were watched with total views equaling 12,585 and each video was watched an average of 67.66 times. Of the lecture captures, 1169 of 1382 presentations were watched with total views equaling 11836 and each lecture watched an average of 10.12 times. Course objectives and course evaluation questions were added to the Clinical Rotation Evaluation and Scheduling System (CRESS). The college created a CVM YouTube page and has added more than 30 videos. Also, a twitter page was initiated developing 1,921 followers, the highest number of any college of veterinary medicine.

Diversity: Initiatives and Programs

The CVM currently has the second highest African American student DVM enrollment in the United States (second to Tuskegee, a HBCU). Dr. Allen Cannedy, director of diversity and Johanna Donovan, assistant director of diversity made 37 trips to colleges, K-12 schools, and career fairs to recruit candidates underrepresented in veterinary medicine as well as co-sponsoring the second diversity symposium at the 2010 North Carolina Veterinary Conference. Drs. Barbara Sherry, Jorge Piedrahita and Gregg Dean participated in the Initiative for Maximizing Student Diversity (IMSD) program at NCSU, funded by the NIH. The IMSD program is designed to increase the number of students from underrepresented minority groups who receive Ph.D.'s in the biomedical and behavioral sciences, and ultimately pursue research careers in these fields. Dr. Ken Adler received an NIH supplement for under-represented minority student training. Dr. Chris McGahan participated in the Building Future faculty efforts, hosting Dr. Ruben Dagda.

Instructional Program Advances, including curriculum development and program review

Academic Affairs has formed the course coordinator group to review curriculum. This year there was a full implementation of Syllabuilder, a tool that will focus faculty on producing learning outcomes and allow mapping of the curriculum. Curriculum development involved 1st and 2nd year course coordinators and faculty in formulating an infectious diseases educational program. Dr. Barrett Slenning will coordinate the Food Animal Disease Diagnostics course (VMP 971) with CVM faculty, food animal production and diagnostic veterinarians. This course will be required for the food animal focus area students in the class of 2012. A new course was approved for 4th year veterinary students in food animal pharmacology. This course is designed for food animal focus students and will enable them to make appropriate treatment decisions in food animal practice. The Veterinary Health Complex supported clinical training of 80 professional students, 20 contract professional students, and 82 house officers. A new selective course "Introduction to research at the CVM" has been developed to promote student interest in research careers.

Faculty from nutrition, orthopedics, pain management, neurology and animal welfare developed the NCSU "WOLF" program: Wellness, Obesity, Lifestyle and Fitness to manage patient rehabilitation, education of pet owners and veterinary students.

New graduate courses were developed in Cancer Biology (CBS 771), and Methods in Biomedical Research (CBS 570).

Several seminars focused on education were delivered at the CVM: “Updating and restructuring the DVM Curriculum” by Dr. India Lane, University of Tennessee, “Active Learning for Larger Classes “ and “ Curriculum and Graduate Attributes” by Dr. Rosanne Taylor, University of Sydney.

Research: Volume of activity and achievements of significance

The CVM received \$1,920,436 in NIH research support through funds available as part of the American Recovery and Reinvestment Act of 2009. Extramural research awards totaled \$9,612,180. Allocations from USDA Animal Health formula funds to the CVM totaled \$80,215. The Office of Associate Dean of Research provided \$125,405 in state appropriated start-up funds for seven faculty members and \$64,542 for repair of departmental equipment as well as \$358,387 in graduate student stipends which were used to fully or partially support 33 graduate students. The CVM also made a significant investment in research equipment this year totaling \$338,653.

Dept.	Original works in peer-reviewed journals	Case Reports in peer-reviewed journals	Review articles in peer-reviewed journals	Books	Book Chapters	Abstracts from scientific & professional veterinary conferences	Electronic Media	Invited Research presentations, professional audience	Continuing Education presentations	Bulletins Booklets, etc.	Copy-rights	Patents
DOCS	126	17	17	5	49	127	7	323	27	3	1	0
MBS	86	3	8	3	21	36	2	61	2	0	0	0
PHP	109	19	6	3	17	107	5	70	65	7	0	1
Total	321	39	31	11	87	270	14	454	94	10	1	1

Extension: Initiatives and public service activities

College Relations:

The public dedication of the Terry Center generated extensive awareness of the facility through nine separate dedication videos, tours of the Terry Center for WRAL, NBC-17, News & Observer, Triangle Business Journal, Centennial Campus, NC State campus videographer and a general public open house with close to 1,000 attendees. In addition, a series was initiated with NBC-17 titled, “My Carolina Today” featuring eight CVM segments.

Continuing Education:

Of the total 37 events processed through the Continuing Education and Outreach Office, 32 were continuing education programs. The largest event each year is the North Carolina Veterinary Conference; this year it had 1,346 total registrants, 759 paid veterinarians and 251 paid veterinary technicians. Our international visitors program hosted 27 International Visitors from 16 countries and over 300 domestic visitors.

Students:

The students hosted a World Rabies Day Vaccination Clinic which totaled 25 student volunteer, 200 vaccinations given and \$1,675 raised for the Wake County Animal Shelter. In addition, the students hosted the annual Dog Olympics which attracted 350 attendees, with more than 90 students and faculty participating and a total of \$6,765 raised for 10 rescue groups.

Other:

There are ongoing discussions regarding development of a Safe Haven Program (sheltering for animals of domestic abuse victims) at the CVM in the Health and Wellness Center.

Faculty: Honors, awards and recognition

Dr. Keven Flammer was awarded the T.J. Lafeber Avian Practitioner Award. Dr. Jody Gookin received the American Veterinary Medical Foundation/Winn Feline Foundation Research Award for her contributions to advancing feline research and feline health. Drs. Craig Harms and Suzanne Kennedy-Stoskopf received the North Carolina State University Outstanding Extension Service Award and were inducted into the Academy of Outstanding Faculty Engaged in Extension. Dr. Nancy Monteiro received the Purdue University Distinguished Women Scholars Award. Dr. Natasha Olby was recognized as a “Hero of Medicine” by the American College of Veterinary Internal Medicine. Dr. Derek Foster was chosen as the Student Chapter of the American Association of Bovine Practitioners as the Faculty Member of the year. Dr. Paul Orndorff was Chair, Mid-Atlantic Microbial Pathogenesis meeting, Wintergreen, VA. Dr. Jim Riviere received the Lloyd E Davis Award, American Academy of Veterinary Pharmacology and Therapeutics. Dr. Malcolm Roberts was the recipient of the Frank A. Todd President’s Award from the American College of Veterinary Preventive Medicine. Dr. Geoffrey Smith was selected as the Food Animal Continuing Educator of the Year, Western Veterinary Conference as well as the chair, bovine program, AVMA Annual Forum. Dr. Dennis Wages was appointed Vice-President of the North Carolina Veterinary Medical Association, (NCVMA). Dr. John Barnes received the Kansas State University Alumni Recognition Award in recognition of research on avian pathology and teaching excellence. Dr Jay Levine won regional and national McGrath/Kellogg Community Engagement Awards for the Sturgeon City Program Development with City of Jacksonville. Dr. Lysa Posner, received the Bayer Outstanding Teaching Award and was inducted into the Academy of Outstanding Teachers. Dr. Philip Sannes was the College nominee for the Board of Governors’ Award for Excellence in Teaching. Dr. Barbara Sherry was elected President of the American Society for Virology and was promoted to Section Editor for PLoS Pathogens. Dr. Chris McGahan was elected Treasurer of the International Society for Eye Research. Dr. Troy Ghashghaei was named a Fellow of the American Federation for Aging Research. Dr. David Bristol was selected by the NCVMA as “Veterinarian of the Year”.

Students: Honors, measures of quality and student activities

Honors

The 27th Annual Awards Banquet was held May 5, 2011. Over \$20,000 in cash was awarded to students along with registrations, books, and supplies. David Kleisch (DVM/MBA combined degree program) received the highest student cash award from Simmons and Associates for business interest and aptitude.

Measures of Quality

The educational degrees obtained by the admitted Class of 2015 are: Associates AS – 2; Bachelors BA-7, BS-68, BS and BA 2; Masters MS-4, MOP-2, and PhD-1. Twenty-one graduate students completed Master of Physiology, Master of Science, Masters of Specialized Veterinary Medicine or Doctor of Philosophy degrees. NCSU CVM students ranked third in the nation in successful matches through the national internship/residency match program, Five students from the class of 2011 went directly into pathology residencies and three into laboratory animal residencies. It would be surprising if any other college in the nation had this level of success of their graduating seniors for these highly competitive programs. In addition, 14 students entered large or mixed animal practices or food safety inspection, addressing national shortage areas.

Student Activities:

The SCAVMA auction at the NCVC held in November, 2010, raised over \$17,000 for the chapter to use for student expenses for travel to educational meetings. Also, the 27th Annual Equine Medicine Symposium for horse owners was organized by veterinary students and held on Saturday, February 20th at the CVM.

Fund-Raising: Private fund-raising successes

Kris Alpi worked with NCVMF to receive historical instruments and books from the bequest of Dr. Charles Ward. With Dr. Barbara Sherman's assistance, Kay Redding donated a significant animal welfare collection. We received 16 gifts from faculty, alumni and North Carolina veterinarians from which we added over 100 volumes to the library collections. The Teaching Animal Unit received several significant gifts: Heather Fitzwilliam Foundation Directive of Estate \$700,000, Class of 2011 NCSU-CVM Gift to TAU \$5000, SCAVMA Donations \$5,342, Secured Gifts in Kind: HogSlat – new brooders, Secured Gift in Kind from Prestige Farms: \$4100. An anonymous donor created the Henry Benjamin Distinguished Professorship with a gift of \$168,602. Deborah Resnick donated \$83,808 to support the Fund for Discovery, a summer research program for veterinary students. The Terry Challenge Fund funded another \$234,585 to name opportunities in the new Randall B. Terry, Jr. Companion Animal Veterinary Medical Center. The Terry Foundation provided a total of \$5 million toward the Randall B. Terry, Jr. Companion Animal Medical Center in the 2010-2011 academic year. The total private support to the CVM as of April 30, 2011 was \$7,436,482.18.

Administration: Achievements and staff changes

Financials:

The Veterinary Health Complex is projected to have 21,720 VTH case accessions with total revenue of \$17.71M, practice plan revenue of \$3.60M and revenue over immediate and non-capital operating expenses of \$1.2M (revenue numbers relatively unchanged from fiscal year 2010). Special appropriations from the state legislature were used to continue the \$200,000 Veterinary Medicine Clinical Teaching and Research Fund. This fund assists clients who would have difficulty affording care needed by their animals, as well as providing funds for cases of particular educational value. The Central Procedure Lab (CPL) generated \$552,642 in revenue. The Continuing Education office organized and implemented 28 professional continuing programs with 2,050 registrants, including 5

Veterinary Technician Forums for CVM employees, 8 Veterinary Forums for area practitioners, and 14 one to two day courses developed specifically for NC Veterinarians.

Staff Changes:

A new audio/video coordinator was hired in Computing Resources at an opportune time for assisting with outfitting the Terry Center's audio/video technological advancements. CJ Arnett was recruited as the Director of Laboratory Animal Resources Operations.

Faculty appointments, promotions and departures:

New tenure track assistant professor appointments included Dr. Megan Jacob in Clinical Microbiology, and Dr. Kieri Jermyn in Small Animal Surgery (transferred from non-tenure track assistant professor position). Michael Wood was appointed as a Clinical Assistant Professor (NTT) of small animal internal medicine.

Promotions effective July 1, 2010 included: Dr. Adam Birkenheuer, promoted to Associate Professor with Tenure, and Dr. Kyle Mathews, promoted to Professor

Reappointments at the Clinical Assistant Professor level effective July 2010 included Drs. Peter Early, –Karyn Harrell, William Krug, and Brenda Stevens. Dr. Wayne Tompkins retired as Professor of Immunology (and former Director of the interdepartmental Immunology Graduate Program), December 2010. A search is underway to refill this critical position. Dr. Gregg Dean, Head of the Center for Comparative Medicine and Translational Research was recruited to the Head the Department of Microbiology, Immunology and Pathology at Colorado State University, College of Veterinary Medicine and will depart 7/31/2011. Dr. Jorge Piedrahita has been appointed as the Interim Head of the CCMTR. The DoCS department had 5 faculty departures: Dr. Melanie Sorrell (Laboratory Animal Medicine), Dr. Sally Bissett (Small Animal Internal Medicine), Dr. Richard Mansmann (retired, Equine Medicine), Dr. Guillaume Chinoit (Small Animal Surgery) and Dr. Edward Noga (Aquatic Animal Medicine).

Recommendations and concerns for the future

Many years of planning for, construction of, and finally the opening of the Randall B. Terry Center have resulted in a successful opening of that center. Now it is time to refocus efforts on other parts of the college's mission. Reliance on hospital income and the expansion of the clinical specialty faculty has focused more faculty time on the clinical management of the complex caseload than on DVM instructional needs. A similar level of planning related to the repurposing of vacated hospital space for the Health and Wellness Center is needed. This center is meant to be more instructionally focused, emphasizing primary care clinical skills and DVM instruction.

There has been great success with the grant mentoring program in the MBS department as all research intensive junior faculty in that department now have NIH grants. The successful program should be grown to address mentoring of all CVM research intensive faculty. In addition, a re-assessment of the distribution of college resources to better support research infrastructure, the availability of seed grants, and enhancement of laboratory animal facilities is needed. The ability to continue to grow extramural research funding continues to be challenging with the loss of faculty and staff positions.

The PHP department would like to strengthen its Infectious Diseases and Biosecurity, Food Supply Veterinary Medicine and Public Health and Food Safety programs at the CVM.

There have been numerous changes within the college this year with many more planned for the upcoming fiscal year. Renovations are needed to create the Health and Wellness Center, repair old faculty offices, and prepare for DVM student enrollment expansion. While there were gifts and legislative appropriations to build the new hospital, there has been no funding outside the university for renovation of the older hospital facility. This will continue to present a challenge to the college administration. There is concern about the impact of enrolling larger classes of DVM students on the quality of education. Currently the CVM at NCSU enjoys the second best student:faculty ratio in the US.

We are heading into the fourth year with no raises for faculty and staff. We are already losing some key faculty and staff to competitors. The economy will improve in the private sector before the public sector, so opportunities in industry (ex: Pharmaceutical companies), corporate veterinary medicine and private practices will improve before the state budget improves and addresses stagnant salaries. There is a danger we will lose large numbers of faculty at that time. We need to establish more endowed professorships with ongoing support in order to be able to retain our most talented faculty members.

Strategic Goals Alignment:

Enhance the success of our students through educational innovation:

Eight web cameras were added in the teaching animal unit as one mechanism for enhancing the education of our students. The cameras feed to a dedicated web site so that when important husbandry or disease events occur, (example: a calving) students can be notified by email and immediately observe the event from any location. We are developing the Veterinary Internet Content Exchange, an online system of sharing courses between veterinary colleges. We have taken a lead role in establishing the Veterinary Educator Exchange, an on-line and face-to-face system for training veterinary educators. We have also developed case-based on-line learning using Moodle and Quia. PHP faculty created educational innovation through strategies such as instituting case based clinical problem solving laboratories for gastrointestinal and pulmonary pathogens in a first year course, creating a new senior year block focused on food animal surgery using clinical material and cadavers obtained from a local processing plant, working on a distance education course on poultry diseases, and creating a new senior year course in Food Animal Pharmacology as a requirement for food animal focus area students.

Cameras have been installed in the Terry Center surgery rooms that feed to an intranet, again allowing students to view procedures without being on-site. The Veterinary Health Complex remains the largest “teaching lab” in the college.

Enhance scholarship and research by investing in faculty infrastructure:

We retained two key faculty members engaged in the clinical trials program associated with the CCMTR, and made significant investments in research equipment and infrastructure,

Enhance interdisciplinary scholarship to address the grand challenges of society:

Faculty members Suzanne Kennedy-Stoskopf and Ed Breitschwerdt were key individuals involved with the establishment of the One Health Intellectual Exchange Group and the development of an associated multi-institutional course (NCSU, UNC, Duke). Dr. Breitschwerdt and his Vector Borne Disease Laboratory collaborated with human medicine partners to educate DVMs and MDs of the dangers of tick disease and how veterinary and human medical worlds can learn from each other. Research collaborations between faculty at the CVM and faculty at UNC Medical School and Duke School of Medicine continue to grow including work with Duke University to investigate MRSA trans-infection between humans and animals. DoCS faculty continue to provide leadership regarding clinical trials for the CCMTR. The CVM partners with the Departments of Forestry and Environmental Resources (CNR) and Biology (CALs) to offer an intercollegiate graduate degree in Fisheries, Wildlife, and Conservation Biology focused on scientifically-based strategies to conserve and manage fisheries and wildlife. Faculty contributions to this inter-disciplinary program include expertise on disease prevalence and pathogenesis, and development of novel strategies to evaluate health of aquatic and terrestrial populations. The Southeast Climate Science Center is a recent partnership between NCSU and the US Geological Survey within the Department of the Interior. CVM faculty are part of the inter-disciplinary team representing multiple colleges and expertise that will lead collaborations with other universities, federal and state agencies, and NGO's to provide rigorously tested, science-based strategies to evaluate the impact of climate change on natural resources in the southeastern United States. PHP faculty collaborated with institutions such as an RTP startup company and the University of Wisconsin – Madison to investigate high pressure processing to pasteurize bovine colostrums.

Enhance organizational excellence by creating a culture of constant improvement:

The Department of Clinical Sciences recently completed a retreat focused on how to create world class clinical sections. The college's Teaching Animal Unit is inspected by AALAC, IACUC, USDA, and in the 11 years has only had 1 minor citation. This is an exceptional record for a unit that manages as many animals of many different species for educational programs.

Enhance local and global engagement through focused strategic partnerships:

CVM Faculty, Post-Docs and staff provided key expertise and manpower for response to the BP oil spill. Dr. Harms, Dr. Lewbart, Dr. Massey and Shane Christian were involved in the management of oiled birds and sea turtles.

This will be the last year of the partnership between the CVM and the Wake County Animal Shelter; plans for the future will involve increase engagement with other shelters and animal rescue groups to help provide primary care experiences for DVM students.

Several faculty in our Population Health and Pathobiology department enhanced engagement locally and globally through, training approximately 50 extension agents on importance of weaning management and on farm cattle handling, assisting producers and practitioners in NC with ruminant health and reproduction issues, and educating veterinarians at the state, national and international levels in bovine medicine.