

## **Objectives**

### **State the major goals and objectives of the college, and comment on how they are being met.**

The overarching goals of the College are to provide excellent training in veterinary medicine, to expand knowledge in fields related to veterinary medicine, and to transfer that knowledge in a useful and meaningful manner to end users. In order to accomplish these goals, the College must provide state-of-the-art facilities, a healthy financial environment, a world-class faculty, and rigorous, innovative training programs.

**Facilities:** The College has a number of construction projects planned to enhance student learning, upgrade the teaching hospital and increase research space. These projects include the Randall B. Terry Jr. Companion Animal Veterinary Medical Center (a new 105,000 sq ft specialty referral center), expansion and renovation of the current large animal hospital, conversion of the existing small animal teaching hospital into instructional space and a small animal out-patient clinic, and building of a second research building. A flex building will be constructed shortly under the Centennial Campus Authority. Securing public and private funding to complete these projects is a major objective of the College.

**Finances:** The College must continue to expand financial resources in order to fund growth. The College currently has a capital campaign goal of \$100 million. As of December 2006, \$72 million had been raised. Additional sources of revenue that we aim to optimize include hospital income, grants and contracts. All College external relations, including development functions, have recently been re-organized to better address the need to expand sources of funding other than state appropriations.

**Development of New Knowledge:** The strength of the faculty is a key element in the development of new knowledge. Smart motivated individuals must be supported in their efforts to be creative, entrepreneurial and rigorous in their research. A College objective is to further develop the administrative support and organizational structure to facilitate ongoing research efforts. Because the support needed is often highly individualized, such as the effort to bring the National Bio- and Agri-Defense Facility to North Carolina (<http://www.ncc-nbaf.org/>), specific objectives for each project are developed.

**Transfer of Knowledge:** The goal of the College is to train veterinary students to the highest level possible, so they may be successful in diverse veterinary careers. With the explosion of knowledge and a generational change in the preferred learning modalities, the College is beginning an examination of the entire curriculum in order to consolidate the information transferred to students, reduce reliance on traditional didactic teaching and increase the use of advanced learning technology. The objective is to develop highly effective methods to transfer knowledge and skills to our students.

### **Describe methods and/or tools used to measure outcomes of the total program of instruction, research, and service.**

**Instruction:** The success of the veterinary students is measured using overall GPA, individual course grades, and attrition rate. Students in academic difficulty are monitored by the Faculty Committee on Academic Performance and Student Conduct. Clinical Competency is tracked through the use of a skill sign-off book and evaluations of student performance in the 4<sup>th</sup> year rotations. The success of the program of instruction is evaluated using the NAVLE pass rate, one and five year alumni surveys and employer surveys. The acceptance rate of students into internships and residencies is tracked. Oversight of graduate students is performed by departmental graduate programs or by the Comparative Biomedical Sciences (CBS) Graduate Studies Committee. The intern and residency programs are monitored by the Faculty Committee on House Officer Programs (FCHOP) and the individual residency programs; attrition rate, board examination pass rate and job acceptance post-residency are monitored.

The success of faculty teaching is monitored through student and peer teaching evaluations, intra and extramural teaching and speaking awards, and invitations to present continuing education programs. The scholarly output of the faculty is monitored through tracking of peer-reviewed publications, abstracts, case reports, review articles, lay articles, book chapters, books, and electronic media creations. The curriculum is monitored by the Assistant Dean of Academic Affairs and the Faculty Committee on Curriculum and Course Evaluation to assure that all areas of competency are included. Each course is reviewed once every three years by the committee, using student evaluations.

**Research:** The success of the faculty in research is monitored using grant productivity, numbers of abstracts and presentations at scientific meetings and number of publications in peer-reviewed journals. Other measures include number of graduate students mentored, editorship of scholarly journals, receipt of national and international research awards, induction into scholarly academies and societies, and service on national grant review study sections and review boards.

**Clinical Service:** The Hospital Board, Associate Dean of Veterinary Medical Services, and the Department Heads monitor clinical service. Clinical service is tracked for each service unit, not for individual clinicians. Hospital revenue, caseload, number of new patients seen, number of complaints, outcome of client and referring veterinarian satisfaction surveys, and compliance with hospital policy are tracked. Each individual clinician is evaluated by the students on each clinical rotation and by a 360° evaluation at the time of faculty review. The North Carolina Veterinary Medical Association polls veterinarians each year to determine the NCSU VTH Clinician of the Year Award.

**List the major strengths and weaknesses of the college.**

### *Strengths*

**Location:** The College is fortunate to be part of a university that is located in an environment that has low unemployment, a strong economy and a well-developed academic and industrial biomedical infrastructure. North Carolina State University is a nationally recognized leader in science and technology transfer (ranked 6th in technology strength of patents, 7th among national research universities in industry-funded research, and 12th among national research universities in non-federally funded research). NC State is particularly adept at developing public-private partnerships, with over 100 companies and agencies housed within the university's research park, Centennial Campus. The recently approved Biomedical Centennial Campus will be centered at the CVM.

**Faculty:** The College has a motivated and energetic faculty that is committed to building a world-class institution. Their excellence is evidenced by the national and international recognition received, as well as by their enthusiasm for teaching. The senior clinical faculty members are routinely present within the clinic, interacting directly with students. The research faculty involved 28% of the class of 2006 in their research.

**Wealth of Teaching Material:** The College has a large, busy teaching hospital with high caseload that provides exposure to large numbers of dogs, cats and horses. The Community-Campus Partnership program, based at the Wake County Shelter, provides primary care experience. The Teaching Animal Unit provides exposure to farm animals from year one, allowing students from urban and suburban backgrounds to become familiar with livestock handling and production. North Carolina ranks # 2 in poultry and hog production in the US, thus allowing students exposure to large food animal production units. In addition to access to private ruminant operations, the university maintains large ruminant herds, which are utilized for teaching. Exposure to non-domestic species and exotic pets is provided through partnerships with the North Carolina Museum of Natural Sciences, the Sea Turtle Rescue and Rehabilitation Hospital, the North Carolina Aquariums, the Vancouver Aquarium, the North Carolina Zoo, and other organizations.

**Strong Training Programs:** The College attracts highly qualified veterinary students (entry GPA average = 3.57) and admits 30-31% of in-state applicants and 4-5 % of out-of-state applicants. The curriculum is 75% core material and 25% elective material. The selective program is a unique method of providing elective material in a concentrated two-week period each semester. There are nine focus areas, providing courses and clinical rotations that develop in-depth expertise. Each student chooses a focus area and an individual advisor, who mentors the student. A high percentage of the graduates apply for internships (23-56%) and the acceptance rates are high (62-73%). Additional degree programs include the DVM-MBA, DVM-PhD, Masters of Veterinary Public Health and Comparative Biomedical Sciences graduate programs. The internship and residency programs at the College are highly sought after, often attracting over 100 applicants per position. These programs have trained a number of clinicians who have gone on to become faculty members. In particular, the Clinician Scientist program (a joint residency-PhD program) is designed to train top-level academicians.

**Strong Research Programs:** The College is fortunate to have a number of internationally known scientists with excellent research programs. Extramural research support ranged from \$ 9.9-14.8 million annually over the last three years. The Center for Chemical Toxicology Research and Pharmacokinetics and the newly created Center

for Comparative Medicine and Translational Research provide leadership and coordination for a number of research efforts.

### ***Weaknesses***

The weaknesses are partly as a result of the fast pace of growth at the College. Lack of space and a facility that requires renovation to meet current needs were cited by the faculty as concerns. NC State CVM is fortunate to have had relatively stable state support over the last 5 years, but much of the growth of the College has been funded by hospital revenue, extramural research support and donations. Additional concerns include a lack of diversity within the veterinary student population and a reliance on a heavily didactic curriculum. The specialty referral caseload at the teaching hospital allows students exposure to fascinating cases, but can be a bit overwhelming for beginning clinicians. Difficulty in faculty recruitment and retention due to a strong private sector job market has not affected NC State as much as some veterinary colleges, but individual specialties have experienced long periods before successfully filling vacant faculty positions.

### **Recommendations.**

Based on our College's goals and our strengths and weaknesses, we should:

- Look closely at expanding our enrollment in the professional curriculum. Had our enrollments kept pace with the NC population, we would now have well over 100 students in each year of the professional curriculum. This will require new teaching facilities.
- Devise more effective ways to attract a diverse applicant pool. This is a national need.
- Review the entire curriculum in order to create innovative ways to deliver essential, core material and impart the skills necessary to build on this foundation.
- Secure the remaining funding needed to break ground on the Randall B. Terry Jr. Companion Animal Veterinary Medical Center early in 2008.
- Closely examine business practices, communication practices, computerized medical record and image database capability, staffing levels and support service efficiency in the Terry Center in order to function as an effective specialty referral center while remaining a top-notch teaching hospital.
- Develop plans for short-term improvement and expansion of our current equine hospital facility, in order to enhance faculty, staff, student and client satisfaction, while continuing to plan for a new equine veterinary center.
- Assess the relative roles of the in-house, field service and partnership opportunities with existing practices and livestock industries in order to ensure adequate access to food animal case material.
- Look critically at mechanisms and investments to provide access to primary care case material. Existing programs, such as the shelter medicine program and the wellness program, may need to be expanded. Off-site externships and selectives should continue to be encouraged. Other models, including off-site satellite partnerships and practice ownership should be explored.
- Improve working conditions, support infrastructure and hospital efficiency for the benefit of our faculty and staff. Our academic clinical environment must remain positive and rewarding if we are to continue to attract and retain outstanding faculty.
- Develop strategies to enhance our ability to garner significant extramural research awards. The recent development of the Center for Comparative Medicine and Translational Research will assist with this effort. Emphasis needs to be given to facilitating grant development, enhancing interdisciplinary collaborations, enhancing laboratory animal infrastructure, and facility and equipment maintenance.
- Build strong public-private research partnerships in order to develop the Centennial Biomedical Campus. As a part of that effort, we should assess moving to GLP certification for the Central Procedures Lab.

Continually improve the quality of our graduate programs, and in particular, graduate student support offerings, rather than develop a new cadre of programs. Existing programs such as the DVM-PhD, clinician-scientist and summer student research experience need to be emphasized to fulfill our role in producing the next generation of academic leaders.