

## **EXECUTIVE SUMMARY**

### **Program Rankings**

#### **Doctor of Veterinary Medicine:**

Satisfactory

#### **Doctor of Philosophy in Veterinary Medical Sciences:**

Satisfactory

#### **Masters Degree in Veterinary Medical Sciences:**

**PBS and CBS** - Satisfactory

**VCS** - Satisfactory – needs improvement/not satisfactory<sup>1</sup>

### **Context**

The historical missions of programs in veterinary medicine have been to educate DVM students and provide advanced training in the various sub-specialties of clinical veterinary medicine. As schools of veterinary medicine have evolved, their research mission has grown beyond basic research to include clinical and translational research – the use of veterinary models for human health. This movement has resulted in an increase in the numbers of students seeking PhD degrees at veterinary schools. To be competitive nationally, schools of veterinary medicine must train high quality DVM students giving them a superior clinical experience, provide an environment where basic, clinical, and translational research can flourish, and where appropriate merge the research and clinical experiences.

Since their last Program review in 1999, the LSU School of Veterinary Medicine (SVM) has made tremendous progress in re-invigorating its basic research program. This change was accomplished by aggressively committing positions and resources into NIH-fundable areas of research. Decisions involving new hires, equipment, and laboratory renovation were focused on developing strengths within individual units. In Comparative Biomedical Sciences (CBS), oncology and cardiology have been the foci of these efforts; in Pathobiological Sciences (PBS), it has been infectious disease.

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<sup>1</sup> Our instructions indicated that we were to use one of these designations, but there was disagreement among members of the review panel on whether any of the available terms was appropriate. Two panel members felt the MS degree in VCS should be considered “unnecessary” and that “not satisfactory” inappropriately denigrated the program. Our views are more fully explained under the section labeled Graduate Programs, item 2.

The approach has been successful; the growth in the basic research capacity of SVM is clearly evident. For example, CBS has grown from two NIH grants nearly seven years ago to nine presently funded NIH grants. CBS has nearly tripled their graduate student population and have increased the number of post-doctoral fellows. The School is to be congratulated for progress it has made since the last review.

## **Findings and Recommendations**

### **Professional Curriculum**

1. DVM and residency programs are well received by the students, residents, faculty, and alumni. Satisfaction with the program is high.
2. LSU SVM continues to have a strong DVM applicant pool. (See also point # 6.)
3. Instructional resources that are pervasive on the main campus did not seem to translate well into the classes at SVM, this was true for the DVM students as well as the PhD students. There is a need for better coordination of DVM curriculum, greater coordination of presentation of course materials, and utilization of Moodle or other online resources to facilitate instruction. The Curriculum Committee should conduct regular reviews of the curriculum with the Course Coordinators.
4. Exposure to live animals in the first two years of the curriculum appears to be limited to elective special topics courses. The SVM should develop a core Clinical Skills course or courses in the first two years of the curriculum to ensure live animal contact and the development of clinical skills prior to entry into Phase II of the curriculum.
5. Fourth year (clinical) students learn in many ways. "Show and tell" (or apprentice) type teaching is one paradigm that is important for veterinary students, but is not the only, or even necessarily the most important, form of teaching/learning. The senior year curriculum should also include problem-solving, topic teaching, and critical reading. It was not evident from the review how much of this type of teaching was taking place in the clinical curriculum.
6. DVM admissions are a passive process in which applications are received and candidates are selected on the basis of aptitude, educational record, and interview. The quality of the students has continually increased during the past 10 years, but competition for outstanding students is likely to increase over time. The School should consider a more active recruiting process for the nation's best students.
7. It is a concern that class attendance has been very poor for the some of the DVM classes. It was the opinion of the faculty interviewed that the decline in attendance

was associated with poor test and classroom performance. It is suggested the faculty consider implementing a rigorous attendance policy.

8. A committee of VCS faculty should consider having a workshop for first or second year students that exposes students to all their career options. Many alumni indicated that they were not familiar with all potential career choices until late in their education.

### **Graduate Programs**

1. The PhD and MS degrees in Veterinary Medical Sciences offered in CBS and PBS are administered in a satisfactory manner. CBS and PBS recruit graduate students into the PhD program, reserving MS degrees for special circumstances. This distribution is consistent with the basic research orientation of these departments.
2. VCS employs a different philosophy with respect to its PhD and MS programs that is in part dictated by its clinical mission. The VCS graduate students are DVMs with a few exceptions. There are a small number of these students that are enrolled in a PhD program, indicating their strong commitment to research. However, the majority of the graduate students in VCS enroll in the MS program. These students are DVM residents that intend to achieve advanced qualification or board certification in a specialty field such as dermatology, ophthalmology, or radiology in addition to the MS degree. Typically, the residency for these individuals is two to three years; at the end of which they must pass an examination that demonstrates proficiency in their area of specialization to receive certification. The Boards that certify these specializations do not require that the resident obtain a MS degree, and many of the DVM residents at LSU SVM do not participate in the MS program.

Our examination of publications involving VCS MS students from the past three years found inconsistent levels of scholarship, and our interviews with these students indicated that departmental support in terms of providing research infrastructure was highly variable, leaving the panel with the impression that the academic and research needs of these students were not a priority in VCS.

The review panel is forced to ask whether the MS degree in Veterinary Medical Sciences – as it is administered to DVM residents in VCS – is necessary. We suggest that VCS review the utility of this program to its graduates and consider eliminating the degree. VCS would do better to put its efforts into developing a strong DVM PhD program, patterned on the successful programs in Pathology and Lab Animal Medicine in PBS, and focus on developing a few areas of strength.

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3. The connection to, or regulatory oversight of, the University Graduate School was not obvious. The Graduate Advisors should have regular meetings with the Advisory Council, the Dean of the College, and the Dean of the Graduate School.
4. There is insufficient integration of (a) graduate students between graduate programs (CBS, PBS, VCS) and of (b) graduate students with the professional (DVM) students.
5. The graduate student pool (especially those earmarked for basic research) is inadequate, in terms of quantity. Inspection of the Chart on page 190 of the Self Study document lists 52 PhD graduate students on support (for year 2007/2008) of which 31 (~50%) are supported by the SVM. Given future plans, this number is not large enough to support continued expansion. In addition, the stipends allocated to these students were viewed as non-competitive. This was evident in the fact that the SVM has little luck in securing graduate students domestically. There has been some efforts in this respect (NIH T32, EDA, BoR GF), but the numbers added via these mechanisms is modest (only 14). Veterinary Schools must be cognizant of the fact that they are in increasing competition with Medical Schools and Biology Graduate Groups for some of the same students.
6. The recruiting process of graduate students was viewed as passive and inadequate given the growth of the research programs. This was reflected in the lack of diversity of their graduate student pool. The SVM needs to become more proactive in their graduate student recruiting efforts and stop relying solely on web-based recruitment efforts. It would also be advisable to expand undergraduate research programs that can serve as viable venues for recruitment into research programs. The School needs to take advantage of some of the resources on Main Campus in this regard, such as implementation and use of the Office of Strategic Initiatives. This office can also assist the SVM in increasing diversity in their graduate student ranks.
7. Assessment and examinations of graduate student (PhD) progress was viewed as inadequate. The graduate students take their general examination and final examination and this seems to be the only mechanism in place to gauge progress. It would be advisable to implement some type(s) of examination schedule to monitor the proficiency of graduate student earlier in their tenure. For example, the use of qualifying exams or placement exams. In addition, research advisors need to more effectively use the "U" grade in research to weed out graduate students who are not meeting expectations.

8. It is of some concern that Ph.D. students do not have a publication requirement. It is suggested that the graduate advisor and leaders consider whether a publication requirement would be suitable for PBS and CBS graduate programs.

### **General**

1. The programs suffer from the lack of an up to date strategic plan. All units need to have strategic plans, including strategic plans for research, teaching, and service.
2. The School must make a major commitment to a formal development or advancement model to identify new partnerships, public and private, that will support the mission of the School.
3. Interdisciplinary research is paramount in this current research environment and it does not seem that the SVM is prolific in this type of endeavor. While there were some examples given of inter-unit research activities (for example, with Pennington and Tulane), given the increases in their research capacity, the level of interdisciplinary work was viewed as disappointing. For example, discussions with the College of Basic Sciences was suggested as an action item following the last review, but no mention of these type of interactions were provided during the meetings nor in the self study document. This is an area that the School needs to improve.
4. Expectations for P&T need to be more adequately conveyed to the assistant professors. The large array of appointment types in the School make this difficult for aspiring young faculty to fully understand the criteria of achieving P&T. Mentoring of faculty should be more uniform across all areas, ensuring they know what they need for tenure.
5. Mentoring committees have been appointed (and are functioning) in all three departments, but (a) there is considerable variability between departments and (b) the mentoring that is offered is more about P & T review than true mentoring. There is a need to standardize mentoring processes between the three departments and separate P & T review processes from mentoring.
6. The College should more comprehensively engage its post-doctoral fellows in the academic mission, and there should be a formal oversight mechanism of the Post-Doctoral Fellowship program.
7. While the response to the last review was viewed in a positive manner, there were several issues that may still require attention. No information was provided as to newly implemented methods (if any) for improving communication from the Dean's office to affected units in terms of budgetary issues.

8. Space is a major issue. It was noted that successful faculty (those with multiple federal/state grants) cannot increase their capacity to do research due to space limitations. While plans were shared in terms of increasing space for the three programs in SVM, such as reclaiming space from the Hansen's Disease Center and a new addition to house the diagnostic laboratory, it was not clear that a strategic plan was in place to effectively utilize this space. In fact, there seemed to be no cohesive plan in place to handle the allocation of space across the three units comprising SVM. While there is a space committee, it was not clear how space requests were dealt with, especially across the three units of this School.
9. Staff support, given the major expansion of research capacity in SVM, was viewed as inadequate. This situation has been aggravated by the fact that much of the University's "paperwork" is being transitioned to an electronic format that has placed an extra burden on staff in the departments. Extra responsibilities are being delegated to staff and in fact, in many cases staff reduction has been noted. These reductions or non-growth practices in staff will inevitably slow the increasing research activities of SVM.
10. There is also some concern that the new arrangement for service contracts is not highly effective due to delays in getting equipment repaired.

## **FULL REPORT**

### **I. Brief History of the School of Veterinary Medicine**

#### **A. What degree programs and concentrations are offered by the academic unit?**

The School of Veterinary Medicine at Louisiana State University and A & M College offers three degrees

- Doctor of Veterinary Medicine (DVM)
- Master of Veterinary Medical Sciences
- Doctor of Philosophy in Veterinary Medical Sciences

There are no defined areas of concentration within the DVM or Veterinary Medical Sciences graduate program. The School of Veterinary Medicine offers graduate professional instructional programs including clinical internships and residencies within the Department of Veterinary Clinical Sciences and residency programs in pathology and laboratory animal medicine in the Department of Pathobiological Sciences. The Surgery residency program requires enrollment in a Master's degree program, but in all other residency programs a second graduate degree is optional. The home department [Veterinary Clinical Sciences (VCS), Pathobiological Sciences (PBS), and Comparative Biomedical Sciences (CBS)] for PhD and MS Degree graduates is indicated on student dissertations and theses.

#### **B. Is the description of the program in the self-study accurate and complete? Are there aspects of the program's history that are especially important for understanding its current status and possible development?**

The description of the program provided is complete. The current configuration of the School of Veterinary Medicine consists of three academic departments (Comparative Biomedical Sciences, Pathobiological Sciences, and Veterinary Clinical Sciences), the Veterinary Medicine Library, the Veterinary Teaching Hospital, and the Louisiana Animal Disease Diagnostic Laboratory. The three academic departments (VCS, PBS, and CBS) grew out of a School-wide re-organization following the 1999 Program Review. Although they share graduate programs, the three units operate with a great deal of autonomy and this is evident in the manner that they manage their graduate programs. Thus, even though "on paper" the MS and PhD in Veterinary Medical Sciences are identical, there are features that distinguish the graduate programs in each department.

**C. Are the Department, College and University roles, scopes and missions stated clearly?**

The School of Veterinary Medicine at LSU has three distinct missions: 1) to provide superior education in veterinary medicine and related fields, 2) to offer a wide range of superior services to the general public and the veterinary medical community, and 3) to maintain a relevant, high quality research program in basic and applied fields. The graduate programs offered by the School of Veterinary Medicine are in large part defined by the first and third mission statements. The second mission focuses on providing veterinary care services to the public.

**D. Have the faculty and administration responded adequately to earlier findings and recommendations?**

A Program Review Council panel evaluated these degree programs in March 1999. The overall rating of the school's programs was found to be unsatisfactory. A memorandum of agreement was developed and the School was asked to implement a number of significant changes.

- Leadership of the School was changed: the Dean was replaced; an Associate Dean for Administration and an Associate Dean for Research and Advanced Studies were appointed in response to criticism of the administration at the School. Job descriptions were developed for all administrators detailing their duties and responsibilities.
- The School instituted policies to better solicit and distribute information to faculty concerning critical issues affecting the School and its graduate programs. Current protocols include greater communications between the administration and faculty through the Faculty Policy committee, ad hoc committees on events of special interest, and a broadcast email system for fast-breaking release of information on relevant issues.
- The School reviewed and revised all curricula by the end of 2000.
- The School made sizeable investments in improvement of infrastructure and in acquisition of needed equipment to support graduate studies.
- The School has emphasized the importance of individual investigators securing extramural funds from State and Federal sources. Extramural funds in the School have increased dramatically in the past ten years.

## **Accreditation**

There are twenty-eight colleges and schools of veterinary medicine in the United States that are accredited by the American Veterinary Medical Association (AVMA).

The following quote is taken from the School of Veterinary Medicine website (<http://www.vetmed.lsu.edu/history.htm#Accreditation>). It explains why the LSU School of Veterinary Medicine did not receive full accreditation in its most recent evaluation by the AVMA, and explains what is being done to restore full accreditation.

“The AVMA Council on Education (COE) is the national accrediting agency for veterinary medical education in the United States. The AVMA COE assures that minimum standards in veterinary medical education are met by all AVMA-accredited colleges or schools of veterinary medicine, and that students enrolled in those colleges or schools receive an education that will prepare them for entry-level positions in the profession. The LSU program has met all essential requirements for an acceptable college or school as established by the AVMA COE. Full accreditation was granted in 1977 and reaffirmed in 1984, 1991, 1998, and 2005. In 2008, the AVMA COE revised the status to limited accreditation pending the expansion of large animal infectious disease isolation facilities and the development of additional objective criteria to document the excellence of graduates of the school. In April 2008, the Louisiana State Legislature approved funding for a Large Animal Isolation Unit, which is an important step toward reestablishing full accreditation. Also, the School has expanded and improved its outcomes assessment portfolio, and in 2009, the AVMA COE noted the School’s improvements in the area of outcomes assessments and commended the School for obtaining funding for the Large Animal Isolation Unit, though the School remains on limited accreditation until the isolation unit construction is complete. The next evaluation by the AVMA COE will take place in 2012. The limited accreditation status has no impact on the graduation status of LSU SVM students' progress, their status upon graduation, or their ability to become licensed after graduation.”

## **II. Instructional Programs**

### **A. Program Objectives**

#### **1. Have the objectives of the program been fully formulated?**

Objectives for the academic programs at the SVM are well articulated. The primary objective is to provide Louisiana residents with the opportunity to prepare a DVM degree. Secondary objectives provide an environment that fosters improved human and animal health through education and research. These objectives are implemented through

mechanisms developed within the SVM and through cooperative arrangements with other agencies, public and private, in the United States and internationally.

**2. Are the objectives of the program appropriate for the current students and faculty? Will they remain appropriate over the next five to seven years if changes are expected in the current blend of students and faculty?**

SVM has two distinct student populations, i) the students whose primary interest is developing the requisite set of clinical skills needed to become a DVM and a practicing veterinarian, and ii) those students pursuing the MS or PhD for the purpose of conducting basic and/or applied research. The objectives outlined by SVM are appropriate for both groups. LSU SVM appears to be working hard at accommodating both groups, not favoring one group over the other. The 2009 draft strategic plan for LSU SVM ([http://www.vetmed.lsu.edu/strategic\\_plan\\_2009.htm](http://www.vetmed.lsu.edu/strategic_plan_2009.htm)) indicates that this balance will be maintained during the next five to seven years.

**3. Is there an ongoing documented planning process that ensures that the objectives of the program remain consonant with the role, scope, and mission of the college or school and the University?**

Yes, as illustrated by the 2005 strategic plan and the 2009 draft version made available to the review committee during the review.

**4. How does the department's strategic plan contribute to the goals of the Flagship Agenda?**

The 2009 strategic plan for LSU SVM focuses on improving the status of the School among veterinary schools nationally by elevating the quality of clinical and basic research through improvements in faculty development, student recruitment, and infrastructure. This is consistent with the concept of LSU's Flagship agenda, which strives to "increase research and scholarly productivity and the quality and competitiveness of our graduate and undergraduate students."

**5. What is the relationship of the program to other programs and administrative units within the University (e.g., interdisciplinary programs and/or service courses)?**

Administratively, LSU SVM is largely a standalone unit on the Baton Rouge campus. The graduate programs are under supervision of the Office of Academic Affairs through the Graduate School, but the review panel found limited interaction between the Graduate School and SVM. The Dean of the Graduate School did not seem to be aware of problems encountered by students in SVM, indicating a need to improve communication between his office and the SVM.

## **B. Program Structure**

**Are the requirements (courses, thesis) appropriate for a program of high quality? Is the program too narrow or is it sufficiently broad given the current state of the discipline and the objectives of the program?**

### **Professional Curriculum**

There are many good courses in the curriculum and the course content, in general, meets the needs of the professional students. That said the curriculum appears to be one of default instead of design. There are inappropriate redundancies and deficiencies throughout the curriculum and insufficient contact between course coordinators and course instructors (Anatomy being a notable exception) to correct "curricular drift". As can happen at any School of Veterinary Medicine, the LSU curriculum has become an un-connected series of courses instead of a true curriculum in many instances. The Special Topics courses, for example, appear to represent more the interests of the teaching faculty than the needs or interests of the students. Consequently, some students in Year 1 of the curriculum have live animal experiences, while many others do not. In another example of default vs. design, course requirements in the mixed animal track appear over-represented in equine content and under-represented in food/fiber content.

### **Graduate Programs**

There is about two years of coursework in the graduate programs, consistent with similar programs at LSU and around the country. Each department has the flexibility of requiring courses, but there is adequate opportunity to customize coursework for each student. Students interviewed did not express concern over the depth or quality of the material presented, and the review panel found no evidence that the demands of the students in these programs were unmet. The seminar courses appear to be well received by the students.

## **C. Need**

**Has the need for this academic program been sufficiently documented, in terms of similar programs within the state, relationships with other programs at LSU, demand for graduates, and interest from external constituencies?**

The LSU SVM is one of 28 accredited schools of veterinary medicine in the United States; it is the only veterinary school in the state of Louisiana. Through agreement with Arkansas LSU SVM provides a fixed number of positions for students who wish to enter a DVM program. Arkansas does not operate a school of veterinary medicine. In addition to meeting state and regional (Louisiana and Arkansas) needs for veterinary services, there is a documented national shortage of veterinarians that would be further aggravated if LSU

did not sustain its commitment to the School of Veterinary Medicine.

#### **D. Students**

##### **1. Are there admissions standards or policies that differ from university-wide standards/policies? Do admission policies assure a well-qualified, diverse, and representative student group?**

###### **Professional Curriculum**

The DVM Program admission policy is outlined on the School of Veterinary Medicine (SVM)'s website ([www.vetmed.lsu.edu/admissions](http://www.vetmed.lsu.edu/admissions)). Admissions is based on an aggregate score of 100 and incorporates required course GPA (29/100 points), last 45 credit hour GPA (18/100 points), GRE score (18/100 points), folder review (15/100 points), interview score (10/100 points), and admissions committee scoring (10/100 points). The folder (file) review and perhaps the admissions committee scoring is intended to be holistic and include a consideration of diversity. Data from the past four years indicates a large applicant pool (658-799 applicants for 84-86 positions with no clear trends among applicants). Average GPA (3.76 for the Class of 2012) and GRE score (1149 for the Class of 2012) reflect the quality of the applicants. Recommendations for admissions are made by the admissions committee to the Dean, where final authority for admissions resides.

The review committee notes:

- While it is likely there will be increasing competition for the highest quality veterinary applicants, there is little evidence that the SVM is actively participating in such recruitment presently. While diversity is considered important by upper level administrators, the present scoring system for admissions allows limited opportunity for this emphasis to enhance diversity within the veterinary student population and the importance of diversity is not understood by all individuals participating in the admissions process. Veterinarians not part of the LSU faculty participate in the admissions process. Outside veterinarians participating in the review that met with the review committee indicated they were unaware of instructions for considering diversity in the admissions process. Furthermore, it is unclear whether such factors as area of pre-veterinary focus (e.g., biomedical research, public health, or food animal health) are considered an element of diversity in the SVM. The SVM should i) more actively identify and recruit the best students from all resident pools, ii) more clearly define diversity using criteria that are consistent with university guidelines but specifically applicable to the missions of the school, and iii) increase its emphasis on diversity in the admissions process.

### **Graduate Programs**

The three departments differ in their admissions criteria, and the stringency with which they are applied. CBS requires an undergraduate GPA of 3.0 and GRE 1100 minimum; PBS requires an undergraduate GPA 3.0 and GRE 1200, or a stronger GPA of 3.2 to outweigh a weaker GRE of 1000; VCS requires undergraduate GPA of 3.0 and GRE of 1000, however they have discretion to admit applicants who do not meet these criteria if they wish. It was not clear from the self-study document or from the interviews how often and to what degree this discretion is exercised, and it is recommended that a careful eye is kept on the exercising of this discretion to ensure top quality students are admitted into the graduate programs. This concern may be more relevant for the MS program in VCS, which is often paired with students in residency. In general there appear to be strong students in the other programs—for example; the students in PBS have average undergrad GPA's of 3.5 and GRE's of 1223. Of course, as expressed by the faculty, there is still variability in performance amongst the students; getting larger applicant pools through active recruiting and more intensive interviewing may help to ameliorate this issue.

Across departments there seemed to be very little attention paid to diversity and cultural representation. There are no active recruiting programs for minorities, and concern was expressed about the ratio of national versus international applicants and students. Active recruitment for the graduate programs in general should be a top priority in the coming years, and as part of that, recruitment goals should address concerns about diversity and geographical and cultural representativeness.

**2. Is enrollment sufficient to justify continued offering of the program? Is there capacity to enroll more students? If there are any anticipated changes in program size, are they justified? Is the attrition record acceptable?**

### **Professional Curriculum**

The DVM program has accepted 84-86 students annually over the past 4 years, yielding a total enrollment of approximately 340 students in the program. Plans for increasing class size were not made apparent to the review committee. The DVM program of the SVM is one of 28 such programs nationally and the only program within the state.

Records indicate a variable rate of attrition (1.2 – 7.1% per class) with 10 students taking a leave of absence in the 2007-2008 academic year. In this year, four students left for medical reasons and four were dismissed for poor grades. Stress was noted as a potential cause of attrition by the administration.

The DVM program of the School is clearly essential to animal health, biomedical advancement, and public health within the state and region. High rates of attrition can be a

cause for concern. To augment services at the University Health Center, the SVM has employed a licensed clinical social worker to address what is believed to be the main cause of attrition within the veterinary curriculum and many of the departing students eventually return to the program.

The SVM further should explore factors that contribute to attrition in its DVM students and determine if additional measures could be taken in admissions, counseling, or mentoring to limit the attrition rate.

### **Graduate Programs**

Enrollment is sufficient in all three departments to justify continuation. Continued growth is desirable to enhance all programs. CBS has shown a strong increase in enrollment in the last few years (going from 8 to 23 graduate students), and felt they could take up to ten more students. PBS also has a healthy enrollment with 25 students, and felt they could take five more. VCS recently changed its admissions criteria to allow non-DVM admission to their graduate program—the effect this has on number and quality of students will have to be tracked over the next several years. Growth in the graduate programs is currently limited by grant funding; this will need to continue to increase for the programs to continue to grow. The applicant pool also needs to be increased in general—active recruiting is one key to success.

Attrition rate is fairly low in both the master's (0 to 5%) and Ph.D. programs (4-8%).

### **3. Are there sufficient and appropriate academic and career counseling resources?**

#### **Professional Curriculum**

The Dean's office provides personal counseling directly and through a licensed social worker. Career counseling is provided within the curriculum in the form of a course in the first year of phase I (VMED 5100 and 5102). Career opportunities are also conveyed to students through mailboxes and emails. There are summer research opportunities for DVM students in a program funded by Merck-Merial-NIH. The SVM is developing a combined DVM/Master's of Public health (MPH) program. Up to 30% of the SVM's DVM graduates annually seek advanced training (mostly in internships but also in residencies and PhD programs). While the Subcommittee on Specialization provides student-student mentoring to assist with the transition for first year students, there is no formal faculty-student mentoring program for DVM students.

As with all US veterinary schools and colleges, a large number of the SVM's graduates enter companion animal private practice and a substantial number of graduates seek advanced clinical training (e.g., internships and residencies) before entering private practice. Students seem generally aware of additional career alternatives in veterinary medicine but

a global plan to encourage alternatives to private practice is not apparent. The developing DVM/MPH program, presently a certificate program, is a positive step in this regard.

SVM should consider measures to further enhance interest in career alternatives in underserved areas within veterinary medicine. Additional measure for recruitment of students with a focus in these areas within the profession (e.g., public health, large animal medicine, and biomedical research, which the SVM recognizes as important regional needs) should be developed and employed. A formal faculty-student mentoring program would be an appropriate part of this effort and such a program may assist with reducing attrition rates. The SVM should consider advancing the DVM/MPH program from a certificate program to a fully accredited DVM/MPH combined degree program.

### **Graduate Programs**

There could be some earlier presentation of career possibilities for students in the graduate programs. Several (former) students expressed that since they were ignorant of the breadth of the field and wide range of possible careers when they first entered the graduate program, it would have been helpful to them to have had some orientation to this in the first year.

#### **4. Is there an adequate level of financial support and how does it compare to peer institutions?**

### **Professional Curriculum**

State appropriations for the SVM are separately budgeted within the state system. This has advantages and disadvantages for the SVM. The SVM has had recent success in developing funding from the state for a large animal isolation unit. The SVM has established an Office of Institutional Advancement and an Associate Dean for Advancement and Strategic Initiatives who is charged with, amongst other things, enhancing private support of the School through development.

The review committee notes:

- The school has been authorized to increase tuition 5% annually for 4 years, starting in 2008.
- Revenue from private sources will be an important avenue for revenue growth for the SVM in the future.
- The average student debt load was \$99,000 for the Class of 2007 and \$120,500 for the Class of 2008. The tuition increase, coupled with an increase in average student debt load poses a financial hardship for new graduates. Development efforts to

increase the level of support offered by student scholarships are thus increasingly important.

- Efforts to increase funding of student scholarships are laudable and should continue to receive emphasis. The DVM's overall development program is relatively new and should be a point of focus.

### **Graduate Programs**

There are a variety of mechanisms available for graduate support, and most range from \$17,000-\$25,000. These mechanisms include various graduate fellowships (Board of Regents, Huel Perkins, Flagship, etc.), various federal grants, and internal funding. Several of these sources have come to SVM since the last program review through direct concerted efforts of the school. Typically, the SVM supports many graduate students internally for their first two years of study, and then students are moved on to grant support with their major professor. The number of students taken, and which students are taken is limited in some cases by the grant holder and how much grant funding is available.

The number of funded graduate students was viewed as inadequate given the planned expansion of research programs within SVM. There has been an effort to increase student numbers through grant funds (NIH T32, EDA, BoR GF), but the numbers added via these mechanisms have been modest.

### **5. Is there an appropriate placement record for the program? Is there a mechanism for tracking placement of graduates?**

#### **Professional Curriculum**

The SVM tracks its graduates and provided data for placement post-graduation. The majority of graduates enter practice (75% in small animal) immediately after graduation. Approximately 25-30% enter advanced training, including internships, residencies, PhD programs, and fellowships.

The distribution of career choices post-graduation is similar to many DVM programs. Thus, LSU SVM appears to be falling short in placing graduates in academia, public health, biomedical research, and production animal medicine.

The actions of the SVM indicate they recognize the need for placement of graduates in academia, biomedical research, and public health and the SVM should continue to focus in these areas. Targeted career counseling, expanded recruitment programs, and additional resources will be required to achieve success.

## **Graduate Programs**

All departments are tracking the placements of their graduates. Graduates from CBS are placing in post-doctoral and research positions at medical schools and government agencies. Graduates of PBS are placing in post-doctoral and research positions in research, industry and government agencies, as well as a few in assistant professor positions at LSU and other universities. VCS graduates are taking positions in private practice as well as numerous positions as clinical or assistant professors at a variety of universities. Placements across the departments are strong; the school should consider encouraging more placements into tenure track faculty jobs at other veterinary schools in order to increase LSU's profile.

## **E. Personnel**

### **1. Is the caliber of program faculty adequate and appropriate?**

Like most medical schools, the four-year curriculum at schools of veterinary medicine is divided into two phases. The emphasis of the first phase is on preclinical sciences and includes subjects such as microbiology, virology, biochemistry, anatomy, physiology, pathology, and pharmacology. The second phase is more clinical, covering the principles of medicine and surgery through class work and hands-on experience.

In Phase 1 of the DVM training program at LSU, 55 core courses are taught, excluding courses on special topics. Thirty eight faculty members were identified as coordinators of these courses, while multiple instructors coordinate special topics courses.

In Phase 2, 15 block, clinical rotations are taught, each with a different coordinator and inclusive of 26 graduate faculty members.

All CBS and PBS faculty teaching in the DVM Program have DVM (or equivalent) and PhD degrees or a PhD (or equivalent) degree, and in each case faculty training is in areas appropriate for the courses in which they teach. Clinical faculty members have DVM degrees (or equivalent) with specialty training or board certification in areas relevant to their discipline, and some also have MS and/or PhD degrees. One exception was Ophthalmology, where it was unclear if the course coordinator has specialty training. Overall, the credentials represented by the SVM teaching faculty reflect an expertise that is sufficient for delivering an education at a level of quality expected for a DVM program.

Evaluations by current veterinary students, residents and interns all indicate that teaching in the SVM is of an acceptable quality for the professional programs. General summaries of exit interviews support this view. Faculty members in all three departments have received institutional teaching awards, including the Pfizer-Norden Distinguished Teaching Award, which is awarded to a faculty member at each veterinary college in recognition of

excellence in teaching.

In addition to formal teaching faculty, 15 courses have adjunct, emeritus, visiting or guest Professors/Lecturers who contribute to the courses. Residents in the teaching hospital and diagnostic laboratory also contribute substantially to clinical rotations during Phase 2 of the DVM curriculum. There are approximately 23 residents in SVM programs. These additional personnel add significant value to the teaching program.

In the CBS, 3 faculty are on NIH Study Sections, 6 faculty are on specialty area editorial boards, 4 faculty are on National scientific advisory boards and committees and there other examples of honorific recognition. In the PBS, there is substantial participation at many levels including, grant review panels, national advisory committees/panels, editorial boards, scientific consultancies, honors and awards and international recognition. In the VCS, about half of the faculty members have substantial participation in regional or national activities related to professional societies, editorial boards and advisory committees.

Participation in many of the activities listed is merit-based, such as grant review panels, editorial boards and advisory panels at the regional and national/international levels. This participation reflects faculty recognition at the national and international levels.

## **2. Are faculty and staff demographics satisfactory in the context of the degree programs and other demands on faculty effort?**

The number of faculty in each of the Departments is consistent with other peer institutions that have similar programs, inclusive of DVM and graduate degrees and residency training programs.

Teaching loads for many faculty members in CBS and PBS do not appear to be excessive. During Phase 1, the heaviest teaching load for any one faculty coordinator was 10.5 credits (Basic and Applied Anatomy, I-III). The heaviest load in relation to number of courses was five. Nevertheless, some faculty members have quite high teaching loads, which raise concerns about the quality of instruction that they can deliver. For the PBS, the teaching load seems to be exacerbated by the large number of graduate courses offered. It may be worthwhile to explore alternatives that consolidate graduate courses into those that directly prepare graduate students for competitive research careers. The demands of VCS faculty are somewhat higher, given the nature of faculty responsibilities in the teaching hospital. These faculty members make substantial contributions to Phase 1 training, in addition to the already high teaching load they have in Phase II of the curriculum. In some cases, teaching loads quantified in the table beginning on page 113 of the self-study did appear to be excessive. Percentage of appointments devoted to teaching, service and research was not listed for these faculty members. Particularly in context of the VCS

graduate program, scholarship is an important activity for clinical faculty and time may be limiting here.

The SVM has 35 Professors, 13 Associate Professors, 26 Assistant Professors that are tenure track, and 27 Clinical Faculty (AAVMC Comparative Data Report 2008-2009). Course coordinators during Phase 1 included 18 Professors, three Clinical Faculty, one instructor, and Associate/Assistant Professors comprise the remainder. Course coordinators for Phase 2 include nine Professors, one Associate and three Assistant Professors, along with other faculty who teach in special topics or special training.

An area in which representation is low by comparison to other Veterinary Schools is non-tenure track research faculty. This void may be overcome in time with the effort to enhance research capabilities.

CBS has hired ten new faculty members in the last 5 years, with one hire for the purpose of teaching and others with a focus on enhancing research capabilities. PBS has undergone substantial recent changes with 4.5 new positions with an emphasis on enhancing research capabilities with the new hires. In both CBS and PBS there is evidence that the hiring strategy has been effective in increasing extramural funding, graduate students and postdoctoral fellows, which reflects commendable progress. Recent faculty hires in support of the diagnostic laboratory are expected to help provide better focus and coverage of responsibilities. The VCS has experienced a fairly constant level of faculty turnover with new hires matching or exceeding losses, while maintaining coverage of teaching responsibilities. Nevertheless, the turnover has depleted the number of Associate Professors who represent the future leaders of the Department. The void reflected by this situation represents a potential long-term problem that requires fairly immediate action to avoid. Clarification is needed on strategic hiring plans in relation to VCS goals for research and scholarly activity. Departures of faculty in the Surgery Section specifically (VCS Department) will create significant shortfalls in the teaching, service, and research missions of this Section.

Student administrative and personal support is provided by the Student Services, which includes: a) a Coordinator for phase 2 scheduling, courses, exams and course evaluations (presumably phase 1), b) a Director of admissions and enrollment management (MBA), who has responsibility for grades, scholarships and student aid and, c) a Counselor for students with personal and academic challenges. Adequate administrative support is available through staff in each Department that support teaching and research needs. Nevertheless, there appears to be a shift of administrative responsibilities from the central administration to SVM staff, the implications of which warrants evaluation. There are 89 veterinary technicians in VCS who presumably contribute to experiences and training of veterinary students during their clinical rotations.

### **3. Do personnel policies support the maintenance and continuing development of high-quality programs?**

The mean salary for SVM Professors and Associate Professors is slightly below the mean for U.S. Veterinary Schools by approximately \$2,000 and \$4,000, respectively, while the SVM mean salary for Assistant Professors is higher by approximately \$8,000 (AAVMC Comparative Data Report 2008-2009). This higher relative salary level for new hires is consistent with the SVM effort to recruit faculty who have greater potential to attract extramural research funding. The lower salary levels should be evaluated in context of the attrition of Associate Professors, particularly in VCS.

Each of the Departments has a different approach for “mentoring” of tenure-track Assistant Professors. While the approaches need not be identical, each should address basic needs that mentoring systems are intended to fill. The PBS mentoring committee appeared to represent in reality a tenure and promotion committee. An effective mentoring function often operates on a more frequent, more personal, more prescribed and less formal basis than reflected by the semiannual PBS mentoring committee meetings. The VCS mentor approach appeared to have some instability as described, given that the mentor assigned to an Assistant Professor may vary from year to year during the pre-tenure period. Continuity in advice from an experienced faculty mentor is an important aspect of effective mentoring. It may be beneficial for the three Departments to discuss views on the goals of a mentoring system and share ideas on how to best accomplish those goals. While Assistant Professors in the CBS and PBS felt that expectations for tenure and promotion were clear, Assistant Professors in the VCS did not. It will be important to address this disparity among Departments.

There are 22 minority faculty members at the SVM; two Professors, three Associate Professors; eight Assistant Professors, five clinical faculty and four non-tenure research faculty (AAVMC Comparative Data Report 2008-2009). Minority representation is higher than the mean (17) for U.S. Veterinary Schools. The ratio of male:female faculty is most disparate on the upper professorial ranks, with greatest level of equivalency, about 3:1, at the Assistant Professor level. There are no women in administrative positions of the SVM

## **F. Curriculum**

### **1. Are there identified student learning outcomes and are they appropriate to the program?**

#### **Professional Curriculum**

The LSU SVM utilizes Standard 11 of the American Veterinary Medical Association Council on Education ([http://www.avma.org/education/cvea/coe\\_self\\_study.asp](http://www.avma.org/education/cvea/coe_self_study.asp)) to analyze

learning outcomes. Colleges and Schools of Veterinary Medicine are required to provide such analysis involving student achievement. Data to demonstrate outcomes of the educational and/or institutional program(s) may be collected by a number of means including, but not limited to, surveys, interviews, focus groups, self-assessments, third-party provider, information held by the college, and other.

The nine components of the AVMA COE Standard 11 outcome assessment include: 1) comprehensive patient diagnosis (problem solving skills), appropriate use of clinical laboratory testing, and record management; 2) comprehensive treatment planning including patient referral when indicated; 3) anesthesia and pain management, patient welfare; 4) basic surgery skills, experience, and case management; 5) basic medicine skills, experience, and case management; 6) emergency and intensive care case management; 7) health promotion, disease prevention/biosecurity, zoonosis, and food safety; 8) client communications and ethical conduct; 9) strong appreciation for the role of research in furthering the practice of veterinary medicine.

With respect to these assessments of clinical proficiency, LSU SVM has reported:

- Class of 2008 - Students - Almost all graduating students felt well prepared in all areas. The graduates rated themselves as 70-95% good to outstanding in their preparation. The areas where the students reported that they were least prepared included entry level surgery skills, emergency medicine skills, and client communication skills relative to giving estimates and giving bad news.
- Class of 2008 - Faculty - SVM faculty felt that that DVM students were well prepared for entry into their programs and for professional/research careers at the time of graduation.
- Class of 2008 - Employers - Employers rated 2008 graduates as good to outstanding (80-100% of the time in all nine assessments).
- Classes of 2003 and 2007 - Professional Preparation - Over 90% of these alumni felt the curriculum had prepared them for the needs of their job with preparation relative to knowledge base and problem solving skills being rated more highly than preparation relative to technical skills.
- Classes of 2003 and 2007 - Job Satisfaction and Career Choice - There was a high level of satisfaction with career choice (82% and 93% respectively, expressed satisfaction). There was also a high level of satisfaction with educational preparation for first employment (97% and 95% respectively, expressed satisfaction).

- Classes of 2003 and 2007 - Areas of Needed Improvement - There was general agreement that primary care concepts and surgical experiences must be improved.

The SVM Curriculum Committee has developed a list of clinical skills that students should master in each of the clinical rotations in Phase 2 of the curriculum. A procedures-based checklist has been developed to incorporate into the assessment matrix used at the end of each of the required rotations. A computerized capture system is being developed where each of the 400+ skills can be mapped to the entry level, primary care skills as listed in the AVMA Council of Education Self Study Report. The SVM has as a goal to incorporate these outcomes of student learning into the assessment matrix beginning with the Class of 2010 entry into Phase II of the curriculum.

In 2008, the AVMA Council on Education placed the School on “Limited Accreditation” for a period not to exceed two years because of non-compliance with Standard 3 (Physical Facilities) and Standard 11 (Outcomes Assessment). Since that finding, the School has made significant progress in establishing learning outcome expectations for its students and has been recently found in compliance with regard to Standard 11. The School’s leadership should recognize however that the profession will likely move forward with other or better outcomes assessment methodology.

The School’s leadership should work with the Association of American Veterinary Medical Colleges (AAVMC) to identify outcomes assessment methodologies that permit sharing of ideas and data between Schools.

### **Graduate Programs**

There are assessment matrices of student learning outcomes for both the MS and Ph.D. degrees. They emphasize mastery of appropriate content, being able to properly design experiments, mastery of the skills and technology necessary to do experimentation in veterinary medicine and biomedical fields, and ability to communicate, both orally and in writing, the results of the experiments. These outcomes are totally appropriate for advanced degree students in a scientific field.

**2. Is each curriculum under review current and appropriate (please consider all requirements including courses, examinations, theses, dissertation, etc.). For example, are required courses sufficient and appropriate; are examinations appropriately comprehensive and rigorous; are theses and dissertations of high scientific, scholarly and literary quality? Are majors, minors and concentrations appropriate and logically organized, defined, sequenced and articulated with each other?**

### **Professional Curriculum**

Student surveys in 2008 indicate a high satisfaction rate with the professional program in both Phases (I and II) of the curriculum. In Phase 1 there were concerns about the physiology and neuroanatomy/neurophysiology courses in Year 1, and the pharmacology course in Year 2. The same concerns had been noted by the Class of 2007. In response, the School re-organized the physiology and pharmacology courses, and new instructors were recruited to teach course content.

Companion animal-oriented students found the Small Animal Internal Medicine and Anesthesia clinical rotations most valuable, while equine-oriented students found the theriogenology clinical rotation most valuable. One-third of the respondents in the student survey in 2008 reported that Equine Medicine and Surgery, Companion Animal Surgery, and Microbiology and Parasitology were not valuable clinical rotations. The quality of the primary care (vs. secondary and tertiary) experience was still recognized as a weakness in Phase II of the curriculum although two new elective rotations in Shelter Medicine and Emergency and Critical Care Medicine have helped create new primary care case material.

The review committee's interview with DVM students suggested a number of areas for improvement in instruction.

- **Teaching Documents** – Notes, PowerPoint Presentations – Posting of text notes and Power Points to the CVM intranet is perceived by the students to be ineffective. The SVM should develop a School-wide standard for the posting of notes and Power Points to Moodle, WebCT, or WebVista prior to classroom contact.
- **Course Coordination** – Course Coordinators should meet with their course teaching faculty before the beginning of the course and at the end of the course to review course outcomes. Course Coordinators should also meet with the Collegiate Curriculum Committee on some regular basis to review and ensure the horizontal and vertical integration of the curriculum. The Review Panel believes that the review is taking place, but implementation is lacking. Course Coordinators should also meet within discipline on some regular basis to ensure coverage of discipline content. For example, in gastrointestinal biology, instructors in the anatomy, physiology, pharmacology, immunology, pathology, imaging, and medicine of the digestive tract should meet on some regular basis to ensure curricular connectivity. The School should also consider the development of one or more Course Coordinator awards that would recognize the contributions of outstanding course coordinators and be conferred by the Dean at the time of SVM teaching award ceremonies. Finally, and in general, course coordination responsibilities should not be assigned to Assistant Professors (two examples - one each in CBS and PBS) during the tenure-probationary period.

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- Live Animal Exposure – Exposure to live animals in the first two years of the curriculum appears to be limited to those students who succeed in subscribing to the elective Special Topics courses. The SVM should develop a core Clinical Skills course or courses in the first two years of the curriculum to ensure live animal contact and the development of clinical skills prior to entry into Phase II of the curriculum. The School should undertake this effort with some urgency.
- Student Teaching Evaluations - To assure continuing student participation in teaching evaluations, the SVM administration must provide direct, unambiguous evidence to the students that their input does effect change.
- Phase I Teaching Laboratories - Enthusiasm levels and frequency of attendance of the teaching faculty in some Phase I teaching laboratories are described by the students as apathetic and sporadic, respectively. The Department Chairs must assure the enthusiasm and attendance of their teaching faculty at these laboratories.
- Classroom Learning Objectives - Many of the teaching faculty do not state learning objectives for their lectures, or learning objectives are listed that bear no resemblance to the course or examination content.
- Primary Patient Care - Because of the perception (and reality) of the Veterinary Teaching Hospital as a referral hospital in the community, the clinical caseload acquires more and more of a secondary and tertiary patient care profile over time. Students can definitely learn from these types of cases, but it is incumbent upon the Department of Veterinary Clinical Sciences and Veterinary Teaching Hospital to ensure a primary patient care profile in the fourth year of the curriculum.
- Clinical Teaching/Learning – Fourth year (Phase II) clinical students learn in many ways. “Show and tell” or apprenticeship-type teaching is one paradigm that is important for veterinary students, but it is not necessarily the most important, form of teaching and learning. In a busy Veterinary Teaching Hospital, show-and-tell type teaching rules the day. The senior year curriculum must include problem-solving, critical reading, topic teaching, and other learning paradigms. It was not evident from the review how much of this type of teaching is taking place in each of the clinical rotations. The VCS Department Chair, Collegiate Curriculum Committee, and Associate Dean of Academic and Student Affairs should review all clinical rotations to assure that multiple teaching/learning paradigms are being used in each of the rotations. This cannot be left to happenstance.

### **Graduate Programs**

In all doctoral programs there are about two years of coursework, followed by a written and oral general exam. There are required courses as well as freedom to tailor coursework for each student. Some CBS students felt that a recent curricular change allowed for less tailoring, but there appears to still be substantial freedom in the current curriculum. There is required statistics and/or methods coursework in all departments. No doctoral program had a qualifying exam; adding such an exam is something all departments may want to consider.

CBS has a master's degree with prescribed coursework overlapping with that of doctoral program. PBS has strong curricular demands for its master's program parallel to coursework in the doctoral program. VCS has a master's degree program usually tied to DVM residents. The review committee was divided as to the scholarly nature of the master's theses in the VCS department. The surgery residency programs require a master's degree while others do not. Some review panel members felt that such master's degrees could lack scientific rigor. Others felt that while the master's theses might be of appropriate quality, it may be unnecessary to have them as part of a requirement for certain concentrations. If the master's thesis was optional rather than required, this may lead to only students with a high degree of interest in scientific rigor seeking to undertake master's projects. In any case, the faculty in VCS should review the utility of the master's degree in their program, examining why it is required for some concentrations and not for others, and if the quality of the theses is uniformly high.

**3. How well is the department performing its mission of providing service/general education courses? Does the material presented in the courses adequately prepare the students for the succeeding courses? How effective is the department in measuring the learning outcomes for the service/general education courses?**

### **Professional Curriculum**

All professional (DVM) students take the same courses in Phase I of the curriculum with the exception of some elective Special Topics courses in Spring Quarter of Years 1 and 2. In Phase II of the curriculum, students can choose one of six focus areas (Small Animal Practice, Mixed Animal Practice, Equine Practice, Farm Animal Practice, Exotic and Zoo Animal Practice, and Public Practice) for further specialization. Each of these focus areas have a basic portfolio (required), career emphasis portfolio (required), and practice blocks (required). This "tracking system" does permit LSU students to more clearly define specialty or species-oriented interests.

### **Graduate Programs**

There are no general education courses in the VMS curriculum. However, the faculty members in the various departments do provide direct service to the DVM students by teaching many of the courses that they take. It is clear that the coordination of the material delivered to the DVM students by this faculty need to be reviewed, and done more systematically. Faculty members responsible for content presentation need to coordinate to be sure all areas are covered, and that there is not unnecessary duplication across instructors. In addition, it may not be a good idea to have untenured faculty responsible for course coordination for the DVM curriculum.

#### **4. Are department requirements clearly published and presented in a manner that students can understand?**

### **Professional Curriculum**

In general, course syllabi, lecture outlines, course instructor profiles and contact information, and grading policies are distributed at the beginning of the courses, and the same information is posted in the SVM intranet. There is some confusion as to the expectation of student attendance in class. Poor class attendance has been reported for one of the SVM classes. It was the opinion of the review panel that the School should insist upon student attendance in class.

### **Graduate Programs**

All three departments have handbooks for their graduate students detailing the requirements and progress through the program. The handbooks for the PBS and CBS departments were especially well organized and easy to follow, particularly the checklists for various types of students in the appendices.

#### **5. Please comment on curriculum and course breadth, depth and sequencing (e.g., are there enough courses? Are there too many demands of the discipline or of the students and are the required courses offered with sufficient frequency?)**

### **Professional Curriculum**

It was the qualitative impression of the review panel that the curriculum may be over-represented in equine-oriented content and core requirements and under-represented in food animal-oriented content and core requirements.

The length of the 4-6 week blocks in Phase II of the curriculum may prevent some students from participating in some of the clinical disciplines for which they will need to be “practice-ready” on Day One of employment. Dentistry is one of the disciplines that comes to mind; there are others.

There is an under-emphasis on biomedical research throughout the curriculum. A seventh focus area, i.e., biomedical research, should be considered in the LSU curriculum.

### **Graduate Programs**

The required courses in CBS appear to be offered annually. One required course in PBS also seems to be offered annually, while the other appears to be on a two year schedule. Seminars are frequently offered. In general there are many appropriate courses on the books for all departments; some seem to be offered with more regularity than others.

### **6. Are there any distinctive characteristics that contribute to the program (e.g., special research emphases)?**

#### **Professional Curriculum**

Students enrolled in the D.V.M. program are able to participate in clinical opportunities at any of the other 28 Schools and Colleges through an informal agreement between programs.

There is a formal agreement between the SVM and East Baton Rouge Parish that allows students to participate in an animal control rotation at the East Baton Rouge Parish Animal Control Center.

The SVM has formal agreements with Tulane University, Pennington Biomedical Research Center, and the National Hansen's Disease Research Program to participate in an NIH T-35 grant to facilitate the involvement of veterinary students in summer research programs.

The School has formal agreements with 16 animal shelters in south Louisiana for students to participate in Shelter Medicine and Spay/Neuter programs.

Phase II Curriculum - Compared to many other schools, the LSU curriculum permits earlier clinical exposure for their students.

Students with an interest in research are given the opportunity to perform Summer Research Fellowships funded by Merck-Merial and the NIH. This provides a direct connection with the research activity in the SVM and increases awareness of the breadth of careers available to graduate veterinarians in research.

### **Graduate Programs**

There is strength in infectious diseases in the PBS department, with 15 faculty sharing expertise in this area.

There is a concentration in cancer biology and gene therapy in the CBS department and some oncology expertise also in the clinical faculty. This area should continue to

strengthen if there is success in adding more graduate students and post-docs.

**7. Are there any departmental curricula weaknesses or deficiencies?**

**Professional Curriculum**

With multiple resignations and/or retirements, there is a pending crisis in the Surgery Section of the Department of Veterinary Clinical Sciences. How will these positions be replaced, and how will all three missions of the Surgery Section (teaching, research, service) be accomplished?

The Surgery Section must re-commit to its mission in the teaching of fourth year veterinary students. What are the bread-and-butter surgical skills that LSU graduates will need to be “practice-ready” on Day One, and how will the Surgery Section and Teaching Hospital develop a clinical case profile that will fulfill those needs?

Rounds meeting rooms in the Teaching Hospital are insufficient in number and quality.

The Teaching Hospital must make more progress toward the development of an electronic medical record. The continuing inefficiencies of a paper medical record detract from the learning quality of a fourth year veterinary student.

**Graduate Programs**

There is no evidence to indicate any weakness in the curricula of the graduate programs. The only comment from previous and current graduate students (also shared by DVM students) was that a class in the care and handling of laboratory animals would be most beneficial to students who use animals in their research. This possibility might be best accomplished through the University office for animal care.

**8. To what extent is technology used for curriculum delivery and distance learning, and how effective are the department’s efforts?**

**Professional Curriculum**

The SVM has adopted many of the modern classroom teaching technologies. In the first two-and-a-half years (Phase I) of the curriculum, the technology used is similar to any other basic or clinical science program on campus. Of special note, software has been developed in anatomy to translate CT and MRI images into three dimensional anatomic renderings. Phase 2 of the curriculum is technology driven for service and teaching missions, e.g., advanced imaging, radiation therapy, cardiovascular imaging and interventional procedures, surgical and physical therapy, endoscopic imaging, and advanced intensive/critical care and anesthesia monitoring and therapy). The Review Panel was unaware of any distance learning programs.

- The Veterinary Teaching Hospital must make more progress toward the development and implementation of an electronic medical record.
- The SVM must develop a School-wide standard for the posting of notes and Power Points to Moodle, WebCT, or WebVista prior to classroom contact.

## **G. Resources, Facilities and Equipment**

### **1. What library strengths can you identify? Is the budget adequate?**

An internal survey of faculty, staff, and house officers indicated general satisfaction (96.4%) with the library facilities were adequate for DVM education. The total budget for the library has remained stable for several years (p. 187 of self-study document). Library hours and access seem adequate.

As additional resources become available, enhancing the library's budget should be considered.

### **2. To what extent are the facilities and capital equipment sufficient for program present and future needs? If inadequate, are there approaches to address these deficiencies?**

House Bill 1287 provided approximately \$4.5 million for the construction of a Large Animal Disease Isolation University. The school took an active role in this legislative process, recruiting approximately \$800,000 in private funds toward this construction.

The recent emphasis on small group and problem-based learning has led to renovation of space to accommodate the small group sessions.

The self-study document indicates that the professional program's instructional budget has not increased in the past 5 years (\$275,000; page 37).

Two issues related to facilities are electronic in nature:

- (i) Much of the record keeping in the Teaching Hospital relies on paper. While there are inherent advantages and disadvantages of this system, future graduates will increasingly work with electronic medical records.
- (ii) Students expressed concerns that posting of notes and lecture presentations is not standardized within the veterinary curriculum and in some cases occur by students copying presentations from the lecture hall computer following the lecture.

Rounds rooms in the Teaching Hospital are limited in number.

The SVM should implement an electronic medical records system. The SVM should adopt a college-wide protocol for posting of notes and lecture presentations, which provide wider and timelier access for its DVM students.

Innovative use of development funds to leverage state support, as occurred with the isolation unit, should be adopted as a prototype for increased funding of important programs, such as the professional program's instructional budget, by the SVM in the future.

#### **H. Service Related to Program Goals**

Key services related to the teaching program are provided by the Veterinary Teaching Hospital and Programs in clinical internships and residencies; the services offered include diagnostic and clinical pathology, laboratory animal medicine and other clinical specialties. The service-related programs directly contribute to program goals of the SVM. The service programs contribute to teaching by providing residents and interns who participate in teaching, case material, and experience in clinical methods and equipment associated with operations of these services. These services have associations and contracts with other institutions, facilities and operations that support experiential opportunities for veterinary students.

Identified needs filled by veterinarians span many sectors of society, which are represented regionally throughout the U.S. A shortage of veterinarians is recognized to exist in a number of these sectors. The SVM service-related programs provide specialty training for veterinarians to address some shortages, while simultaneously providing teachers (residents and interns) and opportunities for education of general veterinary practitioners. The SVM service related programs integrate to meet these needs at multiple levels.

### **III. Internal Mechanisms for Assessment**

**Does the unit have effective internal mechanisms for assessing program outcomes? Evaluate the effectiveness of internal mechanisms for assessing undergraduate and graduate outcomes.**

LSU SVM performs an extensive internal assessment of DVM graduates, taking into account quantifiable measures including success rates on the National Veterinary Licensing Examination, student attrition rates, and employment rates. In addition, they survey graduating seniors, alumni, faculty, and employers for their satisfaction with the program and the students. The surveys were begun in 2006 and appear to provide a realistic evaluation of the educational program, but more data will need to be collected to determine if the assessment is useful in changing program outcomes.

Comparable assessment matrices of student learning outcomes exist for both the MS and

Ph.D. degrees.

## **IV. Program Future**

### **A. Challenges**

#### **1. What are the program strong and weak points?**

##### **Strengths**

1. The Administration has done an excellent job of responding to the last program review (1999) that resulted in an “unsatisfactory” performance rating. New top-level administration was brought on-board following this review. These individuals, in particular the Dean and Associate Dean for Research and Advanced Studies have facilitated the recovery of SVM and its graduate programs.
2. The growth in the basic research enterprise since 1999 in SVM has been outstanding.
3. SVM has responded aggressively to internal (State and LSU) programs to increase the number of faculty lines in the School. Of the 16 GBI grants that were funded across the State, four were granted to SVM.
4. Some major funding initiatives have been started recently in SVM, in particular the COBRE grant currently administered by Prof. Kousoulas. This grant improved research infrastructure and secured hiring several new faculty members who have been successful in securing competitive extramural grants.
5. SVM has dramatically improved research infrastructure within the School through improvements to the physical plant and the acquisition of new equipment.
6. The research support facility is operating well with good staff managing these facilities and supplying service to the LSU research community. The analytical laboratory supported by the racing commission is a significant resource.
7. The library within SVM is an asset, having sufficient well-trained staff to support faculty and student needs.
8. DVM and residency programs are well received by the students, residents, faculty, and alumni. Satisfaction with the program is high.
9. LSU SVM has a strong DVM applicant pool.

## **Weaknesses**

1. Recruiting graduate students (DVM and PhD) in SVM is passive, relying on the student to approach the school. This paradigm is not consistent with a program that professes a desire to improve the quality of its students and research programs.
2. There are too few graduate students, especially those involved in basic research. These students are a major part of the engine that drives the research enterprise. More are needed to continue the program moving forward.
3. Strategic plans need to be updated. All units should have detailed plans in place that define research directions, future hires, and plans for curricular improvements.
4. Communication between groups in SVM needs to be improved. The review panel found ineffective communication between individual units, between the administration and individual units, between graduate students within different units, and between DVM students and graduate students. While we recognize that rivalries between units are inevitable because of the competition for limited resources, an absence of open communication will lead to a level of mistrust that ultimately will slow progress and hurt the academic development of students.
5. While the graduate programs in CBS and PBS have substantively advanced since the last Program Review, the graduate program in VCS appears to be of secondary importance relative to the clinical concerns of the staff in this unit. This observation is understandable given the VCS faculty's responsibility for teaching DVM students and operating a large veterinary clinic, but if VCS is to progress in the same way as CBS and PBS this department needs to find a way to balance quality in the clinic with a quality research program. It is for this reason that the MS degree as administered to DVM residents in VCS is problematic. We question the utility of this degree and ask whether the time and effort needed to usher students through the MS program is wasted.

## **2. Is the program taking into account the way the discipline is moving?**

The program has recognized, somewhat belatedly, that the profession has an important role in public health. The School has engineered an MPH program that should develop the DVM-MPH scholars of the future who will work closely with physicians, physician-scientists, and other health care providers to promote public health.

The School has also correctly recognized that veterinarians have a fundamental role in biomedical research. The Comparative Biomedical Sciences department perhaps best epitomizes progress made toward the education and training of DVM-PhD biomedical scientists. The Pathobiological Sciences department, and particularly the Veterinary Clinical Sciences department, should move more in that direction.

### **3. Is the program working to adapt to LSU's vision for the future, as outlined in the Flagship Agenda?**

Among the goals of LSU's Flagship Agenda are a) "to increase prominence in the national arena for federal projects and funding," and b) "to promote nationally ranked programs that prepare students for the most competitive and prestigious graduate programs and employment opportunities." The CBS and PBS programs at LSU are rapidly moving toward completing these goals. Each department has significantly increased its level of federal funding and the number of graduate students in their programs. A well-designed concerted effort to improve these departments has resulted in the hire of highly qualified young faculty and their efforts are pushing the departments forward.

### **4. What opportunities for program development should the unit pursue?**

1. The success of the program development initiated in CBS and PBS should serve as the paradigm for future action within the School of Veterinary Medicine. By choosing areas of research concentration within a department and aggressively pursuing a course of action that will promote the hire of new faculty members, the department's national reputation is advanced. The successes observed in CBS and PBS can be expanded upon and there is no reason why this cannot be applied to VCS.
2. Some on the review committee feel that the academic leadership at LSU does not understand the philosophy, basis, or importance of the School of Veterinary Medicine in its academic community. Main campus understands the baccalaureate experience, and the graduate and post-graduate experience, but not the professional curriculum and certainly not the medical specialties programs (internships, residencies) offered by the School of Veterinary Medicine. We have the impression that LSU SVM is seen as "an island," and not an integral part of the larger campus. This separation has been promulgated by SVM and main campus; it is apparent in the attitude of resentment toward main campus among individuals at SVM and in the indifference and ignorance of many on main campus toward programs at SVM. LSU SVM holds tremendous potential. It is a unique resource for biological and clinical science in Louisiana, which is apparent in their success since the last program review. LSU SVM and main campus can only benefit from awareness and appreciation of what each has to offer and their increased interaction.