

AMERICAN COLLEGE OF VETERINARY MICROBIOLOGISTS

FIVE YEAR IN-DEPTH REPORT

November 1, 2005

A. History and progress of organization

1. Summarize the history of the specialty organization.

Organizational efforts to form a specialty group in microbiology grew out of a concern for the improvement of professional instruction in veterinary bacteriology and virology and to promote postdoctoral training and graduate programs and quality research in veterinary microbiology. These efforts can be traced back to the American Association of Veterinary Microbiologists, established in 1952. The membership of this group was responsible for the formation in 1966 of the American College of Veterinary Microbiologists (ACVM) as the specialty organization recognized by the American Veterinary Medical Association. The latter approved that ACVM was qualified to set standards of training and experience for certifying veterinary microbiologists and to provide the recognition of competence and special knowledge in the practice of veterinary microbiology.

The ACVM was recognized by AVMA in 1966 with 26 Charter Diplomates. Details of the organization's history and development for the period 1968 to 1980 were included in the report prepared for the ACVM's 1981 in-depth report for review by ABVS, and are available from the Secretary-Treasurer on request. Similarly the history and development from 1980 to 1995 were included in the 1990 and 1995 reports, which are also available on request. However, notable events include the establishment of subspecialties in Bacteriology/Mycology, Immunology and Virology to replace the general Microbiology certification; the term of the Secretary-Treasurer was changed from 1 to 3 years in 1996; and in 1999 the publication requirement for credentialing was eliminated. In 2002, ACVM changed from an annual election of a Chairman of the Board of Governors' to a process whereby a President would be elected by the membership for a two year term (our first election utilizing this process occurred in 2004). Beginning in 2003, ACVM changed to a system whereby candidates for certification could take the general veterinary microbiology or subspecialty examinations in any order. Previously candidates had to pass the general veterinary microbiology (Part I) examination prior to sitting for a subspecialty (Part II) examination.

Membership changes since 2000. The membership of ACVM currently is 160 active, 87 emeritus and 34 honorary Diplomates for a total of 281. This total of 281 is an increase of 6 for the last five-year period compared to 21 and 24 each for the previous two five-year periods, respectively. Over this period 13 new Diplomates have been certified in 14 subspecialty areas; however, please note that the class of 2005 has not been included in the directory (certifying examination is December 2005). This is comparable with the previous five-year reporting period when 19 completed the certification process. For the reporting period 2000 to 2005, the College granted emeritus status to 13 Diplomates and 7 Diplomates died.

2. Describe how the specialty organization:

a. Ensures improved veterinary medical services are offered to the public.

Unlike many other specialties, Veterinary Microbiology is not practiced as a public contact profession. Most veterinary microbiologists are engaged in teaching,

diagnostic services, or research and development activities as employees of academic institutions, federal or state governments, or private industry. Only one of our Diplomates is in private practice. The services provided to the public are, therefore, indirect. Our Diplomates provide assistance to the clinician by establishing etiological identification of infectious diseases and by determining antimicrobial sensitivity patterns of pathogens isolated from patients. They provide instruction to students in pathogenic microbiology and infectious diseases. They explore the pathogenesis of important infectious disease processes affecting companion and food-producing animals. They pursue improved methods to diagnose, treat and control these conditions. In this way, veterinary microbiologists make important contributions to animal health and to public health. Through participation in governmental organizations, veterinary microbiologists have responsibilities in animal disease and zoonosis control programs concerned with the preservation of human health. These indirect public services are improved when they are performed by individuals who have attained the high professional standards expected of ACVM Diplomates. The ACVM Diplomate must meet the ACVM's educational and experience prerequisites for eligibility to take the Part I Qualifying Examination and must demonstrate professional proficiency by successfully completing the Part I Qualifying Examination and the Part II Certifying Examination. The ACVM encourages its membership to remain current by participating in discussions of important issues at meetings and by the regular presentation of continuing education seminars and workshops.

- b. Has a necessary number of potential Diplomates to serve a clearly demonstrable need within the profession.

The ACVM fosters communication among veterinary microbiologists on important issues affecting the profession of veterinary medicine and the specialty of veterinary microbiology. In the recent past, we have discussed and participated in the extra-label drug use issues and legislation and in the federal regulation of biological products. As the technologies of bio-engineering and molecular biology are applied to the diagnosis, treatment and prevention of infectious diseases of animals, regulatory issues have arisen that are not adequately addressed in existing legislation and the ACVM has participated in modernization of the laws and regulations. In recent years, ACVM has participated in the dialogue on antibiotic resistance of bacteria through sponsorship of symposia and through participation in the Council on Biologics and Therapeutic Agents and other avenues of AVMA. The ACVM was also an active participant in the AVMA sponsored discussions on vaccination guidelines and the impact of duration of immunity on revaccination recommendations for practitioners.

The ACVM regularly organizes and sponsors continuing education programs, symposia and workshops. Oftentimes it has co-sponsored a continuing education program as part of the Section on Research at the AVMA's Annual Meeting. These events are well attended (often more than 100 people attend the program at AVMA). The ACVM annually presents a continuing education symposium on some aspect of veterinary microbiology in conjunction with the annual meeting of the Conference of Research Workers in Animal Diseases. The symposium is jointly sponsored with the American Association of Veterinary Immunologists. These symposia are extremely well attended by 400 to 600 scientists working on animal diseases. We have also co-sponsored a continuing education program with ACVIM as part of their meeting. Our continuing education programs at AVMA, ACVIM and CRWAD meetings are open to all. Also, we have welcomed non-members as workshop participants as space permitted. The ACVM has conducted a comprehensive review of the elements of veterinary microbiology that should be included in the professional veterinary curriculum.

The ACVM has 281 members and is represented in virtually every academic institution in veterinary medicine, and in most federal and state diagnostic and biologic and research laboratories dealing with veterinary pathogens. A critical mass exists now for members to serve as resources for training new Diplomates and provide the support to meet the goals set out for ACVM (see section a).

- c. Represents a distinct and identifiable specialty of veterinary medicine.

Microbiology is a discipline specialty as opposed to a system or species specialty. Knowledge of infectious disease processes is an element common to many areas of specialization in veterinary medicine. Specialists in clinical veterinary medicine deal with the recognition and treatment of infectious diseases. The veterinary pathologist is interested in abnormal changes in body tissues and fluids resulting from microbial invasion. Specialists in laboratory animal and zoological medicine deal with the control of infectious diseases in certain animal populations. The specialist in preventive medicine studies the spread of pathogens through host populations and is concerned with safeguarding the public from zoonotic diseases. *In contrast to other veterinary specialists, the veterinary microbiologist focuses on the ecology of host-parasite relationships.* He/she studies virulence mechanisms of animal pathogens, investigates the immunological responses of animals to microbial infections, explores immunological and chemotherapeutic methods of interfering with, or aborting infections, and develops specific assays for pathogen identification. The comprehensive study of infectious diseases and immunological processes is uniquely the realm of veterinary microbiology.

3. Other aspects of the history and progress of the specialty organization.

As mentioned before the College sponsors major educational programs each year. Sometimes, we sponsor part of the Research Medicine section of the program for the AVMA annual meeting in July. The ACVM is a co-sponsor for the program and selects and arranges the speakers. The second is a special symposium held just before the annual meeting of the Conference of Research Workers in Animal Diseases, which is usually held in Chicago, Illinois every November. The ACVM co-sponsors the symposium with the American Association of Veterinary Immunologists. The ACVM plays the lead part by doing the fund-raising, arranging the meeting place and reimbursing the speakers. In 2002, we co-sponsored a program with ACVIM at their meeting. Following are the programs since 2000:

2001 AVMA PROGRAM

Diagnostic Veterinary Medicine

- 8:00 AM PCR and Diagnostics (Kenny Brock)
8:45 AM Immunohistochemistry (Deborah Haines)
10:15 AM Clinical/Herd Immunology (David Hurley)
11:00 AM Serology (Christopher Chase)
11:30 AM Panel Discussion (Kenny Brock)

2001 CRWAD PROGRAM

B-Cells and Infectious Disease

- 1:30 PM B Cell Differentiation in Cattle (Mark Estes)
2:15 PM Bovine Antibodies: Isotypes, Allotypes and Protective Immunity (Lynette Corbeil)
3:15 PM B-cell and Antibody Repertoire Development in Fetal and Neonatal Piglets (John Butler)
4:00 PM The Role of the Surface Immunoglobulin Receptor Complex in Chicken B Cell Development (Michael Ratcliffe)

2002 AVMA PROGRAM

Nutrition and Immunity

8:00 AM Nutrition and Immunity in Companion Animals (Christine M. Grieshop)

8:45 AM Immune Response in the Ketoacidotic Animal (Douglas Donovan)

10:15 AM Natural Antimicrobials (Christopher Chase)

11:00 AM Nutrition and Immunity in the Geriatric Animal (Simin Meydani)

2002 CRWAD PROGRAM

Prion Diseases: Where are we 15 years after BSE?

1:30 PM The Transmissible Spongiform Encephalopathies: An Overview (Linda Detwiler)

2:15 PM Prion biology: insights from cell-free studies and more (Gerald Baron)

3:15 PM Oral Pathogenesis of Prion Diseases (Richard Besson)

4:00 PM Scrapie - role of sheep prion genetics in disease control (Donald Knowles)

2002 ACVIM PROGRAM

Relationships Between Infection and Immune-Mediated and Idiopathic Diseases

Infectious Diseases: The Evolution of Virulence (Paul Ewald)

Bacteria and Autoimmunity: Association of Infection and Rheumatoid and Reactive Arthritis (A. Ebringer)

Viruses and Immune Mediated Disease: Ocular pathology and herpetic stromal keratitis (Barry Rouse)

Viruses and Autoimmunity: The Pathogenesis of Insulin-Dependent Diabetes Mellitus (N.K. McClaren)

Lentiviruses and Immunopathology: Alterations in the Immune System (J.K. Levy)

2003 CRWAD PROGRAM

Agricultural Bioterrorism and Biosecurity

1:30 PM Globalization and Threats of Disease (Corrie Brown)

2:15 PM Agrobioterrorism (is that a word?): Role of Diagnosis and Surveillance (Tom McKenna)

3:15 PM National, State and Local Response to an Agroterrorism Attack on Livestock (Ty Vannieuwenhoven)

4:00 PM Countering Agricultural Bioterrorism – a National Research Council Report (Harley Moon)

2004 CRWAD PROGRAM

Advances in Vaccine Delivery Technologies

1:30 PM Microparticles as Vaccine Delivery Systems (Derek O'Hagan)

2:15 PM Transcutaneous Delivery of Vaccines (Gregory Glenn)

3:15 PM Uptake of Pathogens and Vaccines in Mucosal Lymphoid Tissues of the GI Tract (Marian Neutra)

4:00 PM Needle-free Administration of Vaccines (Sylvia Van den Hurk)

2005 CRWAD PROGRAM

Use of Genomics for Disease and Vaccine Research

1:30 PM Bordetella Research in the Post-genomic Era: Theory versus Practice (Andrew Preston)

2:15 PM The Mycobacterium avian subsp. paratuberculosis genome and its initial research applications (John Bannantine)

3:15 PM Microarray analysis of host-pathogen interactions: listening to the noise (Philip Griebel)

4:00 PM Immunogenomics of the stress-immune axis in cattle: a tale of hormones, host susceptibility, and heritability (Jeanne L. Burton)

The following graduate student awards have been given at the Conference of Research Workers in Animal Diseases annual meeting, which is usually held each year in Chicago, Illinois in November.

2000

Don Kahn Award (\$200):	G. Koljesar
Bacteriology Award (\$100):	R.J. Tibbetts
Immunology Award (\$100):	J.E. Nally
Virology Award (\$100):	L.A. Brewer
Poster Award (\$100):	C.L. Topliff

2001

Don Kahn Award (\$200):	B. Strommenger
Bacteriology Award (\$100):	V. Rivera-Amill
Immunology Award (\$100):	C. Malazdrewich
Virology Award (\$100):	A.E. Hoet
Poster Award (\$100):	K. Ingrey

2002

Don Kahn Award (\$200):	V. Srinivasan
Bacteriology Award (\$100):	M.E. Konkel
Immunology Award (\$100):	C.K. Morrow
Virology Award (\$100):	D. Govindarajan
Poster Award (\$100):	P.A. Olah

2003

Don Kahn Award (\$400):	R.J. Tibbetts
Bacteriology Award (\$200):	G. Vanier
Immunology Award (\$200):	E.L. Strait
Virology Award (\$200):	P. Billam
Poster Award (\$200):	A. Verma

2004

Don Kahn Award (\$400):	G. Landolt
In Vivo Award (\$200):	K.L. Pabilonia
In Vitro Award (\$200):	D.N. Atapattu
Molecular Award (\$200):	T.J. Johnson
Poster Award (\$200):	D.S. Metcalf

The following scientists have been recognized as Honorary Diplomates of ACVM for outstanding achievements throughout their illustrious careers.

2000: Edward J. Dubovi

2002: Robert P. Ellis

2004: Frank Blecha

2005: T.G. Nagaraja

B. Candidate education, qualification, and evaluation

1. Describe critical standards for admission to membership including:

a. Education, training, and experience.

The ACVM requires that candidates for certification be veterinarians. The general prerequisites that must be met for an applicant to be eligible to take the board examination in microbiology are as follows:

1) Must have graduated from a college or school of veterinary medicine accredited or approved by the American Veterinary Medical Association, or

have passed the National Board Examination in Veterinary Medicine, or possess an Educational Commission for Foreign Veterinary Graduates Certificate, or be legally qualified to practice veterinary medicine in some state, province, territory, or possession of the United States or Canada or other country.

- 2) Have satisfactory moral and ethical standing in the veterinary profession.
- 3) Must be sponsored by two Diplomates of the College.

To qualify as a candidate for the certifying examination, the candidate must demonstrate special education or training in the field of microbiology. Specific educational and experience requirements are described in the following two sections of the report.

b. Guidelines for approved routes for qualification.

The Standard Route. The candidate must have earned the Ph.D. degree with major emphasis in veterinary microbiology, completing a thesis in an area directly related to veterinary microbiology. The latter is defined as a knowledge and mastery of veterinary microbiology, which includes the disciplines of bacteriology, mycology, virology and immunology as they apply to veterinary medical science. The science of microorganisms includes knowledge of molecular biology, structure, function, propagation and biological and ecological relationships of microbes and prions with animals, plants, humans, other microbes and the environment. Immunology includes knowledge of the components and functions of host defense mechanisms in both antigen-specific and non-specific responses, and applications of immunological processes in laboratory assays. Veterinary medical science includes knowledge of the etiology, pathogenesis, transmission, immunity/resistance, diagnosis, therapeutics, prevention and control of diseases of animals and zoonotic diseases as applied in the practice of teaching, research, clinical veterinary medicine, comparative medicine, or public health. Therefore, knowledge of veterinary microbiology is not to be narrowly defined as related only to microbial agents of disease in non-human animals or the laboratory characteristics of microbes and is expected to include current literature and modern laboratory techniques.

The candidate will be expected to have a comprehensive knowledge in at least one of the subspecialties: Bacteriology/Mycology; Immunology or Virology.

Alternate Route 1. The candidate must have earned the Master's degree with a major emphasis in veterinary microbiology (as defined above), and have sufficient additional experience relevant to veterinary microbiology (as defined above) to equate with a candidate who has completed a Ph.D. degree. Experience relevant to veterinary microbiology may be obtained through teaching, research or service that concentrates on veterinary microbiology (as defined above). The experience should, in the opinion of the Examinations Committee, be sufficient to make the candidate proficient in the practice of veterinary microbiology (as defined above) and an expert in at least one of the subspecialties: bacteriology/mycology; immunology or virology. Examples of acceptable experience are: (i) full-time practice in a diagnostic laboratory run by a university, state, or commercial organization; or (ii) full-time practice in research in a university, state, not-for-profit, federal or commercial organization; or (iii) full-time teaching at the undergraduate (baccalaureate) and graduate levels in a university (most of the courses taught should be in veterinary microbiology; at least one course each year should be at the graduate level; and teaching at non-degree institutions does not qualify); or (iv) taking additional courses directly related to veterinary microbiology (as defined above) and obtaining at least a "B" average or "Pass"; or (v) any combination of the above.

Alternate Route 2. Subsequent to earning the DVM, VMD, or equivalent professional degree, the candidate must have sufficient professional experience (as defined under Alternate Route 1) relevant to veterinary microbiology (as defined above) with increasing responsibility over this time period to equate with a candidate who qualifies by the Standard Route.

- c. A summary of deficiencies in credentials that have led to failure to qualify for examination.

Of the 53 candidates over the past six years only two were denied access to the certification process. These candidates applied under Alternate Route 1 and lacked appropriate full-time experience to equate to the Standard Route (as ruled by the Examinations Committee and the Board of Governors).

- d. How unsuccessful candidates are advised of deficiencies.

Candidates are informed of their deficiencies in writing.

- e. The time limit for notifying candidates of acceptance or denial of credentials required for examination.

Credentials of the applicants to take the general veterinary microbiology (Part I) qualifying examination and the subspecialty (Part II) certifying examinations are evaluated by the Examination Committee and the final decision is made by the ACVM Board of Governors prior to or at its July meeting at the annual meeting of the AVMA. Written notification of the Board's decision is sent to each applicant within 10 days of the board decision.

- f. Other guidelines used to assess candidate qualifications.

Sponsorship of the applicant by two ACVM Diplomates is required. The opinion of these referees is considered with respect to the appropriateness of experience and training of the candidate and to encourage mentoring of the candidate.

- 2. Describe the educational programs available to potential candidates and indicate how these activities are supported and encouraged by the specialty organization.

The ACVM recognizes graduate programs in microbiology offered by a wide variety of colleges and universities. Previously, a survey of universities graduating M.S. or Ph.D. microbiologists was made. Of 205 microbiology positions listed, 137 were filled with veterinarians and 25 vacant positions were identified. The current situation is expected to be essentially similar.

- 3. Examination Procedures and Policies

- a. Describe the nature and scope of the examination(s).

The examination for certification as a Diplomate of the American College of Veterinary Microbiologists consists of two parts. A general veterinary microbiology (Part I) written examination and a subspecialty (Part II) written examination. The general veterinary microbiology (Part I) examination is designed to test the knowledge of the examinee in the broad field of veterinary microbiology. The 240 multiple choice questions must be completed in four (4) hours and are prepared from information contained in current published literature and in textbooks. The general veterinary microbiology (Part I) examination is on: bacteriology (30%); virology

(30%); immunology (30%); mycology (5%) and molecular biology/technology (5%). This is the examination “**blueprint.**” The examinee is expected to be knowledgeable about zoonotic diseases and the pathogenesis of infectious diseases of animals. The pass mark for the general veterinary microbiology (Part I) examination is 60%.

There are three subspecialties in the subspecialty (Part II) examination: bacteriology/mycology; immunology; and virology. Each subspecialty (Part II) examination consists of 100 questions and each question is based on a series of projected slides. A maximum of three slides per question is used. Adequate time is given for all candidates to complete each question before moving on to the next question. The examinee is required to recognize, interpret, and/or analyze the material presented. The subject matter includes various facets of veterinary microbiology. The pass mark for each subspecialty (Part II) examination is 75%.

The subspecialty (Part II) questions have been digitized and all images are stored in digital form on a master compact disc. The subspecialty (Part II) examinations are produced in presentation software and projected from a single projector and computer. This has reduced maintenance costs substantially. Preparing, transporting, administering and updating the examination has been simplified.

- b. Describe how you ensure that examination questions reflect the professional activities expected of Diplomates.

Test items are solicited from the general ACVM membership. After successfully completing the general veterinary microbiology examination (Part I) and a subspecialty examination (Part II), and before receiving the certificate, each candidate must prepare and submit to the Secretary-Treasurer a minimum of ten (10) questions, including five (5) questions with slides in their subspecialty. Examination question writing and review workshops by the Examinations Committee are done periodically but regular half-day reviews are done also in Chicago immediately after the general veterinary microbiology (Part I) and the subspecialty (Part II) examinations. This includes a review of the questions used in the general veterinary microbiology (Part I) and the subspecialty (Part II) examinations of that year. The test item bank is maintained by the Examinations Committee and is stored at the University of Missouri, Colombia, Missouri.

The Examinations Committee members serve three-year terms and may not serve longer than two consecutive terms. Three members serve in each specialty area and three to five others are co-opted as needed for question-writing workshops. These provisions assure accumulation of test questions and participation in the examination process by a broad spectrum of the membership. All items are reviewed for appropriateness and accuracy by the committee members. Each question also is evaluated independently by each committee member for the level of knowledge required to answer it. For this purpose the questions are rated in three categories: a. less than entry-level knowledge; b. at entry-level knowledge; and c. more specialized than entry level for board certification. Questions at the two ends of the spectrum are removed from the bank. Any outdated items are deleted. Following completion of the examination, the newly elected Diplomates are invited to critique the procedure. A statistical item analysis is done on the results of the general veterinary microbiology (Part I) examination and questions that do not perform as expected (i.e. have poor difficulty or discrimination indices) are identified. The committee pays special attention to a question’s ability to discriminate in both examinations. These, plus any inappropriate items identified after review are deleted from the question data bank.

The Examinations Committee is made up by Diplomates with a wide variety of specializations. Only a portion (usually no more than 10%) of the questions in the question data bank are changed from one year to the next. However, each examination is a selection of questions from the database to fit the blueprint.

The stature and varied expertise of committee members and the extensive review processes assure that questions are reflective of the competence and knowledge expected of Diplomates. Fewer than 20% of the questions in the data bank are new and untested in any one year, the difficulty of the examination does not change substantially from year to year.

- c. Describe how examination questions are developed, reviewed, graded, and evaluated.

The procedure for item development is described in the above section. The following schedule is used to develop the examination.

General Veterinary Microbiology (Part I) Examination. Early in the calendar year new questions are added to the data bank. A printout of the data bank is prepared categorizing questions into the various groups (bacteriology/mycology, immunology, virology, molecular biology/technology). Copies of sets of questions appropriate for each Examinations Committee member's area of specialization are forwarded for review, updating and selection. Criteria used for question selection are that the ratio for bacteriology, immunology, virology, mycology and molecular biology/technology is 30:30:30:5:5, respectively.

In July the Chairman of the Examinations Committee collates the questions submitted by each subspecialty group of the committee. The Chair ensures that the blueprint is followed. The Chair of the committee codes the examinations by candidate. The examination is administered on the Friday preceding the Conference of Research Workers in Animal Diseases annual meeting, which is usually held in November in Chicago, Illinois. Each candidate sits the examination under the supervision of a monitor, who must be a member of the Examinations Committee. The monitor returns a signed security statement, examination book and answer sheets to the Examination Committee Chair.

The answer sheets are graded and decoded by the Examination Committee Chair and scores are sent to the Secretary-Treasurer for notification of candidates. Item analysis is done on a computer program by the Chair and added to the data file.

Subspecialty (Part II) Examination. Projection slides and questions used for the subspecialty (Part II) examination are developed by the relevant subcommittees of the Examinations Committee. As mentioned earlier, this examination utilizes presentation software and is projected from a single projector and computer. The examination is given in Chicago on the Saturday preceding the Conference of Research Workers in Animal Diseases annual meeting. The examinees are assigned numbers prior to the examination. The examination is administered by the committee members, who score and check the answer sheets at the completion of the test. The committee then reviews the performance of the candidates and prepares a report listing the performance of each, recommending which should be judged as having passed or failed the examination, based on their test scores. The ACVM Board of Governors meets the following day (Sunday) and reviews the Examinations Committee report and makes the final decision with respect to the candidates' eligibility for election to the ACVM as Diplomates.

- d. Indicate whether and how consultative resources are used.

Consultative resources are not used by the American College of Veterinary Microbiologists for administration of examinations. The ACVM is of the opinion that the examination is functioning well and that all qualified and prepared microbiologists readily become certified by the process. See discussion on why candidates fail.

- e. Describe the procedure used for establishing the pass point.

The pass mark has been set by the Board of Governors; it is 60% for the general veterinary microbiology (Part I) examination and 75% for the subspecialty (Part II) examination for each subspecialty.

- f. Document the pass/fail experience of candidates with the examination, showing the past ten years of experience.

The rate by which candidates were credentialed for the past 6 years (2000 to 2005) was 96% (51 of 53). For the past six years the performance of candidates taking the general veterinary microbiology (Part I) examination is as follows (see also the annual report): Of 51 candidates that were credentialed, 27 (53%) sat for the general veterinary microbiology (Part I) examination and 19 (70%) passed. The class of 2005 has not yet sat for the general veterinary microbiology (Part I) examination or the subspecialty (Part II) examinations at the time of this report.

Of the 19 candidates that passed the general veterinary microbiology (Part I) examination, for the five years from 2000 to 2004, 13 (68%) passed at least one subspecialty of the Part II (certifying) examination. These 13 Diplomates were certified in 14 subspecialties. The overall rate of candidates (22) that presented themselves for an examination being certified as Diplomates was 59%. The overall rate of subspecialty certification by 22 Diplomates that presented themselves for an examination was 64%.

The figures for the previous five years (1995 to 1999) were as follows: Of the 23 candidates that passed the general veterinary microbiology (Part I) examination, for the five years from 1995 to 1999, 20 (87%) passed at least one subspecialty of the Part II (certifying) examination. These 20 Diplomates were certified in 27 subspecialties. The overall rate of candidates (43) that presented themselves for an examination being certified as Diplomates was 47%. The overall rate of subspecialty certification by 43 Diplomates that presented themselves for an examination was 63%.

- g. List the primary reasons candidates fail.

A primary reason is that credentialed candidates choose not to sit for the examination. Many reasons are given; moving, new jobs, new assignments, family issues and other personal reasons.

It is the opinion of ACVM that candidates generally fail because of lack of mastery of the subject matter. Candidate performance for the years 1995 to 2000 was evaluated. For the general veterinary microbiology (Part I) examination, 19 of 25 (76%) from AVMA-accredited schools passed on the first attempt, whereas only 4 of 15 (27%) from non-accredited schools passed on the first attempt. Of the candidates that passed the general veterinary microbiology (Part I) examination (1995 to 1999), one of six scoring 60 to 65% passed the subspecialty (Part II) examination, whereas four of four scoring 66 to 70% and 12 of 13 scoring over 70% passed a subspecialty

(Part II) examination on the first attempt. Similarly, candidate performance for the years 2000 to 2004 was evaluated. For the general veterinary microbiology (Part I) examination, 11 of 15 (73%) from AVMA-accredited schools passed on the first attempt, whereas only 4 of 8 (50%) from non-accredited schools passed on the first attempt. Of the candidates that passed the general veterinary microbiology (Part I) examination (2000 to 2004), three of six scoring 60 to 65% passed the subspecialty (Part II) examination, whereas one of four scoring 66 to 70% and 9 of 9 scoring over 70% passed a subspecialty (Part II) examination on the first attempt.

- h. List the time limit (in days) for reporting scores to candidates after the examination is administered.

The general veterinary microbiology (Part I) examination is given the Friday preceding the Conference of Research Workers in Animal Diseases annual meeting, which is usually held in November in Chicago, Illinois and candidates are advised in writing of the results on Sunday preceding the Conference of Research Workers in Animal Diseases annual meeting after approval of the results by the ACVM Board (maximum of 2 to 5 days). All notices are hand delivered or mailed on the same day. The results of the subspecialty (Part II) examination are distributed in writing to the candidates on the day after the test is administered, which is the Sunday preceding the Conference of Research Workers in Animal Diseases annual meeting after approval of the results by the ACVM Board. All notices are mailed on the same day.

- i. If you use oral examinations, describe how they are structured and evaluated, and how you strive to maintain fairness and avoid personality conflicts.

The ACVM does not administer oral examinations.

- j. Describe how unsuccessful candidates are advised of deficiencies on examination.

The candidate receives written notification of his or her performance on each examination. Those that fail are given their score in each of the examinations. In addition, candidates that failed the general veterinary microbiology (Part I) examination are given their scores for each of the areas outlined in the blueprint (i.e. their scores in the bacteriology, immunology, virology, mycology and molecular biology/technology portions of the examination). The subspecialty (Part II) examination consists of three subspecialty examinations, each of which is considered relatively homogeneous and not broken down into specific subcategories. Failing candidates receive their scores for each of the subspecialty certifying examinations they participate in.

- k. Describe other relevant aspects of your testing program.

It is the opinion of ACVM that the difficulty of the examination is consistent from year to year (i.e. there is very little variation in overall difficulty). However, the questions in the examination change substantially from year to year, particularly for the general veterinary microbiology (Part I) examination. The quality of the examination is high because at least three Diplomates, and usually six to eight Diplomates, review questions before they are included in the examination.

4. Appeal Procedures

- a. Include the formal appeal procedure used for candidates who receive adverse decisions.

The recommended ABVS appeal procedure is part of the constitution and the application form. It reads as follows:

You have the right to appeal a decision by the ACVM for denial of eligibility for Board examination, or denial of certification. The Secretary-Treasurer will advise you of an adverse decision within thirty (30) days. You must adhere to the following appeal procedures:

Grounds for reconsideration:

You may petition for reconsideration or review of the decision of the ACVM on the grounds that the ACVM ruled erroneously by:

- (a) disregarding the established ACVM criteria for certification; or
- (b) failing to follow its stated procedures; or
- (c) failing to consider relevant evidence and documentation presented.

Petition for reconsideration:

(a) You may, at your option, petition the Board of Governors of the ACVM to reconsider its decision by filing with the Secretary-Treasurer of the ACVM a written petition for reconsideration which must include a statement of the grounds for reconsideration and documentation, if any, in support of the petition.

(b) Such petition must be received in the Secretary-Treasurer's office within 90 days of the date on which the ACVM announced its adverse decision.

(c) You may, at the discretion of the Board of Governors of the ACVM, be invited to appear at their next regular meeting. The cost of your travel, food and lodging must be borne by you.

(d) The Board of Governors of the ACVM will meet in executive session to reach a final decision. This decision will be sent in writing by mail to you not more than thirty (30) days after this final decision is made.

(e) Upon completion of steps (a) through (d) above, if you are not satisfied with the final decision, you may request mediation by the AVMA American Board of Veterinary Specialties (ABVS).

(f) The Chair of ABVS will call a meeting of the parties in dispute or their representatives. The meeting will be held at AVMA headquarters and will be chaired by the ABVS representative. The parties in dispute will be guided to seek equitable solutions. The ACVM and you will each pay the expenses of the meeting including travel, food, and lodging expenses of the representative of ABVS.

(g) The role of ABVS is advisory only; final authority rests with the Board of Governors, ACVM.

- b. Include a complete application packet as it is sent to prospective Diplomates.

Prospective candidates are given the option to receive an application package by mail or to down-load application forms and application information from the ACVM web site (www.vetmed.iastate.edu/acvm). Most candidates now prefer the latter. The application packet consists of a cover letter, a candidate guide (procedures for certification) and an application form:

COVER LETTER:

Dear

Thank you for your inquiry about the American College of Veterinary Microbiologists. Enclosed find information on the background and procedures for certification and a study guide. Also enclosed is an application form. Please note that (a) your application, (b) the letters from the two sponsors and (c) your application fee (\$50 in the form of a postal order in U.S. currency or a check drawn on a U.S. bank and made payable to "ACVM") is due in my office by April 30th of the year you wish to take the exam.

I congratulate you on looking into ways of improving your qualifications and I encourage you to proceed with the certification program.

If you need additional information, please contact me by mail or by telephone at (913) 894-0230.

Sincerely

Chris Hayhow, DVM, Ph.D.
ACVM Secretary-Treasurer

CANDIDATE GUIDE FOR EXAMINATION:

PROCEDURES FOR CERTIFICATION

REQUIREMENTS FOR EXAMINATION

To qualify as a candidate for the ACVM Board Examination, an applicant must:

1. have satisfactory moral and ethical standing in the veterinary profession;
2. have a D.V.M. or equivalent degree from a veterinary school or college accredited or approved by the American Veterinary Medical Association, or provide evidence of having successfully completed the examination administered by the American Veterinary Medical Association Commission for Foreign Veterinary Graduates, or have passed the National Board Examination in Veterinary Medicine, or be qualified to practice veterinary medicine in some state, province, territory or possession of the United States or Canada or some other country;
3. be sponsored by two Diplomates of the College.

In addition to having earned the D.V.M. degree, the candidate must satisfy one of the following requirements:

Standard Route. The candidate must have earned the Ph.D. degree with major emphasis in veterinary microbiology completing a thesis in an area directly related to veterinary microbiology. The latter is defined as a knowledge and mastery of veterinary microbiology, which includes the disciplines of bacteriology, mycology, virology and immunology as they apply to veterinary medical science. The science of microorganisms includes knowledge of molecular biology, structure, function, propagation and biological and ecological relationships of microbes and prions with animals, plants, humans, other microbes and the environment. Immunology includes knowledge of the components and functions of host defense mechanisms in both antigen-specific and non-specific responses, and applications of immunological processes in laboratory assays. Veterinary medical science includes knowledge of the etiology, pathogenesis, transmission, immunity/resistance, diagnosis, therapeutics, prevention and control of diseases of animals and zoonotic diseases as applied in the practice of teaching, research, clinical veterinary medicine, comparative medicine, or public health. Therefore, knowledge of veterinary microbiology is not to be narrowly defined as related only to microbial agents of disease in non-human animals or the laboratory characteristics of microbes. A major

emphasis in veterinary microbiology means that in over half of the number of course credits for the degree (i) the candidate received a grade of at least a "B average" or a "Pass," and (ii) the courses which were graded at least a "B average" or a "Pass" were in subjects that, in the opinion of the Examinations Committee, were directly related to veterinary microbiology. Veterinary microbiology includes veterinary bacteriology, mycology, immunology, and virology, and (iii) the thesis was in an area directly related to veterinary microbiology (as defined above). The learning experience for a candidate who has not taken courses must, in the opinion of the Examinations Committee, be equivalent to that required above as determined by a review of the applicant's description of the learning experience.

The candidate will be expected to have a comprehensive knowledge in at least one of the subspecialties: Bacteriology/Mycology; Immunology or Virology.

Alternate Route 1. The candidate must have earned the Master's degree with major emphasis in veterinary microbiology (as defined in 4b above), and have sufficient additional experience relevant to veterinary microbiology (as defined in 4b above) to equate with a candidate who has completed a Ph.D. degree. Experience relevant to veterinary microbiology may be obtained through teaching, research or service that concentrates on veterinary microbiology (as defined in 4b above). The experience should, in the opinion of the Examinations Committee, be sufficient to make the candidate proficient in the practice of veterinary microbiology (as defined in 4b above) and an expert in at least one of the subspecialties: bacteriology/mycology; immunology or virology. Examples of acceptable experience are: (i) full-time practice in a diagnostic laboratory run by a university, state, or commercial organization; or (ii) full-time practice in research in a university, state, not-for-profit, federal or commercial organization; or (iii) full-time teaching at the undergraduate (baccalaureate) and graduate levels in a university (most of the courses taught should be in veterinary microbiology; at least one course each year should be at the graduate level; and teaching at non-degree institutions does not qualify); or (iv) taking additional courses directly related to veterinary microbiology (as defined in 4b above) and obtaining at least a "B" average or "Pass"; or (v) any combination of the above.

Alternate Route 2. Subsequent to earning the DVM, VMD, or equivalent professional degree, the candidate must have sufficient professional experience (as defined under Alternate Route 1) relevant to veterinary microbiology (as defined in 4b above) with increasing responsibility over this period to equate with a candidate who qualifies by the Standard Route.

The applicant shall submit to the Board complete and full details of qualifications, including a list of all publications and any other evidences of professional experience, competence and achievements as a veterinary microbiologist.

A candidate for Diplomate status must have capabilities extending over the broad area encompassed by microbiology as applied to veterinary medical science. A candidate must be well informed in bacteriology, mycology, virology and immunology, and must be qualified to assume responsibility for the basic and/or applied aspects of veterinary microbiology in research and teaching, or clinical and diagnostic microbiology. A candidate must have knowledge of infectious diseases (including the zoonoses) of animals with emphasis in etiology, pathogenesis, transmission, immunity, diagnosis, prevention and control, and is expected to know current literature and modern laboratory techniques.

EXAMINATION PROCESS

The Board of Examination in Veterinary Microbiology consists of two (2) parts; namely, a general veterinary microbiology (Part I) qualifying examination and a certifying subspecialty (Part II) examination. The general veterinary microbiology (Part I) qualifying examination includes: (a) material of a fundamental or general nature in bacteriology, mycology, virology, immunology and serology, and (b) material of an applied or specialized nature pertinent or applicable to veterinary microbiology, including ecological relationships relating to animal and human exposure and methods of prevention and control. The general veterinary microbiology (Part I) examination consists of 240 multiple choice questions and must be completed in four (4) hours. The "blueprint" for the general veterinary microbiology (Part I) qualifying examination is: bacteriology (30%); virology (30%); immunology (30%), mycology (5%) and molecular biology/technology (5%). The pass mark for

the general veterinary microbiology (Part I) examination is 60%. The general veterinary microbiology (Part I) examination is administered in November on the Friday preceding the Conference of Research Workers in Animal Diseases (CRWAD) meeting at the location of meeting.

The subspecialty (Part II) examination is offered in three areas: (a) Bacteriology and Mycology, (b) Virology, and (c) Immunology. The examination includes material of (a) a fundamental or generalized nature, including molecular biology, biochemistry and history; and (b) an applied and specialized nature pertinent or applicable to the subspecialty area. The subspecialty certifying examination is an advanced-level and practical examination utilizing visual aids and involving both a test of theoretical knowledge and an ability to solve problems. A candidate is asked to recognize, interpret and analyze the material presented, as if in a real world, clinical/diagnostic/research situation. A candidate will be expected to interpret photographic slides (gross or microscopic lesions, cultures, diagnostic test results, tables etc.) to provide information necessary to answer the questions correctly. Questions are in a multiple choice format and each subspecialty examination consists of 100 questions. The pass mark for each subspecialty examination is 75%. The subspecialty (Part II) examination is administered in November on the Saturday preceding the Conference of Research Workers in Animal Diseases (CRWAD) meeting at the location of the meeting.

A candidate may sit one, two or all three of the subspecialty examinations. A candidate must pass at least one subspecialty examination and the general veterinary microbiology examination to be certified. A candidate may elect to take the examinations in any order within the 5-year period and is not required to pass the general veterinary microbiology examination before attempting the subspecialty examinations. A candidate will be certified in each subspecialty area for which competence is demonstrated. Candidates will be informed of the results during the CRWAD meeting and successful candidates will be received into membership as a Diplomate while at that meeting.

After successfully completing the general veterinary microbiology examination and a subspecialty examination and before receiving the certificate, each candidate must prepare and submit to the Secretary-Treasurer a minimum of ten (10) questions, including five (5) questions with slides, in their area of subspecialty. The questions and slides must meet a minimum standard, but are not graded. At the discretion of the Examinations Committee, suitable questions may be added to the question bank for future examinations. Certificates, mounted on plaques, will be mailed shortly after questions are provided for the examination bank.

A candidate has five (5) years (five consecutive examination periods) after the application is accepted to complete all phases of the examination successfully. A limit of two (2) attempts during one five year period will be granted for the general veterinary microbiology examination and two attempts for each subspecialty examination. Any candidate who has not successfully completed all phases of the examination within five years after application will be permitted to re-apply after a waiting period of one (1) year. Such candidates will be required to submit new applications and examination fees and must take the entire examination.

FEES AND APPLICATION PROCEDURE

Application for Examination. The deadline for the receipt by the Secretary-Treasurer of completed application forms, letters from two (2) sponsoring Diplomates of the ACVM (the sponsor need only indicate that the sponsor knows that the applicant is a microbiologist who is a serious candidate for examination and need not evaluate the candidate's ability to pass the examination) and the non-refundable fee of \$50 (in US currency payable to ACVM) is April 30th. You should receive an acknowledgment of receipt of your application from the Secretary-Treasurer. If you do not receive an acknowledgment within 3 weeks, please take the initiative and contact the Secretary-Treasurer. The applicant must arrange for the sponsors to send letters of recommendation to the Secretary-Treasurer. The application will be evaluated by the Examinations Committee.

Assuming satisfaction of the prerequisites, the Board of Governors, prior to or at the time of the annual meeting of the American Veterinary Medical Association (usually late in July) will approve the application for candidacy and you will be informed thereof within ten (10) days of the meeting. If you do not receive an acknowledgment within 3 weeks, please take the initiative and contact the Secretary-Treasurer.

Examinations. Approved candidates must declare the selection of examinations to be taken and submit the appropriate examination fees to the Secretary-Treasurer before August 31st. The general veterinary microbiology examination fee is \$75. The subspecialty examination fee is \$75 for each attempt of each subspecialty examination. A candidate may elect to take the examinations in any order within the 5-year period.

Pass Mark. The pass mark for the general veterinary microbiology (Part I) examination is 60% and for each of the subspecialty (Part II) examinations is 75%.

STUDY GUIDE

Nature of Examination. The comprehensive nature of the qualifying examination requires a thorough and systematic review of relevant materials. Some sort of structured study regime is strongly recommended. It must be individually tailored to suit the candidate's own specific needs.

Development of a Study Plan. It is suggested that the candidate devise a suitable study plan, which should include a timetable, with dates, for completion of each part of the plan. It is suggested by some that the study plan cover a two-year period. This is probably a realistic time frame. Others indicate that a shorter study period is sufficient. It is strongly recommended that time be set aside each and every day for some aspect of study. Candidates are free to contact Diplomates on any aspects of study. Candidates will find Diplomates most eager to help.

Subject Areas Covered. Subject areas covered in the general veterinary microbiology (Part I) and subspecialty (Part II) examinations include the following topics within each subspecialty area.

A. Bacteriology

1. Principles of animal bacteriology
 - Structure and morphology
 - Classification and nomenclature
 - Propagation, isolation, and identification
 - Pathogenesis of bacterial infections
 - Bacterial genetics
 - Molecular biology of bacteria and bacteriophages
 - Immunization, disinfectants, and chemotherapeutics
 - Bacterial-host interactions
2. Conduct and interpretation of laboratory procedures
 - Serology
 - Biochemical reactions
 - Antibiotic susceptibility testing
 - DNA/RNA manipulation
3. Bacterial diseases of domestic animals (including lab animals and fish)
 - Pathogenesis
 - Clinical presentation
 - Pathology
 - Diagnosis

B. Virology

1. Principles of animal virology
 - Structure and morphology
 - Classification and nomenclature
 - Cultivation and assay of viruses
 - Viral replication strategies
 - Pathogenesis of viral infections
 - Immunization, disinfectants and chemotherapeutics
2. Conduct and interpretation of laboratory procedures
 - Serology
 - Viral cytopathology
 - Electron microscopy
 - Immunohistochemistry
 - Pathology
 - Molecular detection methods, primarily for nucleic acid products
3. Viral diseases of domestic animals (including lab animals and fish)
 - Pathogenesis
 - Clinical presentation
 - Pathology
 - Diagnosis

C. Immunology

1. Basic cellular and molecular immunology
 - Ontogeny of the immune response
 - Genetics of the immune response
 - Histocompatibility
2. Cellular interactions in the immune system
 - Cytokines
3. Immunity to infectious agents
 - Bacterial
 - Viral
 - Mycotic
4. Clinical Immunology (pathogenesis, diagnosis, and treatment)
 - Autoimmunity
 - Hypersensitivities (types I-IV)
 - Immunodeficiency
5. Conduct and interpretation of laboratory procedures
 - Serology
 - Immunochemistry

- Assays for cell-mediated immunity
- Leukocyte function assays

EXAMINATION STUDY METHODS

Candidates are advised to review relevant and current veterinary medical curriculum notes, but are reminded that as specialty certification examinations, the expected level of preparation and knowledge is much higher than a review of veterinary medical curriculum. Candidates should plan to study advanced and graduate level information resources. Review particularly relevant subjects such as bacteriology, mycology, immunology, virology, infectious diseases, epidemiology, histology, pathology, therapeutics, statistics, and molecular biology and technology.

Review textbooks. There are many excellent and useful textbooks available. Pay particular attention to the most recent editions of the listed examples. The figures, diagrams and photographs in texts are particularly useful in preparing for the subspecialty (Part II) examination. The following are examples of some textbooks that will be helpful. The list is not all-inclusive, nor is it necessary to study all textbooks:

Veterinary Microbiology and Microbial Diseases, 2002, Quinn et al.

Essentials of Veterinary Microbiology, 5th ed., 1995, Carter et al.

Diagnostic Procedures in Veterinary Bacteriology and Mycology, 5th ed., 1990, Carter and Cole.

Immunology, 5th ed., 1998, Roitt et al.

Veterinary Immunology: An Introduction, 5th ed., 1997, Tizard and Kersey.

Basic and Clinical Immunology, 1997, Peakman et al.

Veterinary Virology, 3rd ed., 1999, Murphy et al.

Infectious Diseases of the Dog and Cat, 2nd ed., 1998, Greene.

Hsuing's Diagnostic Virology: As Illustrated by Light and Electron Microscopy, 4th ed., 1994, Fong et al.

Pathogenesis of Bacterial Infections in Animals, 2nd ed., 1993, Gyles and Thoen.

Virulence Mechanisms of Bacterial Pathogens, 3rd ed., 2000, Roth et al.

Microbial Diseases: A Veterinarian's Guide to Laboratory Diagnosis, 1993, Carter and Chengappa.

Veterinary Microbiology, 1999, Hirsh and Zee.

Advances in Veterinary Virology, 1990, Edwards.

Veterinary Mycology Laboratory Manual, 1998, Hungerford et al.

Clinical Veterinary Microbiology, 1994, Quinn et al.

ASM Manual of Clinical Microbiology, 7th ed., 1999, Murray et al.

Medically Important Fungi: A Guide to Identification, 4th ed., 2002, Larone.

Bacterial Pathogenesis: A Molecular Approach, 2nd ed., 2002, Salyers and Whitt.

Mims' Pathogenesis of Infectious Disease, 5th ed., 2001, Mims et al.

Sourcebook of Bacterial Protein Toxins, 2nd ed., 1999, Alouf and Freer.

Read current scientific literature. Read thoroughly and critically all journals you feel to be pertinent. This is a formidable, but not impossible task. Place greater emphasis on refereed journals. Figures and diagrams in journals are particularly useful for the subspecialty (Part II) examination.

Attend seminars, lectures, and courses. These are available through the AVMA, specialty interest groups, and national, state, and local groups. Good sources are veterinary schools, hospitals, and industry such as biologics manufacturers. Make a special effort to attend lectures or seminars given by ACVM Diplomates or sponsored by the ACVM. If you know you have a weak area, sign up for a course in that area. Many universities will allow faculty to "audit" a course without charge.

Participate in AVMA tutorials. The AVMA has prepared a variety of videotape, slide, and film presentations of specific infectious diseases which may be helpful. Join study groups. In some parts of the country, it will be possible to form study groups of 2 to 5 people. This system works well only for some.

Publish. Contribute to the literature. Reviews of the literature are fine learning tools and good publications require a good literature review.

INFORMATION SOURCES

Please keep this information as it outlines the entire examination process. If you wish to apply to take the examination, please print the application or request an application form from the Secretary-Treasurer. If you have questions please feel free to contact the Secretary-Treasurer, Dr. Chris Hayhow, 30705 West 84th Circle, DeSoto, Kansas 66018 or call (913)-894-0230, FAX (913)-894-0236, chayhow@biomunecompany.com.

7. List the names and addresses of two ACVM Diplomates, in good standing, who will sponsor you. Ask each of them to send the Secretary-Treasurer of the ACVM, by April 30, a letter supporting your eligibility to take the Board examination. (If you do not have a Ph.D. degree with courses, it is particularly important that the sponsors document the professional experiences and achievements that you consider equivalent to a Ph.D. degree.)

a) _____

b) _____

8. Appeal Procedures:

You have the right to appeal a decision by the ACVM for denial of eligibility for Board examination, or denial of certification. The Secretary-Treasurer will advise you of an adverse decision within thirty (30) days. You must adhere to the following appeal procedures:

(i) Grounds for reconsideration:

You may petition for reconsideration or review of the decision of the ACVM on the grounds that the ACVM ruled erroneously by:

- (a) disregarding the established ACVM criteria for certification; or
- (b) failing to follow its stated procedures; or
- (c) failing to consider relevant evidence and documentation presented.

(ii) Petition for reconsideration:

(a) You may, at your option, petition the Board of Governors of the ACVM to reconsider its decision by filing with the Secretary-Treasurer of the ACVM a written petition for reconsideration which must include a statement of the grounds for reconsideration and documentation, if any, in support of the petition.

(b) Such petition must be received in the Secretary-Treasurer's office within 90 days of the date on which the ACVM announced its adverse decision.

(c) You may, at the discretion of the Board of Governors of the ACVM, be invited to appear at their next regular meeting. The cost of your travel, food and lodging must be borne by you.

(d) The Board of Governors of the ACVM will meet in executive session to reach a final decision. This decision will be sent in writing by mail to you not more than thirty (30) days after this final decision is made.

(e) Upon completion of steps (a) through (d) above, if you are not satisfied with the final decision, you may request mediation by the AVMA American Board of Veterinary Specialties (ABVS).

(f) The Chair of ABVS will call a meeting of the parties in dispute or their representatives. The meeting will be held at AVMA headquarters and will be chaired by the ABVS representative. The parties in dispute will be guided to seek equitable solutions. The ACVM and you will each pay the expenses of the meeting including travel, food, and lodging expenses of the representative of ABVS.

(g) The role of ABVS is advisory only; final authority rests with the Board of Governors, ACVM.

9. Certification:

The information that I have supplied is, to the best of my knowledge, complete and accurate. I have read and understand the appeals procedure.

Your legal signature

Date

- c. Include up to three examples of correspondence to and from unsuccessful candidates or applicants.

September 21, 2001

Dear Dr _____

I regret to inform you that your score on the 2001 Part I qualifying examination of the American College of Veterinary Microbiologists fell below the 60% pass/fail cut-off point that was approved by the Board of Governors. Your score in Bacteriology was 43%, in Mycology 17%, in Virology 60%, in Immunology 60% and in Molecular Biology 67%. Your overall score was 53%.

My records indicate that you were approved to take the examination in 2000 and you therefore have until 2004 (five years) to complete all phases of the examination successfully. A limit of two (2) attempts during one five-year period will be granted for the Part I qualifying examination. Enclosed is a description of the appeals procedure that I am required to send you.

You are eligible to take the Part I examination again in September 2002 for an additional fee of \$75. If you wish to do so, please contact me by April 30, 2002.

Sincerely,

L.N.D. Potgieter
Secretary-Treasurer

September 21, 2001

Dear Dr _____

I regret to inform you that your score on the 2001 Part I qualifying examination of the American College of Veterinary Microbiologists fell below the 60% pass/fail cut-off point that was approved by the Board of Governors. Your score in Bacteriology was 36%, in Mycology 25%, in Virology 68%, in Immunology 50% and in Molecular Biology 58%. Your overall score was 50%.

A limit of two (2) attempts during one five-year period is allowed for the Part I qualifying examination, and my records indicate that you have now exhausted both attempts. You will be permitted to reapply to take the Part I examination again after a waiting period of one (1) year. You will be required to submit a new application, pay new examination fees, and take the entire examination. Enclosed is a description of the appeals procedure that I am required to send you.

If you wish to take the examination again, please contact me before April 30, 2003.

Sincerely,

L.N.D. Potgieter
Secretary-Treasurer

November 12, 2002

Dear Dr. _____

This is to confirm the examination results that I gave you on November 10, 2002 and to reconfirm your status. You took the Part II certifying examination in Chicago. I regret that you failed the Immunology and Virology subspecialty areas. Passing scores were 75%. You scored in the low 60s and 70s respectively. Enclosed please find a description of the appeal procedures which I am required to provide you.

Concerning your status. My records indicate that your application was accepted in 1999. You are eligible to retake the subspecialty areas that you failed or take another subspecialty area of the Part II examination in 2003 at a cost of \$75 per examination. You must complete all parts of the examination within 5 years of having been approved to take the examination. If you wish to take the examination next year, please contact me by August 31, 2003. I strongly encourage you to take the examinations again.

If my records are not correct, or if you have any questions, please feel free to contact me at the above address.

Sincerely,

K.V. Brock, DVM, Ph.D.
Secretary-Treasurer

November 14, 2004

Dear Dr_____.

You took the Part II certifying exam in Chicago. I am pleased to inform you that you passed the Virology subspecialty area, but I regret that you failed the Immunology subspecialty area. The passing score was 75% and you scored in the 60's for Immunology. Congratulations on passing the Virology Subspecialty. You are now considered a Diplomate of the American College of Veterinary Microbiologists certified in Virology.

Concerning your status. My records indicate that your application was approved in 2003. You are eligible to take another subspecialty area of the Part II examination in 2005 at a cost of \$75 per examination. You must complete all attempts within five years of having been approved to take the examination. PLEASE NOTE: If you wish to take another subspecialty examination, you must not participate in any way in the examination process for that subspecialty (you cannot be a member of the Examinations Committee nor can you submit questions to or participate in the writing of any questions for that subspecialty). You can, and must, however, provide questions for the subspecialty, which you passed. Also, you cannot attend the Board of Governors meetings at which examination questions or results of examinations you took are discussed. If you wish to take the examination next year, please contact me by August 31, 2005. If my records are incorrect or if you have any questions, please feel free to contact me.

If you have access to the Internet, you may obtain a copy of the ACVM Diplomate Directory and a form for you to complete (www.vetmed.iastate.edu/acvm). Please type your name carefully on the form in the same way that you want it to appear on the certificate. Please complete the rest of the form so that I can enter the information in the directory. Return it to me as soon as possible.

Before I can send you your certificate, you must submit five questions for the Part II examination to the Chair of the Examination Committee. These questions are for future examinations and may be added to the ACVM database of questions. They should consist of 1-3 slides with multiple choice questions in the format of those in the Part II examination (a premise, one answer, and 4 detractors) in any subject matter area you choose relevant to microbiology. A description of the slides should be provided. If you cannot provide slides, please provide a drawing, picture, print, table, or other visual that can be converted to slides by the ACVM. With the questions you must submit a citation page in a published paper or book (textbook that verifies the correct answer to the question). You may submit more than five questions if you wish.

Please send the slides and a copy of the original questions to Dr. Steven Kleiboeker, Assistant Professor, Department of Veterinary Pathobiology, Veterinary Medical Diagnostic Laboratory, College of Veterinary Medicine, University of Missouri, Columbia, Missouri 65211.

Once again, congratulations and thank you in advance for providing new questions for the examination process.

Sincerely,

Chris Hayhow, DVM, Ph.D.
ACVM Secretary-Treasurer

June 30, 2005

Dear Dr.

Your application for certification by examination of the American College of Veterinary Microbiologists (ACVM) has been reviewed by the ACVM Examinations Committee. The recommendation of the Examinations Committee was not to approve the application at this time due to lack of experience equivalent to that of a Ph.D. The ACVM Board of Governors voted to support this recommendation.

Based on your strong science background we strongly encourage you to reapply for certification after completion of your Ph.D. program. If you submit a new application with the new degree information I am confident your application will be favorably considered by the ACVM Examinations Committee.

Thank you for your interest in ACVM and we look forward to your application for consideration for examination for 2006!

If you have any questions or comments please contact me at 913-894-0230 or chayhow@biomunecompany.com.

Sincerely,

Chris Hayhow, DVM, Ph.D.
ACVM Secretary-Treasurer

- d. Describe any procedures for recertification of Diplomates.

The American College of Veterinary Microbiologists does not have a formal recertification program. It encourages continuing education at workshops, scientific meetings and symposia.

- e. Describe any procedures and policies pertaining to subspecialization and the number of diplomats within a subspecialty.

As previously described, the ACVM offers subspecialty certification. The subspecialty (Part II) examination is offered in three areas: (a) Bacteriology and Mycology, (b) Virology, and (c) Immunology. The examination includes material of (a) a fundamental or generalized nature, including molecular biology, biochemistry and history; and (b) an applied and specialized nature pertinent or applicable to the subspecialty area. The subspecialty certifying examination is an advanced-level and practical examination utilizing visual aids and involving both a test of theoretical knowledge and an ability to solve problems. A candidate is asked to recognize, interpret and analyze the material presented, as if in a real world, clinical/diagnostic/research situation. A candidate will be expected to interpret photographic slides (gross or microscopic lesions, cultures, diagnostic test results, tables etc.) to provide information necessary to answer the questions correctly. Questions are in a multiple choice format and each subspecialty examination consists of 100 questions. The pass mark for each subspecialty examination is 75%. The subspecialty (Part II) examination is administered in November on the Saturday preceding the Conference of Research Workers in Animal Diseases (CRWAD) meeting at the location of the meeting.

A candidate may sit one, two or all three of the subspecialty examinations. A candidate must pass at least one subspecialty examination and the general veterinary microbiology examination to be certified. A candidate may elect to take the examinations in any order within the 5-year period and is not required to pass the general veterinary microbiology examination before attempting the subspecialty examinations. A candidate will be certified in each subspecialty area for which competence is demonstrated. Candidates will be informed of the results during the CRWAD meeting and successful candidates will be received into membership as a Diplomate while at that meeting.

Prior to 1987, after completion of the certification (Part II) examination, Diplomates were certified as Microbiologists. Subsequently, subspecialty examinations in (a) Bacteriology/Mycology, (b) Virology, and (c) Immunology were implemented. Currently, the number of Diplomates in each subspecialty is as follows.

Microbiology:	84
Virology:	47
Bacteriology/Mycology:	33
Immunology:	43

- f. Statement concerning incorporation and liability insurance.

The American College of Veterinary Microbiologists was incorporated under the laws of the State of Illinois as a nonprofit educational organization in 1966. The term for which it is organized shall be perpetual. However, in the event of dissolution of the Corporation, its property shall be distributed for educational purposes.

The ACVM has registered with the IRS and has an IRS number. In 1991, tax exempt status was received under section 501(c)(3). After the initial filing of a tax return, filing is not necessary until cash flow reaches \$25,000.

Liability insurance was terminated in 1986 because of cost. Officers do not now carry liability insurance.

g. Current employment distribution of Diplomates.

There are 281 Diplomates of which 87 have emeritus status and 34 are honorary Diplomates. Of the 160 active Diplomates, 106 are in academia, 17 are in industry, 28 have government positions and 9 are in practice (one is in private practice). The great majority are involved in academic veterinary medicine and most are in Colleges or Schools of Veterinary Medicine.

h. Major changes in concepts or policies in the last five years.

The basic concepts of the ACVM are embodied in the objectives of the ACVM and contained in Article III of the Constitution. There have been no major changes in these objectives. The following changes have been made over the past 5 years.

2001: Changed the Constitution and the By-laws to allow for election of a President and a Vice President rather than a Chair and Vice Chair of the Board of Governors.

2002: Revised the Constitution to clarify the information concerning the examinations.

2003: Revised the Constitution to address minor editorial comments made in 2001 and 2002.

2004: None

2005: Revised the By-laws to clarify when an elected officer takes office and the committee duties.

i. Problems perceived and proposed solutions.

The major problem facing the specialty lies in our failure to provide sufficient numbers of certified veterinary microbiologists to meet the needs of our profession. Few veterinarians meet the academic standards (i.e. D.V.M. and Ph.D.) and many choose not to seek Diplomate status. Employers cannot, therefore, always hold out for Diplomate candidates even though they may prefer to include board certification as a prerequisite. We have taken some steps to remedy the situation for the continuing welfare of the specialty and the profession. They include the establishment of subspecialties for the facilitation of credentialing (e.g. removing the publication requirement). However, a substantial obstacle is that stipends for veterinary graduate students have not kept pace with the starting salary veterinarians receive going into private practice. This gap has increased dramatically over the past ten (10) years. Unlike clinical specialties, ACVM is in competition in this regard with non-veterinarians. However, we must improve delivery of the message that the veterinary microbiologist has a unique and broad expertise in the fields of host resistance, pathogenesis and immunology. Diplomates will find a wide and challenging career and will have an excellent opportunity to serve the veterinary profession and animal industry in general.

Previously, an ad hoc Long Range Planning Committee surveyed the membership. Prestige among peers was the highest ranked benefit of board certification in ACVM. Benefits such as job opportunities and compensation were ranked slightly below midpoint on the scale. Therefore, the financial incentive for board certification does not seem to be substantial. Perhaps as a consequence, ACVM has been considering the development of an additional subspecialty, Infectious Diseases. It is envisaged that it would be more clinically orientated than the other subspecialties now in existence.

In 2004, we elected a President of the Board of Governors for a two (2) year term. We anticipate that this will help ensure continuity of leadership, establish clearer vision and provide for the orderly implementation of ACVM'S goals and objectives.

j. Describe any activities outside the scope of the stated objectives of the specialty, including contracts or agreements.

None

k. Future plans.

To develop an ACVM Biosecurity Task Force to assist local, state, and federal officials in prevention of, response to, and recovery from infectious diseases, which threaten food security or public health. Efforts were initiated during 2005 to achieve this objective.

To recognize an Outstanding Veterinary Microbiologist each year with an award and sponsor a presentation at a meeting for the individual selected to talk about their research achievements.

To consider the development of an Infectious Diseases subspecialty, perhaps in a collaborative effort with Internal Medicine or other Veterinary Specialty Organization.

To promote our specialty to encourage more prospective candidates to sit for the examinations

l. Reactions of the profession and the public to the specialty organization.

Although ACVM faces an educational and marketing challenge, it appears to be well received by the profession and public.

m. Financial report.

American College of Veterinary Microbiologists
Financial Report
July 1, 2004 – June 30, 2005

ASSETS

Checking Account	17,433.52
Certificates (2) of Deposit	<u>13,949.19</u>
TOTAL ASSETS	\$31,382.71

INCOME

Symposium Donations	2,5000.00
Banquet Fee	1,000.00
Examination Fees	800.00
Dues	<u>4,425.00</u>
TOTAL INCOME	\$8,725.00

EXPENSES

Bank Fees	6.00
New Checks	86.63
Awards (Graduate Students)	141.75
Registration Fee (Illinois)	8.00
ACVM Certificates	342.25
Printing	222.06
Postage	242.16
UPS shipping	70.56
Banquet deposit	200.00
AAVLD sponsorship	375.00
TOTAL EXPENSES	\$1,694.41*

*Please note that the income and expense columns include all items from November 2004 to June 30, 2005; however, previous items are not included due to the recent transfer of the Secretary-Treasurer position from Dr. Kenny Brock to Dr. Chris Hayhow.

- n. Copy of current constitution and/or bylaws, with indicated changes, if any, since the last annual report. A "clean" copy of the constitution and/or bylaws must also be provided for ABVS records.

Changes made to the Constitution and the Bylaws over the last five years are as follows (new text underlined and ~~deleted text marked through with overstrike~~):

2001:

Constitution, Article VI, Section 1, OFFICERS

The officers of this organization shall be a President Chair, a Vice President Chair and a Secretary-Treasurer. Officers shall be Diplomates of the College ~~and elected by the Board~~.

Constitution, Article VII, BOARD OF GOVERNORS

Section 1. The Board shall consist of ten (10) members, nine (9) of which shall be elected Diplomates as provided in Article VI of this Constitution, and a President who shall also be an elected Diplomate.

Section 3. The President shall be elected to no more than two (2) two-year terms as provided for in the By-Laws (Article 1, Section 1). The Board shall annually elect from its membership a ~~Chair~~ and Vice President ~~Chair~~. In addition, they shall also elect a Secretary-Treasurer as provided in the By-laws (Article I, Section 4). The immediate past President ~~Chair~~ shall continue for one year as an ex-officio member.

**By-Laws, Article 1, Sections 1, 2, 3, & 5
Section 1.**

Elected members of the board, ten (10) in number of which nine (9), shall be Diplomates elected by the membership of the College by secret ballot, each to serve a term of three (3) years. Tenure in office shall be such that three (3) members of the Board are replaced each year. Any member having been elected to one full term or to fill a vacancy in an uncompleted term may be elected for one (1) additional term. At the completion of this second term, the Board member cannot be re-elected until at least one (1) year absence from the Board.

The President of the Board of Governors shall be a Diplomate elected by the membership of the College by secret ballot, to serve a term of two (2) years. Any member having been elected to President for one full term or to fill a vacancy in an uncompleted term may be elected for one (1) additional term. At the completion of this second term, the President cannot be re-elected until at least one (1) year absence from the Board.

Section 2.

(1) Nomination for all vacancies on the Board and President of the Board shall be made by the Nominating Committee. The Nominating Committee shall present the names of at least two (2) candidates for each position to be filled on the Board and shall submit the list of recommendations to the Secretary-Treasurer by the 15th day of December following its appointment. The Secretary-Treasurer shall inform diplomates not later than the first day of January of the committee report. Additional nominations for office may be made by petition over the signature of three (3) Diplomates in good standing if the petition is received by the Secretary-Treasurer on or before the 15th day of February. A petition bearing the names of three (3) Diplomates may nominate only one (1) candidate to office. Nominations of other candidates will each require a similar petition.

Section 3.

(1) The Board shall elect annually from its membership a Vice President Chair. Nominations for Vice President Chair shall be made by a nominating committee comprised of the President retiring Chair of the Board of Governors and one other Diplomate not currently serving on the Board. Nominations will be announced to the College before the July meeting of the Board. Additional nominations by Board members may be made at the July Board meeting.

(2) The Vice ~~President Chair~~ in any year shall automatically assume ~~succeed~~ to the office of President Chair if the latter is unable or unwilling to complete a term in the subsequent year unless he or she is unavailable to serve. In that event both Chair and Vice Chair will be nominated and elected. New officers shall assume office at the close of the July Board meeting.

Section 5. Duties of the President Chair and Vice President Chair:

(1) The President Chair shall preside over all meetings of the College and meetings of the Board, shall be a member, ex-officio, of all committees and shall perform the usual duties of such office. The President Chair shall have no vote in the Board except in case of a tie, and no vote on committees in an ex-officio capacity. The President is expected, with the assistance of the board, to develop strategic plans for ACVM and to develop and implement strategies to achieve objectives.

(2) The Vice President Chair shall be an ex-officio member of all committees, shall preside at meetings in the absence of the President Chair, and shall succeed to the office of President Chair should that office be vacated. The Vice President Chair shall have no vote on a committee when serving in an ex-officio capacity.

2002: Revised Constitution, Article V.

Section 8. Examinations:

(4) The Board Examination in Veterinary Microbiology shall consist of two (2) parts; namely, a qualifying examination (Part I) general veterinary microbiology examination and a certifying (Part II) subspecialty examination.

(5) The Part I qualifying general veterinary microbiology examination shall include:

(6) ~~The Part I qualifying general veterinary microbiology examination shall be taken first. It may be administered by one the examiners or a member of the board of Governors or by a veterinarian employed by the American Veterinary Association at its Shaumburg or Washington, D.C. offices administered on the day preceding the specialty examinations.~~

(7) ~~The candidate must is not required to pass the Part I qualifying general veterinary microbiology examination before being eligible to sit the Part II qualifying a subspecialty examination.~~

(8) ~~The Part II certifying subspecialty examinations~~ shall be in three subspecialty areas; namely:

(9) The subspecialty examination will include material of:

(10) The Part II certifying subspecialty examination is a practical examination utilizing visual aids and involving both a test of theoretical knowledge and an ability to solve problems. The candidate is asked to recognize, interpret and analyze the material presented, as if in a real world situation.

(11) The candidate may sit on one, two or all three specialty examinations. The candidate must pass at least one specialty examination and the general veterinary microbiology examination to be certified. The candidate will be certified in each specialty area for which competence is demonstrated.

(14) The candidate shall have five (5) years (five consecutive examination periods) to complete all phases of the examination successfully. A limit of two (2) attempts during one five year period will be granted for the Part I qualifying general veterinary microbiology examination and two attempts for each subspecialty area in the subspecialty Part II certifying examination. Any candidate who has not successfully completed all phases of the examination within five years after application will be permitted to reapply after a waiting period of one (1) year. Such candidates will be required to submit a new application and examination fees. The applicant will be required to take the entire examination.

(15) No Diplomate of the College who is serving or has served on the Examinations Committee or has participated in examination question writing sessions may take any portion of the examination in order to become certified in an additional specialty area. Any other Diplomate of the College who wishes to become certified in an additional specialty area may take the Part II certifying subspecialty examination for that area if both Part I qualifying the general veterinary microbiology examination and Part II certifying the subspecialty examination will be completed within the same five (5) year period. If not, the Diplomate must pass the Part I qualifying general veterinary microbiology examination again, ~~before being eligible to take the Part II certifying~~ within the same five (5) year period of the subspecialty examination.

2003: Revised the Constitution, Article III

Section 5. To certify qualified and competent veterinary microbiologists in ~~subspecialty~~ specialty areas of bacteriology and mycology, virology, and immunology.

Article V, Requirements for Board Examination and Certification

Section 8. Examinations:

(4) The Board Examination in Veterinary Microbiology shall consist of two (2) parts; namely, a general veterinary microbiology examination and a ~~subspecialty~~ specialty examination.

(6) The general veterinary microbiology examination shall be administered on the day preceding the ~~subspecialty~~ specialty examinations.

(7) The candidate is not required to pass the general veterinary microbiology examination before being eligible to sit for a ~~subspecialty~~ specialty examination.

(8) The subspecialty examinations shall be in three ~~subspecialty~~ specialty areas; namely:

Section 9. Issuance of Certification:

(1) Certificates shall be in such form as shall be prescribed and approved by the Board, and shall be signed by the ~~President Chair~~ or ~~Vice President Chair~~ and by the Secretary of the American College of Veterinary Microbiologists, Inc., and shall have its seal affixed. Certificates shall be and remain the property of the American College of Veterinary Microbiologists, Inc., but each person to whom a Certificate shall be issued shall be entitled to its possession unless and until such certification shall be revoked.

Article VI. OFFICERS

Section 1. The officers of this organization shall be a President Chair, a Vice President Chair and a Secretary-Treasurer. Officers shall be Diplomates of the College ~~and elected by the Board.~~

2004: None

2005: Revised the By-Laws, Article I, Section 2

(6) Newly elected members of the Board shall take office during at the close of the July Board meeting ~~following their election.~~

Section 7.

(2) Shall create appropriate committees, appoint committee members and supervise their ~~report~~ activities.

CONSTITUTION

Article I. NAME

Section 1. The name of this organization shall be the American College of Veterinary Microbiologists (ACVM). It is referred to hereinafter as the College.

Article II. INCORPORATION

Section 1. The College is incorporated under the laws of the State of Illinois as a nonprofit educational organization. The term for which it is organized shall be perpetual. However, in the event of dissolution of the Corporation, its property shall be distributed for educational purposes within the meaning of Section 501 (C) (3) of the Internal Revenue Code.

Article III. OBJECTS

Section 1. To further educational and scientific progress in the specialty of veterinary microbiology.

Section 2. To strengthen and improve instruction at the pre- and postdoctoral level in veterinary microbiology.

Section 3. To promote the highest professional standing of veterinary microbiologists.

Section 4. To establish standards of postdoctoral training and experience for qualification of specialists in veterinary microbiology.

Section 5. To certify qualified and competent veterinary microbiologists in specialty areas of bacteriology and mycology, virology, and immunology.

Article IV. MEMBERSHIP

Section 1. The types of membership in this College shall be:

- (1) Diplomate
- (2) Emeritus Diplomate
- (3) Honorary Diplomate

Section 2. Qualification for membership:

- (1) Diplomate

(a) A veterinarian of good moral character who satisfactorily meets the training and experience requirements outlined hereinafter in Article V and who successfully completes the board examination shall be an eligible candidate.

(b) Election of the candidate shall be accomplished by a majority vote of the Board of Governors, hereinafter referred to as the Board.

- (2) Emeritus Diplomate

Any Diplomate, who because of age or disability has retired from active practice of this specialty may, with his consent, be designated Emeritus Diplomate by the Board.

- (3) Honorary Diplomate

(a) A microbiologist of good moral character who has had not less than ten (10) years experience in the specialty and who has achieved unquestioned eminence in Veterinary Microbiology may be nominated for

election as an Honorary Diplomate.

(b) Nomination and sponsorship are to be submitted to the Honorary Diplomate Nominating Committee. Nomination shall require the support of two (2) Diplomates in good standing. The Committee shall make an annual report to the Board, identifying qualified candidates and presenting biographical information about each.

(c) Upon receiving at least a 2/3 favorable vote of the Board, the nomination shall be submitted to the voting membership at the time of the regular election of Board members.

(d) Election requires a favorable vote by at least a 2/3 majority of the total ballots cast.

(e) The American College of Veterinary Microbiologists shall elect no more than one (1) Honorary Diplomate per year.

Section 3. Voting and Office Privileges:

(1) Voting

Only Diplomates in good standing and Emeritus Diplomates shall be eligible to vote.

(2) Office

Only Diplomates in good standing shall be eligible to hold office.

Article V. REQUIREMENTS FOR BOARD EXAMINATION AND CERTIFICATION

Section 1. The College shall fully endorse and actively support:

(1) The attainment and maintenance of the highest professional standards of competency and excellence in the certification of specialists in veterinary microbiology.

(2) The constant improvement of specialty training programs and training facilities.

(3) Improvement in the standards of excellence and competence of those veterinary microbiologists employed in departments of veterinary microbiology or related areas in schools or colleges of veterinary medicine, research institutions, veterinary medical diagnostic laboratories, and those other institutions where veterinary microbiological activities are conducted.

Section 2. The candidates for Diplomate status must have capabilities extending over the broad area encompassed by microbiology as applied to veterinary medical science. The candidate must be well informed in bacteriology, mycology, virology and immunology, and must be qualified to assume responsibility for the basic and/or applied aspects of veterinary microbiology in research and teaching, or clinical and diagnostic microbiology.

Section 3. The candidate shall have knowledge of and mastery of veterinary Microbiology, which includes the disciplines of bacteriology, mycology, virology and immunology as they apply to veterinary medical science. The science of microorganisms includes knowledge of the molecular biology, structure, function, propagation and biological and ecological relationships of microbes and prions with animals, plants, humans, other microbes and the environment. Immunology includes knowledge of the components and functions of host defense mechanisms in both antigen-specific and nonspecific responses, and applications of immunological processes in laboratory assays. Veterinary medical science includes knowledge of the etiology, pathogenesis, transmission, immunity/resistance, diagnosis, therapeutics, prevention and control of diseases of animals and zoonotic diseases as applied in the practice of teaching, research, clinical veterinary medicine, comparative medicine, or public health. Therefore, knowledge of veterinary microbiology is not to be narrowly defined as related only to microbial agents of disease in non-human animals or the laboratory characteristics of microbes and is expected to include current

literature and modern laboratory techniques.

Section 4. The candidate must have a comprehensive knowledge of at least one of the following subspecialties:

(1) Bacteriology and Mycology

(2) Virology

(3) Immunology

Section 5. General requirements for eligibility:

The following prerequisites must be met to the satisfaction of the Board before the applicant is determined eligible to take the Board Examination in Veterinary Microbiology:

(1) Have graduated from a college or school of veterinary medicine accredited or approved by the American Veterinary Medical Association, or possess an Educational Commission for Foreign Veterinary Graduates (ECFVG) Certificate, or be legally qualified to practice veterinary medicine in some state, province, territory, or possession of the United States or Canada or other country.

(2) Have satisfactory moral and ethical standing in the veterinary profession.

(3) Must be sponsored by two (2) Diplomates of the College.

Section 6. Academic training and experience requirements:

(1) In addition to having earned the DVM degree, the applicant must satisfy one of the following conditions:

(a) The Standard Route. Have earned the Ph.D. degree with major emphasis in veterinary microbiology and the thesis was in an area directly related to veterinary microbiology (as defined in Article V, Section 3).

(b) Alternate Route 1. Have earned the Master's degree with major emphasis in veterinary microbiology (as defined in Article V, Section 3) and have sufficient additional experience relevant to veterinary microbiology (as defined in Article V, Section 3) to equate with a candidate who has completed a Ph.D. Experience relevant to veterinary microbiology may be obtained through teaching, research or service that concentrates on veterinary microbiology (as defined in Article V, Section 3). The experience should, in the opinion of the Examinations Committee, be sufficient to make the candidate proficient in the practice of veterinary microbiology (as defined in Article V, Section 3) and an expert in at least one of the subspecialties: bacteriology/mycology, immunology, or virology. Examples of acceptable experience are: (i) full time practice in a diagnostic laboratory run by a university, state, or commercial organization; or (ii) full time practice in research in a university, state, not-for-profit, federal or commercial organization; or (iii) full time teaching at the undergraduate (baccalaureate) and graduate levels in a university (most of the courses taught should be in veterinary microbiology; at least one course each year should be at the graduate level; and teaching at non-degree institutions does not qualify.); or (iv) obtaining a grade of at least a "B average" or a "Pass" in courses which, in the opinion of the Examinations Committee were directly related to veterinary microbiology as described above, or (v) any combination of the above.

(c) Alternate Route 2. Subsequent to earning the DVM, VMD, or equivalent professional degree, have sufficient professional experience [as defined in Article V, Section 6 (1) (b)] relevant to veterinary microbiology (as defined in Article V, Section 3), with increasing responsibility over this time period to equate with a candidate who qualifies by the standard route.

(2) The applicant shall submit to the Board complete and full details of qualifications, including a list of all publications and any other evidences of professional experience, competence and achievements as a veterinary microbiologist.

Section 7. Method of application: (1) All applications shall be made on forms prescribed by the Board and shall be sent with all necessary documents to the Secretary-Treasurer.

(2) The application must be accompanied by a fee in a sum fixed by the Board.

3) Eligibility will be determined by the Board.

Section 8. Examinations:

(1) The Secretary-Treasurer shall notify the applicant of eligibility and when and where the examinations are to be held.

(2) Each applicant who has been found eligible to be examined pursuant to the provisions of this Article shall, if required by the Board, appear in person at a meeting of the Board, at such time or times, whether before or after the examinations herein provided for, as the Board shall specify, for such interrogation as the Board may deem advisable and shall also submit to and satisfactorily pass such examinations as shall be prescribed by or pursuant to the provisions outlined in this Constitution.

(3) Eligible candidates will be examined at the times and places fixed by the Board, by an Examinations Committee approved by the Board, provided, however, that the Board may at any time appoint such other or additional examiners, who may but need not be, members of the Board, as the Board may deem advisable for the proper examination of an applicant.

(4) The Board Examination in Veterinary Microbiology shall consist of two (2) parts; namely, a general veterinary microbiology examination and a specialty examination.

(5) The general veterinary microbiology examination shall include:

(a) Material of a fundamental or general nature in bacteriology, mycology, virology, immunology and serology.

(b) Material of an applied or specialized nature pertinent or applicable to veterinary microbiology, including ecological relationships relating to animal and human exposure and methods of prevention and control.

(6) The general veterinary microbiology examination shall be administered on the day preceding the specialty examinations.

(7) The candidate is not required to pass the general veterinary microbiology examination before being eligible to sit for a specialty examination.

(8) The specialty examinations shall be in three specialty areas; namely:

(a) Bacteriology and Mycology

(b) Virology

(c) Immunology

(9) The specialty examination will include material of:

(a) a fundamental or generalized nature, including molecular biology, biochemistry and history; and

(b) an applied and specialized area pertinent or applicable to the specialty area.

(10) The specialty examination is a practical examination utilizing visual aids and involving both a test of

theoretical knowledge and an ability to solve problems. The candidate is asked to recognize, interpret and analyze the material presented, as if in a real world situation.

(11) The candidate may sit on one, two or all three specialty examinations. The candidate must pass at least one specialty examination and the general veterinary microbiology examination to be certified. The candidate will be certified in each specialty area for which competence is demonstrated.

(12) The Examinations Committee shall notify the Board of its recommendations on each candidate.

(13) After final action of the Board, the Secretary-Treasurer shall notify the candidate of the results.

(14) The candidate shall have five (5) years (five consecutive examination periods) to complete all phases of the examination successfully. A limit of two (2) attempts during one five year period will be granted for the general veterinary microbiology examination and two attempts for each specialty examination. Any candidate who has not successfully completed all phases of the examination within five years after application will be permitted to reapply after a waiting period of one (1) year. Such candidates will be required to submit a new application and examination fees. The applicant will be required to take the entire examination.

(15) No Diplomate of the College who is serving or has served on the Examinations Committee or has participated in examination question writing sessions may take any portion of the examination in order to become certified in an additional specialty area. Any other Diplomate of the College who wishes to become certified in an additional specialty area may take the specialty examination for that area if both the general veterinary microbiology examination and the specialty examination will be completed within the same five (5) year period. If not, the Diplomate must pass the general veterinary microbiology examination again, within the same five (5) year period of the specialty examination.

Section 9. Issuance of Certification:

The affirmative vote of a majority of the members of the Board shall be necessary and, subject to the preceding provisions of this Article V, shall be sufficient to authorize issuance of a Certificate in accordance with the provisions of Article III.

(1) Certificates shall be in such form as shall be prescribed and approved by the Board, and shall be signed by the President or Vice President and by the Secretary of the American College of Veterinary Microbiologists, Inc., and shall have its seal affixed. Certificates shall be and remain the property of the American College of Veterinary Microbiologists, Inc., but each person to whom a Certificate shall be issued shall be entitled to its possession unless and until such certification shall be revoked.

Section 10. Revocation of Certificate:

Any Certificate granted or issued by the Board of the American College of Veterinary Microbiologists may be revoked by resolution of the Board:

(1) In case the granting or issuance of the Certificate was contrary to or in violation of any provision of the Constitution of the American College of Veterinary Microbiologists, or

(2) In case the person to whom the Certificate was granted made any misstatement or misrepresentation of facts, or omitted to state or concealed any fact, either in the application for certification or otherwise, as to any matter referred to in the application or in any of the preceding sections of Article V, or

(3) For cause following disciplinary action. In case of the revocation of a certificate, the Board shall authorize the Secretary to request the return of the certificate. The names of members whose certificates have been revoked shall be deleted from future American College of Veterinary Microbiologists' directories.

Section 11. Discretion of the Board:

Notwithstanding any provisions of Article V or any other section of this Constitution and its By-Laws authorizing or contemplating the exercise of any power or the making of any decision, finding, or determination of the Examinations Committee or any other committee, the Board shall have final power, authority and discretion to prescribe, determine and decide any and all matters and questions relating to or arising under any of the provisions of this Article V, including, but not without limitation to:

- (1) The sufficiency of the compliance by an applicant for a Certificate within the provisions of Section 6 of this Article,
- (2) What standards of competency shall be possessed by applicants, and whether any applicant meets such standards,
- (3) The eligibility under appropriate sections of this Article of any applicant for a certificate.
- (4) Except as otherwise provided in Section 7 of this Article, whether and to what extent and in what manner and as to what matters any such applicant shall be examined pursuant to the provisions of Section 7, and whether any such examination has been satisfactorily passed,
- (5) Whether a Certificate shall be granted or issued to any applicant; and
- (6) Whether any Certificate granted or issued by the Board shall be revoked. The determination or decision of the Board as to any and all such matters shall be conclusive.

Section 12. Appeal procedures:

Adverse decisions by the College may include, but are not limited to: Denial of eligibility for Board examination; Denial of certification of an individual; and Revocation of certification. In the event of an adverse decision by the College, the Secretary-Treasurer shall advise the affected person of the decision within thirty (30) days and of the procedure for appealing the adverse decision. An affected party desiring to appeal the adverse decision must adhere to the following procedures:

- (1) Grounds for reconsideration or review:
The affected party may petition for reconsideration or review of the decision of the College on the grounds that the College ruled erroneously by:
 - (a) Disregarding the established College criteria for certification;
 - (b) Failing to follow its stated procedures; or
 - (c) Failing to consider relevant evidence and documentation presented.
- (2) Petition for reconsideration:
 - (a) An affected party may, at his or her option petition the Board of the College to reconsider its decision by filing with the Secretary-Treasurer of the College a written petition for reconsideration, which shall include a statement of the grounds for reconsideration and documentation, if any, in support of the petition.
 - (b) Such petition must be received in the College office within 90 days of the date on which the College has announced its adverse decision.
 - (c) The affected party may, at the discretion of the Board of the College, be invited to appear at the next regular meeting of the governing board of the College. The cost of travel, food and lodging for the petitioner will be borne by the petitioner.

(d) The Board of Governors of the College will meet in executive session to reach a final decision. This decision will be sent in writing by mail to the affected person not more than thirty (30) days after this final decision is made.

(e) Upon completion of steps (a) through (d) above, if the affected party is not satisfied with the final decision, he or she may request mediation by the AVMA, American Board of Veterinary Specialties (ABVS).

(f) The Chair of ABVS will call a meeting of the parties in dispute or their representatives. The meeting will be held at AVMA headquarters and will be chaired by the Chair of ABVS. The parties in dispute will be guided to seek equitable solutions. The College and the appellant will each pay the expenses of the meeting including travel, food, and lodging expenses of the representative of ABVS.

(g) The role of ABVS is advisory only; final authority rests with the Board of Governors, ACVM.

Article VI. OFFICERS

Section 1. The officers of this organization shall be a President, a Vice President and a Secretary-Treasurer. Officers shall be Diplomates of the College.

Section 2. The election of these officers and their duties shall be provided in the By-Laws.

Article VII. BOARD OF GOVERNORS

Section 1. The Board shall consist of ten (10) members, nine (9) of which shall be elected Diplomates as provided in Article VI of this Constitution, and a President who shall also be an elected Diplomate.

Section 2. The general management and business of this organization shall be vested in the Board.

Section 3. The President shall be elected to no more than two (2) two-year terms as provided in the By-Laws (Article 1, Section 1). The Board shall annually elect from its membership a Vice President. In addition, they shall also elect a Secretary-Treasurer as provided in the By-laws (Article I, Section 4). The immediate past President shall continue for one year as an ex-officio member.

Article VIII. AMENDMENTS

Section 1. Proposed amendments to this Constitution and to the By-Laws, signed by at least three (3) Diplomates in good standing, shall be submitted to the Board for its consideration. An affirmative vote of at least two-thirds (2/3) of the Board shall be required for adoption of any amendment.

BY-LAWS

Article I. ELECTION AND DUTIES OF OFFICERS

Section 1.

Elected members of the board, ten (10) in number of which nine (9), shall be Diplomates elected by the membership of the College by secret ballot, each to serve a term of three (3) years. Tenure in office shall be such that three (3) members of the Board are replaced each year. Any member having been elected to one full term or to fill a vacancy in an uncompleted term may be elected for one (1) additional term. At the completion of this second term, the Board member cannot be re-elected until at least one (1) year absence from the Board.

The President of the Board of Governors shall be a Diplomate elected by the membership of the College by secret ballot, to serve a term of two (2) years. Any member having been elected to President for one full term or to fill a vacancy in an uncompleted term may be elected for one (1) additional term. At the completion of this second term, the President cannot be re-elected until at least one (1) year absence from the Board.

Section 2.

(1) Nomination for all vacancies on the Board and President of the Board shall be made by the Nominating Committee. The Nominating Committee shall present the names of at least two (2) candidates for each position to be filled on the Board and shall submit the list of recommendations to the Secretary-Treasurer by the 15th day of December following its appointment. The Secretary-Treasurer shall inform diplomates not later than the first day of January of the committee report. Additional nominations for office may be made by petition over the signature of three (3) Diplomates in good standing if the petition is received by the Secretary-Treasurer on or before the 15th day of February. A petition bearing the names of three (3) Diplomates may nominate only one (1) candidate to office. Nominations of other candidates will each require a similar petition.

(2) The Secretary-Treasurer shall send, no later than the 15th day of March, a final ballot bearing all nominations for office, whether made by the Nominating Committee or by petition, to all eligible voting members

(3) Each voting member shall return the completed ballot properly sealed for secrecy to the Secretary-Treasurer. In order to be counted, a ballot must be received by the Secretary-Treasurer on or before the next succeeding 15th day of April.

(4) The Secretary-Treasurer shall check off the Registry of the College the names of all members voting; shall reject ballots from those who are not in good standing according to these By-Laws; shall deliver all valid sealed ballots to Tellers appointed by the President of the Board to take charge of the election and shall report to the Board upon ballots rejected. The Tellers shall count the ballots and report to the Secretary-Treasurer who shall announce the results promptly.

(5) The candidates who receive the highest number of votes shall be elected to fill the vacancies on the Board.

(6) Newly elected members of the Board shall take office at the close of the July Board meeting.

Section 3.

(1) The Board shall elect annually from its membership a Vice President. Nominations for Vice President shall be made by a nominating committee comprised of the President of the Board of Governors and one other Diplomate not currently serving on the Board. Nominations will be announced to the College before the July meeting of the Board. Additional nominations by Board members may be made at the July Board meeting.

(2) The Vice President in any year shall automatically assume the office of President if the latter is unable or unwilling to complete a term. New officers shall assume office at the close of the July Board meeting.

Section 4.

(1) The Board shall elect from the Diplomates a Secretary-Treasurer who need not be a member of the Board. The Secretary-Treasurer, if not an elected member of the Board, shall be an ex-officio member without the power to vote. The Secretary-Treasurer shall serve a term of 3 years beginning one year after election to office. In the second year of the term of office of the Secretary-Treasurer, nomination for the position shall be made by a nominating committee comprised of the President of the Board of Governors and one other Diplomate not currently serving on the Board. The nomination shall be announced to the College before the July meeting of the Board. Additional nominations by Diplomates or by Board members may be made at the July Board meeting.

(2) In the event that a Secretary-Treasurer cannot complete the term of office, an interim Secretary-Treasurer will be nominated by a committee comprised of the Board of Governors and one other Diplomate not currently serving on the Board. The Secretary-Treasurer shall be elected by a telephone poll of the Board members. The interim Secretary-Treasurer shall serve until the election procedure described above can be completed.

Section 5. Duties of the President and Vice President:

(1) The President shall preside over all meetings of the College and meetings of the Board, shall be a member, ex-officio, of all committees and shall perform the usual duties of such office. The President shall have no vote in the Board except in case of a tie, and no vote on committees in an ex-officio capacity. The President is expected, with the assistance of the board, to develop strategic plans for ACVM and to develop and implement strategies to achieve objectives.

(2) The Vice President shall be an ex-officio member of all committees, shall preside at meetings in the absence of the President, and shall succeed to the office of President should that office be vacated. The Vice President shall have no vote on a committee when serving in an ex-officio capacity.

Section 6. Duties of the Secretary-Treasurer:

(1) The Secretary-Treasurer shall serve as executive officer of the College. As directed by the Board, the Secretary-Treasurer shall conduct business affairs of the College, collect fees and dues, issue receipts for such fees and dues, draw vouchers, and pay bills and expenses. The Secretary-Treasurer shall arrange for safekeeping of College funds, shall keep records of all transactions and submit a yearly statement of financial affairs to the Board. All records of financial transactions of the College shall be submitted annually to the Budget Committee for auditing.

(2) The Secretary-Treasurer shall keep minutes of all meetings and shall perform the usual duties of the Secretary and such other duties as are assigned by the Board.

Section 7. Duties of the Board:

The Board shall have the duties and power ordinarily delegated to the governing body of a corporation. Responsibilities given by the Constitution are as follows:

(1) Shall organize and operate an agency for certification of Diplomates in Veterinary Microbiology.

(a) The Board shall judge compliance for certification of applicants with the requirements as set out in the Constitution.

(b) Appoint an Examinations Committee to operate under its supervision.

(c) Certify such candidates who qualify as specialists (Diplomates) in Veterinary Microbiology.

(d) The Board shall make available to candidates and the interested public a detailed account of

experience and training prerequisite to the Board examination.

(e) The Board shall serve the public by preparing and furnishing lists of those individuals who have been certified.

(f) The Board shall hear petitions of candidates and Diplomates and recommend appropriate actions.

(2) Shall create appropriate committees, appoint committee members and supervise their activities.

(3) Shall report to the College annually its work and activities, including a full financial statement and shall make such interim reports as are necessary and advisable.

(4) Shall exercise its constitutional authority in promoting and attaining the objectives of the College, especially those pertaining to professional, institutional, and public relations.

(5) Shall identify and elect to Emeritus Diplomate status those Diplomates who have retired from active practice of the specialty. This will be undertaken upon the Diplomate's request or consent.

(6) Shall solicit nominations for Honorary Diplomate and, after consideration of each nomination, shall nominate candidates for election by the voting membership. Such elections shall take place in conjunction with the balloting for officers of the College.

Article II. COMMITTEES

Section 1. There shall be the following committees:

(1) Nominating Committee

The Nominating Committee shall consist of three (3) Diplomates. In making the appointments, due regard shall be given to the various fields of endeavor in veterinary microbiology. Members of the Board during their term of office shall not be appointed to the Nominating Committee. Members of the nominating committee shall not be eligible for election to the Board of Governors.

(2) Examinations Committee

The Examinations Committee shall consist of no fewer than nine (9) Diplomates. In making appointments, due regard shall be given to the various fields encompassed in veterinary microbiology. The committee shall examine the prerequisite qualifications of applicants for examination according to standards of eligibility established by the Board and recommend action to the Board. The committee shall develop and conduct examinations, evaluate results, and make reports and recommendations to the Board with respect to certification of candidates.

(3) Continuing Education and Program Committee

This committee shall consist of nine (9) Diplomates. The committee shall plan the continuing education programs of the College and oversee the presentations.

(4) Continuing Education Funding Committee

This committee shall consist of three (3) Diplomates. The committee shall solicit funds to support the continuing education program

(5) Graduate Students Awards Committee

The Graduate Student Awards Committee shall consist of twelve (12) diplomates. The committee will establish procedures for the recognition of graduate students who present outstanding papers at the Conference of Research Workers in Animal Diseases.

(6) Honorary Diplomate Selection Committee

This committee shall consist of three (3) Diplomates. The committee shall review the qualifications of individuals proposed as Honorary Diplomates and prepare a summary of the credentials and achievements of each candidate recommended to the College membership for election.

(7) Budget Committee

This committee shall consist of three (3) Diplomates, at least one of whom is a member of the Board of Governors. The committee shall audit the income and expenditures of the College for the recently completed year and recommend to the Board a budget (proposed income and expenditures) for the current year. The committee, in consultation with the Secretary-Treasurer, shall, every three (3) years, contract with a professional certified public accountant for an audit of the College's financial records. The committee shall make recommendations regarding honoraria for officers of the College.

Section 2. Members on all standing committees shall serve three (3) years. One third of the members of each committee shall be appointed annually by the President of the Board with the approval of the majority of the Board at the time of the July meeting. Tenure of standing committee members shall begin immediately following appointment at the July meeting.

Section 3. Members of standing committees may be elected for one (1) additional term but are ineligible for additional service until they have been absent from the committee for at least one (1) year.

Section 4. The Board may at their discretion approve the establishment of additional committees to assist in the business and scientific programs of the College.

Article III. DUES AND FEES

Section 1.

(1) Annual dues or assessments, when established, shall become payable in advance on July 1 of each year and shall be remitted to the Secretary-Treasurer.

(a) A person who fails to pay dues or assessments for six (6) months after the due date shall be designated not in good standing and shall not be eligible to vote or hold office until the arrears and the ensuing years' dues or assessments are paid in full.

(b) Persons whose dues or assessments are in arrears for two (2) full years will be disassociated from the College after due notice has been given. Persons who have lost their membership status may be reinstated upon approval of the Board after payment of arrears as well as dues or assessments for the ensuing year.

(2) Emeritus and Honorary Diplomates shall be exempt from the annual dues and assessments.

Section 2. Fees for application and examination shall be determined by the Board.

Article IV. DISCIPLINARY ACTION

Section 1. The Board shall have the authority to recommend censure, suspension, expulsion, or revocation of the certificate of any member for cause.

Section 2. If a Diplomate feels that by unethical conduct, fraud, nonpayment of dues for two (2) years, or for any other reason any member has brought discredit upon the College, charges may be presented in writing to the Board. If the charges are considered sufficiently serious to warrant action, the accused member shall be notified by the Board in writing by registered mail of the details of all charges. The accused Diplomate shall have full opportunity to reply in writing or to appear before the Board in person. The Board shall weigh the evidence and with concurrence of two-thirds (2/3) of the members may recommend suitable disciplinary action. Such disciplinary action shall be published and executed only after being sustained by an affirmative vote of the majority of the members of the College who are voting.

Section 3. Other provisions for revocation of the Certificate granted or issued by the Board are specified in Section 10 of Article V of the Constitution. Appeal procedures are specified in Article V, Section 12 of

the Constitution.

Article V. CONDUCT OF BUSINESS

Section 1. Quorum:

(1) A quorum of the Board shall consist of a simple majority of the Board.

(2) Regular or special meetings of the Board and the College shall be called by the President, subsequent to approval of the Board. Should the President fail to set the date for regular or special meetings, the Board may by a simple majority action, set a date for such meetings.

Section 2. Suspension of By-Laws:

The By-Laws may be suspended at any regular or special meeting, as defined above, by unanimous consent of all voting members present and voting.

Section 3. Rules of Order:

Robert's Rules of Order, revised, shall govern the conduct of all meetings.