



University of Nebraska–Lincoln

Institute of Agriculture and Natural Resources

College of Agricultural Sciences and Natural Resources

School of Veterinary Medicine and Biomedical Sciences

2022 Academic Program Review

Response to Review Team Assessment and Recommendations

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## BACKGROUND/EXECUTIVE SUMMARY

### Overview

The School of Veterinary Medicine and Biomedical Sciences (SVMBS) is an academic unit within the UNL Institute of Agriculture and Natural Resources (IANR), and specifically within the College of Agricultural Science and Natural Resources (CASNR). SVMBS was formerly the Department of Veterinary Science until 2006, when the department was recognized as a school after the Professional Program for Veterinary Medicine (PPVM) was established with Iowa State University College of Veterinary Medicine (ISU-CVM). The SVMBS maintains strong research and training programs including undergraduate, graduate, and professional degree programs, and operates two additional large facilities to support and enhance the IANR mission. The Great Plains Veterinary Educational Center (GP-VEC) and the Nebraska Veterinary Diagnostic Center (NVDC) support the SVMBS mission: to advanced animal health and well-being and the One Health concept through discovery by innovative research; timely extension and outreach; accredited diagnostic services; high quality, affordable and accessible education to undergraduate, graduate, and professional students.

### 2022 Site Visit

The UNL SVMBS site visit was conducted on October 3-7, 2022, by an external review visit team consisting of Dr. Kim Dodd (chair), Dr. Amanda Fales-Williams, Dr. Alejandro (Alex) Ramirez, Dr. Jessica Robb, and Dr. Ruth Woiwode (IANR Faculty representative). Three students participated in portions of the review, including Ranger Gunville, Francine Watkins, and Jaden Carlson. This site visit report includes information provided in the UNL SVMBS self-study packet and appendices, on-site observations, as well as meetings and interviews with UNL SVMBS and associated personnel.

### SVMBS Response to Site Visit Report

The report from the External Review Team has been reviewed and generally well received. There will be five themes reflected in these responses from the School of Veterinary Medicine and Biomedical Sciences:

1. Determination of the essential expertise required for continuation of SVMBS, immediate and long-term
2. Strategic Directions—Internal and external stakeholder surveys and queries regarding:
  - the identity of SVMBS and
  - the future of veterinary medical education in Nebraska.
3. Graduate education and research in SVMBS
4. Undergraduate recruiting and mentoring for careers in the animal health field
5. Communication

The review team's report captured the breadth and depth of the SVMBS mission and summarized the strengths and challenges faced by the school, and it presented recommendations to leverage capabilities and mitigate risks. This response describes the school's plans to address the comments in all sections of the report. Selected and specific relevant statements from the report are referenced in each of the five responses below.

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## 1. Essential Expertise/Staffing

### FROM REVIEW TEAM REPORT

**PPVM Program (Page 3):** SVMBS must be confident that there are sufficient teaching FTEs to maintain (and grow) the teaching load required for the professional program. Much of the first- and second-year pathology courses are currently taught by faculty intending to retire in the coming months.

**NVDC (Page 4):** The NVDC's continued success to develop a clear identity to leverage new business opportunities in the face of external competitors.

**SVMBS Challenges (Page 5):** The current FTE allocation model strains faculty capacity to cover teaching obligations and does not differentiate high teaching demands in the professional (PPVM) courses relative to undergraduate courses. There is also limited redundancy in teaching expertise and experience, creating vulnerabilities in offering the required courses each year.

**SVMBS Question (Page 10):** Relative to efficient uses of resources and succession planning, should SVMBS define two to three core areas of research strengths? **Review Team Response:** SVMBS should identify no more than three core areas of research and teaching strengths to inform the future of the research, undergraduate, and graduate training programs and to leverage talent and resources more strategically in each of the mission areas.

### SVMBS RESPONSE

#### **DETERMINATION OF ESSENTIAL EXPERTISE THAT WILL BE NEEDED WITHIN SVMBS**

All aspects of scholarly activity are important but there are both immediate mission-critical needs as well as strategic needs that can have long-term impact on the success and relevance of the mission of the SVMBS. For instance, the pending retirement of two pathologists will impact diagnostic service, teaching in the PPVM program, and research. As a new director of the NVDC will be soon identified, we will develop a strategy to ensure coverage of the mission needs and coordinate that strategy with IANR leadership.

There are many strategic needs within SVMBS. Two critical needs with very high impact are described below. We will develop a list of essential and highly desirable faculty expertise gaps to be used as recruiting opportunities are realized.

- A permanent research position at GPVEC (with some teaching responsibility). This individual could provide relevant and impactful work in SVMBS. This would be very closely aligned with the US-MARC mission.
- Molecular Laboratory diagnostic work is a very significant service in the NVDC. Compared to a few years ago, much of the service of the NVDC now revolves around molecular testing by means of PCR methodologies. This work has essentially replaced most virus isolation efforts. With regard to discovery and development of virological molecular test methods and associated molecular epidemiology, we need leadership in this discipline. The NVDC is severely behind peer institutions in the whole genome sequencing arena. It only makes sense, given the livestock population of the state, the NVDC should be a global technology leader in the field of molecular diagnostics. It is clear that many of the diseases of high impact are zoonotic and/or high consequence pathogens. The existing and underutilized BSL-3 facilities could be an important resource in this effort.

Molecular diagnostic testing has doubled in the last three years. COVID-19 and avian influenza testing performed by the NVDC has been an essential service for Nebraska. The NVDC has received a significant amount of USDA farm bill funding for the molecular diagnostics section for research and development. There is also a big need/demand from APHIS and the Nebraska agricultural community to generate and validate new testing approaches.

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The ability to be a leading laboratory in developing diagnostic approaches and related epidemiology along with strong interactions with state and federal regulatory authorities would be extremely beneficial for the Nebraska agricultural economy and public health. This would also require enhanced genetic technology capability for the NVDC operations. Strategically, especially related to bovine infectious diseases, there is an opportunity to be a global leader in this discipline. Leadership in the area of molecular diagnostics is essential for the NVDC to provide opportunities for research (directly and collaboratively) and resident and graduate student training.

## **LEADERSHIP OF NVDC, GPEC, PPVM, GRADUATE AND UNDERGRADUATE CURRICULUM COMMITTEES**

The leadership of the NVDC, GPEC, PPVM, Graduate Committee, and Undergraduate Curriculum Committee are mostly early- to mid-career faculty within SVMBS. They are all very effective at managing their respective activities and responsibilities. In these roles, they have earned respect and trust of their colleagues. This group of faculty leaders along with all committee chairs have become an informal advisory team for SVMBS strategic planning.

## **OUTCOME OF ACTIONS WILL RESULT IN HIRING PLAN**

The outcome of the actions of this effort will result in a working strategic hiring plan with relative priorities in terms of absolute service/educational needs and/or strategic opportunities/needs. As mentioned, one service/educational need that we are currently facing is the need to replace two retiring pathologists. This will require redistribution of administrative, diagnostic service, teaching, research, and traditional service duties. Also, as mentioned above, there are critical mission related needs that have been created by shifting needs in scholarly service as well as research directions. A hiring plan draft will soon be available and will be discussed among the SVMBS leadership and all faculty.

## **EXCELLENCE IN RECRUITMENT**

Excellence in recruitment includes active and intentional efforts to identify and recruit diverse applicants. This will be an important component of this activity.

## **APPROACH**

As mentioned above, the SVMBS director will work through the School Leadership Team (SLT– directors and committee chairs with ad hoc faculty representation) to develop a short-term hiring plan reflecting immediate priorities and a long-term view of strategic needs. There will be a new director of the NVDC by spring 2023. The new director will be a key member of the SLT and contributor to this effort. These plans will be presented to the faculty. The short-term plan will be finalized in January 2023 and the long-term plan by July 2023.

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## 2. Strategic Directions

### FROM REVIEW TEAM REPORT

#### **PPVM Program (Page 3):**

- There is a great deal of discussion about expanding the PPVM program to include additional students per class. The two primary limitations are (1) space limitations at SVMBS and (2) importantly, ISU-CVM's stated position that they are unable to accommodate additional PPVM students. Due to the widely differing DVM programs across the country, it is not likely to be feasible to partner with another university without having to revamp the PPVM curriculum to meet that program's needs.
- It would be beneficial for the PPVM leadership to revisit the ISU-CVM Memorandum of Agreement to ensure shared vision and expectations for the future.

**NVDC (Page 4):** The NVDC's continued success to develop a clear identity to leverage new business opportunities in the face of external competitors.

**SVMBS Question (Page 10):** How might integration between units/areas within and outside the school be leveraged (such as resident training positions involved in teaching and GP-VEC program integration with undergraduate programs as examples)? **Review Team Response:** Success may be more easily achieved through collectively defining and focusing on a core, shared identity making it easier for everyone to feel they are working together as a unit rather than operating in independent silos.

### THE SCHOOL'S RESPONSE

There have been numerous APR process-related discussions about future directions of the PPVM program. While the SVMBS faculty have substantial program and professional experience, the determination of future programmatic directions is an activity that must be undertaken with and through numerous internal and external stakeholders and educational partners. There is enthusiasm among many of the faculty to pursue the exploratory actions described below. Part of the reason for this interest is the desire to create or update a collective mission and vision to facilitate the realization of the needs for Nebraska. There is also interest in realignment of undergraduate, professional, and graduate education programs with the needs of many stakeholders, with the resources available to the School, and the expertise of the faculty and staff.

#### **APPROACH**

The SVMBS SLT will interact with the Bureau of Sociological Research (BOSR) and IANR senior leadership to define specific survey and discussion approaches to collect and then analyze the data acquired, as described below. An important component of this activity will be defining the specific objectives of the surveys and inquiries to be undertaken. The SVMBS SLT will develop these questions and objectives by May 2023 and work with the BOSR to plan the execution of the data collection by June 2023. The outcomes would lead to a set of recommendations for veterinary education in Nebraska looking forward over the next 25 years. The data and conclusions of these efforts will be assembled into a series of reports that will eventually form strategic recommendations for the SVMBS and IANR leadership.

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### 3. Graduate Education and Research

#### FROM REVIEW TEAM REPORT

**Residency and graduate training opportunities** (*Page 3*): Develop and support a community for graduate students and trainees, including all campuses.

**GPVEC** (*Page 4*): The relationship with USMARC is strong but USDA will not continue to host students if there are concerns or evidence of inappropriate student behavior.

**Basis for growth and effectiveness** (*Page 7*): Develop programs with a focus on ensuring the success of diverse students.

**SVMBS Question** (*Page 10*): Relative to efficient uses of resources and succession planning, should SVMBS define two to three core areas of research strengths? **Review Team Response:** SVMBS should identify no more than three core areas of research and teaching strengths to inform the future of the research, undergraduate, and graduate training programs and to leverage talent and resources more strategically in each of the mission areas.

#### THE SCHOOL'S RESPONSE

- There is interest in defining integrated research themes among the faculty. One example of a research theme would be in the area of diagnostics, pathogenesis, and interventions for emerging/reemerging infectious diseases. Another may be the bovine respiratory disease complex (and related management). Other themes may include bovine gastrointestinal and diarrheal diseases of ruminants and swine, avian influenza, as well as swine respiratory and reproductive syndrome. Funding for biomedical students may include multiple NIH programs.
- One of the strongest justifications for creation of such teams would be enhanced ability to compete for funding. Obtaining corporate and government funding for such activities will more likely occur as directed to strong teams with organizational support. This in turn will enhance support for graduate students.
- The Graduate Committee is currently focused on utilization of the Master of Applied Sciences degree. This will allow consideration of novel graduate programs (dual degree with the PPVM or BS degrees, programs for post-DVM students at GPVEC). This may also lead to development of some novel certificate programs. The SVMBS and GPVEC staff will instruct and manage all students with regard to ethical and safe behavior at all animal premises, including the USMARC/GPVEC.
- With regard to professional and graduate students, excellence in recruitment includes active and intentional efforts to identify and recruit diverse applicants. This will be an important component of this activity. In fact, the recruitment of both professional and graduate students may be the most effective and rewarding point in the career pipeline to have a positive impact on the diversity of the veterinary profession. To support these goals, the Graduate Committee is establishing an active Graduate Student Association for SVMBS.

#### APPROACH

The SVMBS Graduate Committee is currently developing more detailed plans for these planning and strategic activities. Discussions have begun relative to B and C above. As the discussions advance, the outcomes will be presented to the faculty.

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## 4. Undergraduate Education and Recruiting

### FROM REVIEW TEAM REPORT

**Limited teaching faculty for PPVM (Page 5):** The current FTE allocation model strains faculty capacity to cover teaching obligations and does not differentiate high teaching demands in the professional (PPVM) courses relative to undergraduate courses. There is also limited redundancy in teaching expertise and experience, creating vulnerabilities in offering the required courses each year.

**Competition from other undergraduate programs (Page 6):** Reevaluate undergraduate program to leverage veterinary expertise to create programs that either (1) make graduates more competitive for acceptance into veterinary school, or (2) provide advantage for individuals who are not accepted into veterinary school and choose to pursue additional career paths.

**SVMBS Question (Page 6):** Basis for growth and effectiveness of our educational programming is a diverse, talented, and motivated pool of students...How do we develop effective outreach and recruiting systems for Nebraska to identify a strong pool of students and ensure diversity, equity, and inclusivity? **Review Team Response:**

- More effective outreach and recruitment will require enhancing visibility of SVMBS and PPVM – suggestions outlined above.
- Develop programs with a focus on ensuring the success of diverse students, including accommodations for a broad spectrum of disabilities, and academic programs to support the academic achievement of students from low-resource settings.
- Develop a DEI program that mirrors the diversity in Nebraska – and recruit faculty that mirror the qualities of the students UNL is looking to bring on.

**SVMBS Question (Page 7):** Are there strategic gaps in content and/or delivery in the educational programming for undergraduate students in the pre-veterinary or veterinary technology programs that enhance student success? **Review Team Response:** The biggest challenge with the undergraduate program is that it lacks a clear and cohesive goal.

**SVMBS Question (Page 10):** Would there be advantages in better integration of research, diagnostic service, and extension programming in key areas? **Review Team Response:** Partnering with Extension personnel to a greater extent, the potential to serve the people of Nebraska is elevated.

### THE SCHOOL'S RESPONSE

- There is enthusiasm for reevaluation of the undergraduate program in a very open and public manner (especially with UNL IANR CASNR stakeholders and the PPVM). This effort will seek input from alumni and a perfusion of ideas and enthusiasm. There is a very obvious and important link between teaching in all of the academic programs of SVMBS. There is interest in clearly defining educational outcomes for students that are not accepted into professional programs. Interactions with the BOSR will facilitate this process (#2 above).
- There is a strong interest and immediate opportunity to initiate a formal recruiting program for pre-professional students (Pre-Vet). Many veterinarians, especially from the western districts of the Nebraska Veterinary Medical Association, are interested in developing a formal mentoring network to recruit

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students and develop interest/experience in rural/ small town veterinary practices. These veterinarians have very actively and successfully created scholarship programs for pre-veterinary and veterinary students. There is interest in creating a program somewhat like the UNL College of Law and Chadron State College Rural Law Opportunities Program. We will be interacting with colleagues in the College of Law soon to explore these ideas. These recruitment programs also provide one of our best opportunities to identify and actively recruit under-represented student populations.

The UNL/ISU PPVM has historically placed a relatively large number of graduates in mixed-animal or food animal exclusive practices in Nebraska and surrounding states (approximately 35%). The approximate national average is 8% to 11%. As a consequence of this, the U.S. is facing an alarming shortfall of veterinarians to treat livestock and poultry in rural areas, threatening public health, food safety, and economic growth in communities that depend on agriculture, according to a new report commissioned by Farm Journal Foundation:

*More than 500 counties across the U.S. have shortages of food animal veterinarians, according to the report, authored by Cornell University's Dr. Clinton Neill. Today, only about 3-4% of new veterinary school graduates pursue livestock or other food-animal practice areas, a stark decline from 40 years ago when about 40% of graduates specialized in this area. Shortages stem from several factors, including high levels of education debt that have outpaced potential earnings, especially in the rural U.S. This is encouraging more veterinarians to pursue companion animal practices and work in urban and suburban areas where incomes are often higher.*

*"The decline in food animal veterinarians in rural areas heightens concerns for a number of risks, including food safety threats, animal disease outbreaks, the potential passing of animal diseases to human populations, and decreasing rural economic growth," Dr. Clinton Neill said. "In essence, veterinarians protect the whole of the human and animal population, so it is critical that we have a strong pipeline of practitioners to work in rural areas."*

*—Farm Journal Foundation report: Rural veterinary shortages create risks for US food system | DRGNews*

## **APPROACH**

- The reevaluation of the undergraduate program will take place through the interactions with the BOSR. The Undergraduate Curriculum Committee will lead these discussions and development of the specific questions and survey suggestions.
- The PPVM leadership and SVMBS SLT will lead discussions and interactions with relevant parties to develop recruiting initiative(s) for pre-veterinary and veterinary students. These efforts should be integrated through both undergraduate and professional programs. Developing meaningful internal and external mentoring relationships will be a key component of this effort. Linking the recruitments to scholarships, fellowships and employment/active learning opportunities will also be critical for success.



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## 5. Communication—Internal and External

### FROM REVIEW TEAM REPORT

**SVMBS Strengths** (*Page 2*): Highlight SVMBS success stories to facilitate recognition of faculty contributions through newsletters and/or social media.

**Lack of clarity regarding SVMBS core mission** (*Page 5*): Efforts to develop a shared vision is hampered by the complexity of the IANR structure; the multiple layers/reporting lines complicates communication and creates confusion around how resources are allocated, and decisions are made. Faculty disengagement is driven by limited communication with IANR leadership. Regular updates from IANR Deans, as well as scheduled meetings with IANR leadership and SVMBS faculty, will be valuable in fostering engagement and innovation.

### THE SCHOOL'S RESPONSE

- The School has a newsletter that is distributed approximately twice per semester. The newsletter provides news and updates including awards and other features.
- SVMBS will continue this and include more research/diagnostic features. We will also collaborate with IANR and CASNR publicity services. It will be good to interact more with Nebraska Extension as well as regional experiment station resources across the state. Early in the first quarter of 2023, the SVMBS director will reach out to the appropriate IANR resources to establish a more permanent communication.
- SVMBS will continue the PPVM Facebook page. Dr. McFee has led this activity. The goal of this activity is to showcase student activities and increase overall recognition, understanding, and support of the program. Social media meetings are held among staff and students to generate post ideas. Students are recruited for this committee to facilitate collection of student photos and stories. In 2022, there were 109 posts, with 1,800 people engaging with (e.g. liking, commenting) the most popular post. The page currently has 845 followers, which is a 24% increase from 2021.