

## **Executive Summary: The Future of Veterinary Medicine**

### **AVMA – AAVMC Veterinary Futures Commission October 10, 2019**

#### **Introduction**

Today, veterinary medicine provides exceptional value to society with broad responsibilities for animal, human, and planetary health. Our profession is often ranked among the most highly respected in healthcare, with good reason. The future is decidedly bright for veterinary medicine based upon its societal contributions, including animal welfare and wellbeing, biomedical research, food animal health and production, safeguarding the health and role of companion animals in our society, and conservation of species. Strengthening this relevance will ensure that veterinarians have a “seat at the table” and that they are invited to even more “tables” beyond their traditional roles.

Modern society is moving from relatively slow-paced, linear growth to exponential growth underpinned by rapidly advancing, disruptive technologies in a global setting. How will veterinary medicine be affected in this new world? More importantly, how can veterinary medicine leverage rapidly changing technologies, new business models, and human resources across generations, not only to survive but to thrive well into the future?

The American Veterinary Medical Association (AVMA) and the Association of American Veterinary Medical Colleges (AAVMC) have joined together to develop the Veterinary Futures Commission (VFC). The VFC was intended to serve as a semi-autonomous visioning body to evaluate changes and opportunities in veterinary medicine, identify priorities guided by societal needs, and develop evidence-guided recommendations to the AVMA and the AAVMC regarding potential courses of action. The Commission was organized to think not about a future shaped by complacency and aversion to change, but a future with extensive opportunities, some never imagined before. The future described here is based on the deliberations of a distinguished panel of experts from academia, clinical practice, and leadership positions within the profession. They have identified a number of emerging trends that will affect the animal

health industry during the next generation and have offered some recommendations for adapting to and leveraging these pathways to the future.

There are real risks to the profession if we fail to adapt to meet future challenges. The following outcomes could result, if we allow our future to be dictated by events rather than taking a proactive approach to managing change:

- The preeminent role that veterinarians play as the leading experts in animal healthcare and wellbeing could be eroded.
- Alternative sources of animal medical care could displace the veterinary clinician as the primary option for animal health solutions.
- Primary care veterinary practice could move from a medical authority to a technical provider of commoditized services.
- Veterinarians could have a diminished level of influence affecting animal agriculture, science, research, public policy, and animal health generally.
- The profession could no longer be seen as an attractive career option for aspiring healthcare professionals.

At the same time, there are tremendous opportunities to lead the profession into a more sustainable future by embracing the societal, technological, and environmental disruption that is occurring.

- The veterinary profession can establish a professional culture that adapts to change, inspires innovation, and builds an entrepreneurial mindset.
- Veterinary medicine can expand its influence as a trusted leader and valued partner in protecting animal, human, and planetary health.
- We can develop continually evolving, innovative models of education that are competency-based and learner centered to promote lifelong learning and facilitate the acquisition of new knowledge and skills.
- We can improve access to care and penetrate underserved markets by leveraging technology, promoting team-based care, and employing a wide range of business models, from large corporate practices to individual ownership.

- We can recruit a more diverse group of top quality applicants with a wide variety of backgrounds and experiences that will be able to imagine and implement different, novel approaches to solving complex global challenges.

To facilitate a meaningful dialog, a collegial sense of mission, and a free exchange of ideas, the panel met in four face-to-face working sessions over the course of a year. While *the Future of Veterinary Medicine* focuses principally on trends within the U.S., a recurring theme of this report is the global impact of veterinary medicine and the importance of a unified approach to managing our future across geographic boundaries.

## **Culture and Professionalism**

The veterinary medical profession enjoys a position of trust and respect in society. Veterinarians are seen as highly qualified healthcare providers devoted to safeguarding the wellbeing of animals and contributing to our food security while also serving our clients competently with integrity and compassion. This is because veterinary medicine has a values-based culture. The foundational values of our profession are described in the *Veterinarian's Oath*, the *Principles of Veterinary Medical Ethics*, and the mission and vision statements of the AVMA and the AAVMC.

The importance of shaping and defining the culture of veterinary medicine cannot be overstated. Although cultural transformation is the responsibility of leadership, it takes a shared commitment from all members to make it effective. The future culture of the veterinary profession, including defining and identifying the behaviors and values required to shape that culture, begins with those in leadership positions within our professional organizations and academic institutions.

Cultural structure and transformation are almost entirely within our control. Stated another way, we determine the values and behaviors that enable us to embrace, influence, and adapt to whatever “futures” will emerge. Exponential advances in technology are driving the increasingly rapid pace of change in healthcare; therefore, one of the most important cultural behaviors necessary for our profession to thrive is for veterinarians and veterinary leaders to adapt to change with a sense of urgency.

*Diversity is an essential component of our professional future*

There is solid evidence of the tangible and verifiable benefits that can be achieved by engaging multiple stakeholders with many different backgrounds, experiences, and perspectives when working to solve complex problems. Research has demonstrated that more diverse teams make better decisions and more diversity in the workplace results in greater profitability and value creation. It is essential for the future success of our profession that we have a diverse pool of veterinarians to support a wide range of stakeholders and career paths.

The definition of diversity is broad and includes a number of factors, such as race, ethnicity, gender, sexual orientation, gender expression, socio-economic status, age, physical ability, religious belief, political belief, educational background, geographical location, marital status, and work experiences.

Veterinary medicine has been traditionally male dominated; however, today more than 80% of veterinary students are women. This trend will result in continued cultural shifts and pragmatic adjustments within the profession.

Understanding and leveraging generational differences will advance the future of veterinary medicine in a positive way. Millennials own more pets than other generations and may consider their pets as starter families. Some millennials choose pets over children as their permanent families. Generation Z will substantially influence how we all live and work. They will contribute to the exponential power of new trends, products, and services to reach and reshape generations. They will exploit their traits as self-starters, self-learners, and self-motivators to make their mark on the world.

Growing numbers of U.S. veterinary school applicants are choosing to attend international veterinary programs to broaden their global perspective. National veterinary organizations of many countries are already opening the lines of communication, sharing ideas, and actively collaborating. The global One Health movement will continue to unite the healthcare professions in recognition of the inextricable link among animal, human, and environmental health and will engage a broad range of organizations, industries, and government agencies.

Veterinarians will deeply understand that a culture of individual well-being is not selfish; rather, it is essential for professional and personal success. Recognizing the

importance of the holistic health of the profession, through self-care and support, veterinarians will be more capable of helping others.

The importance of strong, capable veterinary leadership to impact the profession, its culture, and its future will only escalate over time. Institutions where leadership roles will prove critical for effective influence include clinical practices, academic institutions, veterinary and other nonprofit organizations, animal health industries, government, and entrepreneurial groups.

#### *Intrinsic aspects of professional culture*

The following characteristics and emerging competencies will define our professional culture in the future:

- Ethical reasoning, compassion, empathy
- Emotional intelligence (EQ), adaptability quotient (AQ)
- Intellectual curiosity, lifelong learning, continuing professional development
- Creativity, innovation, entrepreneurialism, growth mindset
- Critical thinking, problem solving, systems engineering
- Leadership, teamwork, intraprofessional collaboration, team-based care

#### *Extrinsic aspects of our professional culture*

The following behaviors directed at external stakeholders will become even more critical in the future:

- Interprofessional and multidisciplinary collaborations
- Digital competence, data literacy, technological familiarity
- Cultural competency and humility
- Understanding, accepting, and leveraging generational differences
- Global mindset and perspective
- Civic engagement and public policy development
- Focus on animal welfare and environmental stewardship

## **Veterinary Healthcare Delivery**

As a profession, we need to develop sustainable models of delivery that ensure as many animals as possible have appropriate access to quality medical care.

Currently, there are millions of animals that are not receiving the level of care they should for a variety of reasons, such as owner's financial or physical ability to provide care and location in remote areas. While pet ownership is increasing, patient visits to companion animal clinics are declining, a factor that undercuts compliance.

Future models of healthcare delivery will likely change how animal patients, including companion animals, livestock species, and other animals, receive care in ways that expand the scope of services provided and fundamentally change how veterinary medicine is practiced. Large corporate practices have the potential to increase efficiency through economies of scale and, along with progressive, independent practices, improve health outcomes by providing unparalleled levels of personalized medicine. Other targeted types of practices and innovative access modalities will likely emerge to provide issue-targeted care for lower-income and remotely located individuals. Artificial intelligence, machine learning, and predictive analytics will assist veterinary healthcare providers to meet patient, client, and practice goals more effectively by improving accuracy, enhancing decision-making, and increasing the probability of desired outcomes.

As new technologies evolve almost every aspect of veterinary healthcare will be affected. Technologies applied to health monitoring will increase the availability and accuracy of diagnostic tools and patient data will change the way care is provided. Better access to more easily utilized in-home and on-farm diagnostics, improvements in communication speeds and tools, and the maturation of virtual reality will converge to provide veterinary professionals the ability to connect remotely with clients and patients in a manner that allows clinical services to be competently provided irrespective of the actual location of the doctor and patient. This will help veterinarians and staff members improve efficiency, decrease costs, and minimize burnout, while simultaneously restructuring and improving the practice revenue paradigm. The quality and scope of veterinary healthcare will also expand by utilizing virtual, augmented, and extended reality.

As pet owners gain unprecedented access to information and assume greater responsibility for their pets' healthcare, it is likely that the veterinarian's role in making healthcare decisions for patients will shift from authoritative to consultative. Tech-savvy millennials already comprise a major animal owning group today and generations of pet owners to follow will certainly demand high-tech solutions for much if not most of the pet care they will seek. This trend will favor practices that are more technologically and temporally connected to animal owners.

The future veterinary healthcare system will move from collecting data to connecting, understanding, and translating data. This will require the digital enhancement and secure sharing capabilities of veterinary practice information management systems (PIMS). Evidence indicates that current PIMS have not yet reached the level of security required for internal and external protection of patient and client data. Current and future technological capabilities must allow for greater protection, security, and directed access.

It is likely that the integration between research and clinical medicine will dramatically change. Data from millions of clinical cases will become available for scientific research, and the timeline to deliver actionable data and new information to the clinician will be shortened. Structured and unstructured data hidden in fragmented medical record systems will be mined in real time and used as the driver of new, innovative, and timely investigative research to benefit veterinary healthcare.

These technical and societal expectations are not without challenges. The cost of veterinary medical education is high in relationship to entry level compensation. Work and emotional demands placed on the veterinary healthcare provider can create financial and psychological challenges to those working in the profession. The cost of animal ownership and veterinary care are a challenge for many clients, leading the veterinary profession to reconcile the cost of optimal care with the financial constraints of their clients on case-by-case basis. It is critical for the veterinary profession at all levels to expand efforts to help the public and clients grasp the value of the veterinarian and veterinary healthcare.

The veterinary profession will better leverage the entire healthcare team for the numerous benefits that result from team based care. Veterinarians who best utilize team

members will be more efficient, effective, and profitable, while reaching more animals and experiencing less burnout.

*Trends impacting the future of veterinary healthcare delivery*

- Exponential advances in technology will fundamentally alter healthcare delivery and will impact the veterinarian-client-patient relationship.
- Future veterinary healthcare delivery will give more healthcare management control to the pet owner, farmer, and producer.
- In-person clinical encounters in traditional healthcare settings will continue to be an important element of patient care and will be complemented with a more diverse range of technologies and digital interactions.
- Telemedicine will expand the reach and capabilities of the veterinarian to deliver care wherever the patient and client are located.
- Wearable monitoring systems will enable high levels of care in remote settings and enhance the quality of care, while also reducing or eliminating unnecessary hospital stays.
- New technology will enable earlier, more reliable disease detection, diagnosis, treatment, and continuous real-time monitoring.
- Patient medical records will be more efficiently created, maintained, accessed, monitored, and prudently shared for the collective good.
- State and federal licensing will ultimately accommodate necessary change in the interest of the public, animals, animal owners, and veterinarians.
- Artificial intelligence (AI) will be leveraged extensively to help veterinary healthcare organizations more effectively meet patient, client, and practice goals.
- Data will become paramount, valuable, and monetizable in ways currently not envisioned.
- Future technological advancements will increase individual productivity and potentially mitigate provider “burn out.”
- Because student loan debt is high and current income for veterinarians who do not own their practice is relatively low (and, in some instances, not sustainable), creative solutions to student debt to income ratios will continue to be sought.



- Professional education, continuing education, career advancement, and credentialing will change with innovative advancements.
- Novel financial models will be developed to reduce the financial friction and burden associated with providing high quality pet healthcare.

## **The Veterinary Role in Food Production**

The need for safe and efficient animal source food (ASF) production has never been greater. The average amount of harvestable milk, beef, pork, and poultry in the U.S. is at an all-time high, fueled by both national and global demands. The increasing value and expansion of the food animal supply means that the role of food animal veterinarians will almost certainly increase in importance to the livestock industries and the nation's food supply. It is essential that food animal veterinarians continue working with the livestock industries to identify and implement solutions that satisfy public scrutiny of livestock production, not only to ensure animal health and well-being but also to favorably affect consumer demand. Scarcity of natural resources, climate change, and increased regulation beg viable solutions.

Veterinarians may see less on-farm work and increasing emphasis on consulting and remote monitoring and care. Shifts in focus will continue into optimization of animal health for human nutrition, enhanced welfare practices to conform to consumer attitudes, integration with novel farming practices to reduce emissions, and broader knowledge of non-traditional areas like aquaculture and insects as a source of high-protein food. Food supply veterinarians must be knowledgeable about sustainable farming practices, herd health management, and control of infectious and zoonotic diseases. As sensor technologies, the Internet of Things (IOT), and protein production systems integrate, there will be increasing opportunities in the design, monitoring, and interpretation of data associated with food production and animal health.

The increasing frequency and severity of humanitarian emergencies involving food animals will also necessitate adaptation in skills. New applications of the veterinary skill set will be required through training in humanitarian response to emergencies and

disasters, like disease outbreaks, droughts, fires, and floods. Building research capacity in genomic improvements that enhance heat tolerance and disease resistance will also become increasingly important.

### *Impact of consumer demand and societal views*

Almost one third of the world's farms are championing environmentally friendly production practices. Animal agriculture has a sharp focus today on sustainable intensification, the practice of increasing agricultural production while simultaneously protecting the environment. These trends are the result of several factors, including a desire to reduce potential negative environmental impacts of food production, human health issues such as obesity and hypertension, and societal concerns for animal welfare.

The production of non-ASF as an alternative to traditional protein sources could be disruptive to traditional livestock systems. Plant-based protein alternatives continue to improve in quality and become more widely available. Laboratory grown meat products use cell culture techniques to produce protein without the need for livestock rearing or slaughter. As these alternative sources of protein become more available and are able to be produced in adequate quantities, and if consumers see them as healthy, environmentally friendly choices, their use will likely increase. This is an emerging technology where veterinarians have a chance to demonstrate their value as experts in food production systems and nutrition. Failure to do so risks being excluded from the emerging non-ASF industry and relinquishing leadership to other groups, such as food scientists, dieticians, and commercial interests.

Veterinarians have an important role to play in providing evidence-based data to their clients about pet nutrition. Veterinarians and veterinary nutritionists will play an important role in educating owners about nutrition, as well as monitoring pets' health needs and health issues that might be related to pet foods. As consumers look for alternative food sources for their pets, the importance of veterinary nutritional expertise will continue to grow.

Of all the various future scenarios discussed in this report, the future of food remains one of the most complex, significant, and uncertain in terms of its impact on the

veterinary profession. The global and domestic need for a growing supply of healthy, available, and affordable protein products is evident, but how the veterinary medical profession approaches this challenge is less clear and likely to come from a diverse set of approaches. Food animal veterinarians are a highly valuable resource for managing the complex systems associated with animal production. Veterinary schools must provide an adequate number of well-trained graduates needed to support protein consumption demands and prepare them to adapt to shifting consumer demands.

#### *Trends affecting the future of ASF production and food supply veterinary medicine*

- Food animal veterinarians will increasingly need to be proficient with issues such as animal welfare and well-being, environmental regulations, clean water, sustainable intensification of agriculture, land-use regulations, trade access, dietary guidelines, and alternatives to ASF protein.
- The quality and quantity of alternatives to ASF protein will continue to grow and these products are likely to gradually command a greater market share in both the developing and developed world
- Together with soil scientists, crop geneticists, agricultural economists, and veterinary scientists, food animal veterinarians will be asked to address the global need to feed the expanding world population.
- Individual animal care will remain important, as healthy individuals make up healthy populations; however, individual food animal care will likely become increasingly reliant on innovative technologies, large amounts of data, and remote monitoring capabilities.

### **Global Safety and Security with Veterinary Relevance**

Current trends show that there is a growing incidence of infectious and zoonotic diseases that put humans and animals at risk due to threats of disease outbreaks and global pandemics. This reality is driven by increased globalization and population connectivity, which enables diseases to reach widely dispersed populations at unprecedented speed. This area of professional emphasis will involve emergency

preparedness and response, daily consumer inquiries into food safety, companion animal zoonotic risks, and transboundary animal diseases.

There is the disruptive potential for veterinarians to either expand or lose their already underutilized role in detection, prevention, response, and awareness of infectious diseases. Other health professionals have better positioned themselves to assume future roles involving infectious disease risk mitigation. Despite the unique expertise of veterinarians in comparative medicine, without intentional leadership, the veterinary profession could find itself replaced by public health and other capable professionals in the dialogue on infectious disease prevention and control. With intentional leadership, veterinarians could and should enjoy increasing inclusion in mitigating infectious disease outbreaks and preventing global pandemics.

Veterinarians will have a leading and potentially expanding role in antimicrobial stewardship. The FDA's Center for Veterinary Medicine (CVM) has recently developed a plan for reducing the prevalence of antimicrobial-resistant pathogens. The CVM plan has three goals, each of which is heavily reliant on veterinarians for its implementation:

- Align antimicrobial drug product use with the principles of antimicrobial stewardship.
- Foster stewardship of antimicrobials in veterinary settings.
- Enhance monitoring of antimicrobial resistance and antimicrobial drug use in animals.

#### *Training for the probable future of safety and security*

A reexamination of the basic veterinary education curriculum is necessary to include instruction on how data management intersects with infectious disease monitoring and reporting. Consideration should be given for reworking prerequisites for admission into veterinary schools to include less traditional coursework and greater emphasis on data management. Veterinary school curricula should include course work on digital competency, data analytics, and the importance of collaboration with data engineers and computer scientists.

## Teaching and Learning

Education at all levels is on the brink of radical transformation. There is an urgent need for the veterinary profession to invent, innovate, apply, and adapt our educational systems to utilize the latest teaching and learning technologies and methodologies available. Learners of today and tomorrow expect technology-rich, on-demand, peer-to-peer, short duration, and active learning environments. Hands-on instruction as a central component of a culture of lifelong learning is becoming the norm.

Students expect and deserve a market-relevant educational experience, a pathway that specifically focuses on well-defined job choices. A key feature of these learning environments is rapid adaptability to accommodate newly emerging or blended professional skill sets. Accordingly, credentialing will focus on certifications given for sharply defined, practical skill acquisition, either in concert with or independent of degree endpoints. Stated another way, the learner of tomorrow will work, re-skill, work, re-skill, work, re-skill. The veterinary profession and veterinary academic institutions will adapt and evolve accordingly.

Professional medical education is shifting from a knowledge-based curriculum to a competency-based curriculum. The days of presenting facts in large lecture halls will be extensively supplanted by alternative approaches to instruction. These approaches will emphasize proficiency in data access and application, problem solving, innovation, and creativity. The professors of tomorrow will be conveners, organizers, and facilitators who are fully digitally capable, mobile, and consistently analyzing active data obtained from their students.

Currently available software already provides platforms for learners to experience rich, adaptive learning pathways and relationship driven learning. Virtual, augmented, and extended reality programs allow the learner to have quality educational experiences regardless of their location and proximity to the instructional source. Educating a workplace-ready graduate is more readily achievable, because students are not tied to a specific location. This allows them to interact with an instructor or integrate into a workplace virtually. This approach also supports connecting students and sharing educational content, instructors, and innovations among veterinary academic institutions locally to globally.

*Trends impacting the future of veterinary medical education*

- Schools of veterinary medicine will increasingly focus on learning for a lifetime to keep pace with a world of exponential change and to take advantage of expanding, alternate career paths.
- Schools will collaborate in a number of ways, such as by sharing “Big Data” with sister institutions and using Augmented Intelligence to improve learning outcomes and help develop market relevant graduates, sharing educational content, and connecting educational offerings.
- Competency based education will drive curricular development and enable more focused assessment and certification.
- Learners will become more engaged with their lifelong professional development by having greater access to multiple learning environments and increased responsibility for their own career development and credentialing.
- Areas previously considered “alternative tracks” will become increasingly mainstream, including global One Health, public health, entrepreneurship, and engineering, and schools will accommodate new relevant tracks, some not yet imagined.

**Discovery**

Veterinary medical research will continue to be influenced by academia and other research organizations. Veterinary medical training and education will be aligned with (1) a trend towards demand-driven research; (2) detection, treatment, management and prevention of disease; (3) maintenance of health in all species; (4) planetary health; (5) animals’ presence in the lives of people; (6) pedagogy, and (7) the evolution of the veterinary medical profession itself.

One Health, representing the intersection of animal, human, and environmental health, will be an area of increased focus and importance. Animals in the lives of people will also be a more common focus of increased research. Growing population pressures will drive demand for increasingly sophisticated research into the economics of food animal production.

Research within veterinary medicine will continue to span the spectrum from basic discovery to commercialization. Innovation and application will continue be the foundation upon which successful research outcomes are based. The application of basic research outcomes will engage veterinary clinicians, animal health scientists, and academicians. What is expected to change is the way in which these applications enter the broader consciousness of society, the extent to which applied research is based on efforts by multinational research teams, and the degree to which such global approaches are demanded by society globally.

A number of factors that currently play little or no role in present day research will emerge and have an increasingly influential impact on the way research is conducted. Chief among them are the availability of big data sets and relevant applications of artificial intelligence. Faster testing of ideas and hypotheses will be driven by artificial intelligence and technology-based modeling. These approaches will bring products and applications to market more quickly.

Traditional research laboratories will become rarer, being replaced by open, collaborative laboratories. Our profession will increasingly rely on computer science and digital engineering. Specifically, advances in data compilation, management, and application to investigate and assess new information from a veterinary perspective will emerge. To continue to be regarded as a major source of research expertise, traditional perceptions of what veterinarians do must broaden, and veterinary schools must emphasize the importance of veterinary research careers.

It is highly likely that sources of funding will also change. Support from traditional entities, like government funding agencies and pharmaceutical companies, will gradually decrease as a percentage of research portfolios, while emphasis on venture capital and the testing of ideas without an initial investment in infrastructure will increase.

Our profession needs to reconfigure its self-image, society's perception of veterinary medicine, and the profession's roles in the context of One Health and a more diverse national and global presence. The diversity of professional opportunities available to veterinarians must be actively marketed with the aim of recruiting veterinary students with a broader range of backgrounds than has been the norm over the last 50

years. Veterinary school curricula must evolve to afford more opportunities for exposure to diverse areas of research.

### *Trends affecting the future of discovery*

- Economic realities and research trends will pressure universities to transition from the “independent investigator” model to large research-team consortiums.
- Individuals with computer science, engineering, and data analytics backgrounds will be essential to future research efforts and should be actively recruited to the profession.
- Clinical trials as we know them will be enhanced and perhaps even replaced by newer technologically based methods leading to faster identification and effective clinical testing of new products.
- Consistent terminology should be adopted throughout the profession to better mine, interpret, and apply relevant data.
- Artificial intelligence will be the engine driving valuable market research to enhance veterinary healthcare delivery.

## **Summary and Conclusions**

We as a veterinary profession and as individual veterinarians within the profession must embrace the social, technological, and environmental disruption occurring in the world around us. Veterinary medicine will experience new demands and expectations as the roles of our members expand from traditional primary care and referral practice into technology-based specialties, especially where data-intensive skills are required. Examples include epidemiology, basic and applied research, information management, biomedical engineering, accessing resources, publications management, and communications and coordination across geographic and specialization boundaries.

In order to meet these challenges, we must increase diversity in all of its dimensions throughout the profession to benefit from novel approaches to research, education, product development and clinical practice. A central element of meeting the



demands of the future will be a constant focus on the connectivity involving animals, our fellow human beings, and the environment. Examples of this interrelationship include the human-animal bond, protein-based food security, protection against zoonotic diseases, development of innovative products and animal health solutions, and an increasing need for applying global solutions and resources to meet universal challenges.

Every veterinarian must recognize the inevitability of fast-paced change in our profession, embrace the need to adapt to the evolving landscape in which we operate, and contribute to a profession which can and will thrive into the future. The leadership of the profession must keep pace with changes affecting veterinary medicine, both external forces and those from within. Individual members of our profession can and must contribute to this dynamic process by being engaged, keeping informed, participating regularly in professional forums, expressing their expectations to our professional leaders, and maintaining a commitment to professional growth and lifelong learning. Unless we respond in a positive and meaningful way, the relevance of our profession will be at risk.

### **AVMA - AAVMC Veterinary Futures Commission Members:**

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