FOCUS FORWARD: CHARTING THE FUTURE OF VETERINARY MEDICINE

Focus Forward Event
College of Veterinary Medicine
The Ohio State University
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Challenges and Opportunities

The next 5 years will likely be an era of the greatest opportunities in the history of veterinary medicine – also an era of greatest challenges.
The single and most urgent priority for the veterinary profession is to renew its social contract and meet the changing needs and demands of society.
Only the Paranoid Survive
By Any Grove, CEO Intel
Strategic Inflection Point

New heights - Reinvention

Decline: loss of control; no precedent and old actions are ineffective
Strategic Inflection Points for Academic Veterinary Medicine

Changing societal needs and demands
Globalization
Specialization and fragmentation
Student debt load vs. income potential
Public veterinary practice – new roles and expectations
Food animal production systems and practice models
Animal welfare and impact on markets
Strategic Inflection Points for Academic Veterinary Medicine

Public health needs – new zoonoses, EID
Human-animal interface
Loss of biodiversity and ecosystems
Academic differentiation of missions
Research-intensive colleges – leveraging the health sciences
Influence of technology
Finance of higher education and loss of state support; private vs. public good
The Convergence: A New Public Health Kaleidoscope Emphasizing One Health
Convergence Model

Genetic and Biological Factors

Physical and Environmental Factors

Humans

E I D

Animals

Wildlife

Ecological Factors

Social, Political, and Economic Factors
<table>
<thead>
<tr>
<th>Year</th>
<th>Epidemic</th>
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<tbody>
<tr>
<td>1993</td>
<td>Hanta virus</td>
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<tr>
<td>1994</td>
<td>Plague (India)</td>
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<tr>
<td>1996</td>
<td>Ebola virus (Zaire)</td>
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<tr>
<td>1998</td>
<td>New Variant of CJD (UK)</td>
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<tr>
<td>1999</td>
<td>H$_5$N$_1$ influenza (Hong Kong)</td>
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<tr>
<td>2000</td>
<td>West Nile</td>
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<tr>
<td>2001</td>
<td>Anthrax</td>
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<tr>
<td>2002</td>
<td>Norwalk-like viruses</td>
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<tr>
<td>2003</td>
<td>SARS</td>
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<tr>
<td>2004</td>
<td>Marburg Virus</td>
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<tr>
<td>2005</td>
<td>H$_5$N$_1$ Influenza</td>
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<tr>
<td>2006</td>
<td>E. coli</td>
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<td>2007</td>
<td>P.I.N.</td>
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<td>2008</td>
<td>Salmonella StPaul</td>
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<tr>
<td>2009</td>
<td>H1N1 Influenza</td>
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60% of all human pathogens are zoonotic

80% of animal pathogens

Ecological generalists
TRIPLE THREAT
Changing Environment
Vulnerable Humans
Carrier Animals
The Convergence: A New Public Health Kaleidoscope Emphasizing One Health Through the Lens of Human Health
World Population Growth, 1950-2100

Population size estimates (1950-1990) and projection (1990-2025), by regions show a drastic increase in Asia and Africa.

Source: Deichner, 1995
Peri-urban Slums
International Tourist Arrivals, 1950-2020

Source: World Tourism Organization (WTO)
There is no where in the world from which we are remote and no one from whom we are disconnected.
Human Demographics

- Migration and Translocation is unparalleled
- Peri-Urban centers
- Immuno-compromised population
- Aging population - “baby boomers”
- Rapid growth in developing world
- Exposures to wildlife and vectors

- Recreational practices
- Shift to foods from animal-proteins
- Under-nutrition vs. Over-nutrition
- Healthcare vs. health promotion and prevention
- Health disparities and exposure bias
The Convergence: A New Public Health Kaleidoscope Emphasizing One Health
Last year, over 25 billion food animals were produced to help feed a population of over 6 billion people resulting in trillions of pounds of products distributed worldwide.

Projections toward 2020 indicate that the demand for animal protein will increase by 50%, especially in developing countries.
World Meat Consumption, 1983 - 2020

Source: Newcomb, J., One World – One Health: An Economic Perspective, 2004
Risk

Number of catastrophes between 1970 & 2003

Source: Swiss Re, Sigma No. 1, 2004
Human-Animal Bond

Animals are family members
Specialization: 40% of new vet classes
New services and care demanded
Care and Services for Animals

43 specializations and growing
Models for academic veterinary hospitals
Preparing interns, residents and professional students simultaneously
Food animal practitioners for the future
New competency-based outcomes
Concern with the horse racing industry
Meeting needs of global agribusiness
Integrated animal healthcare delivery
Specialty practices: colleagues–competitors
The Convergence: A New Public Health Kaleidoscope Emphasizing One Health
Earth is in the midst of its 6th mass extinction of plants and animals with nearly 50% of all species disappearing in our lifetime.

The last mass extinction occurred about 65 million years ago when the era of the dinosaurs ended.

The principle cause is human activities.
Biodiversity is responsible for helping to fend off pathogens: the “dilution factor”.

Ecological collapse will significantly impact the proliferation of future pathogens.

Examples are already occurring: malaria, hanta virus, Lyme, leishmaniasis
GLOBAL WARMING
Climbing temperatures. Melting glaciers. Rising seas. All over the earth we’re feeling the heat. Why isn’t Washington?
Biomedical Research

Fusing disciplines
Comparative medicine; need for “in vivo” scientists
Critical feature for “one health”
Continuum of basic and applied research
The progression of the profession
The Promise of Biomedical Research

Advancement of science
Laboratory animal medicine
Clinical trials
New discoveries – techniques, treatments and products
Improvement of human and animal health
“Big Field: Small Profession”

- Calvin Schwabe
Key Academic Challenge

The most critical challenge facing universities and colleges will be to develop the capacity for change.
“The future is not some place you are going, but rather one that you are creating. The paths are not found and the activity of making them changes both the pathfinder and the final destination.”

“Leading the Revolution”
-Gary Hamel
Goals of the Focus Forward Conference

To review and explore the critical issues facing the profession and college

To gain a better understanding of these issues and generate ideas on to address and respond to them

To recommend actions that will ensure that the CVM will be well positioned for success in this changing environment

To help prioritize these recommendations and ideas and link them to the CVM vision