

or inherited disease, or as a result of iatrogenic transmission. Prion diseases generated great public concern after an outbreak of bovine spongiform encephalopathy occurred in many European countries and scientific evidence indicated its transmission to humans.

Research in prion diseases is hampered by certain unconventional properties of the presumed etiologic agent and the long incubation period associated with these diseases. Most conventional laboratory methods used to study viruses and bacteria may not be applicable. In the past, the etiologic agent of transmissible spongiform encephalopathies was believed to be a slow virus, primarily because of its transmissibility, ability to retain infectivity after filtration, and long incubation period. The successful transmission of scrapie, a centuries-old prion disease of sheep, to mice in 1961 greatly facilitated identification and characterization of the scrapie agent. Several characteristics of the scrapie agent suggest that the agent is not a virus but is likely composed primarily of a protein. The agent's characteristics include the absence of disease-specific nucleic acids; resistance to radiation, nucleases, and standard sterilization and disinfection methods; and inactivation by protein-modifying procedures. These observations and purification of the scrapie prion in the early 1980s led to widespread acceptance of the prion hypothesis.

Since the 1980s, both the scope and nature of prion disease research has progressed rapidly. The economic and human cost associated with the bovine spongiform encephalopathy outbreak fueled the need to better understand the etiologic agent of prion diseases and their basic transmission mechanism. *Prions and Prion Diseases: Current Perspectives* summarizes the advances in prion disease research. It expands on a previous volume edited by David Harris that was published in 1999 under the title

*Prions: Molecular and Cellular Biology*. The book's 10 chapters describe the biochemical and molecular features of prions and the normal prion protein, various laboratory methods for studying prions, and advances in the pathogenesis and immunology of prion diseases.

Chapters 2 through 6 detail laboratory methods developed to study the unconventional agent of prion diseases. Chapter 2 describes a cell-free conversion reaction system to study how pathogenic prions associated with different species interact with host cellular prion protein. Such systems have been used to study the biochemical mechanisms of prion diseases and can potentially be used to screen new therapies for their effectiveness against prion diseases. Chapter 3 describes the mechanisms underlying the biosynthesis and cell biology of the cellular prion protein by using cell culture systems. Understanding the detailed biochemical properties of the cellular prion protein will help show the molecular basis of its interaction with, and conversion to, the pathogenic prions. Subsequent chapters in the book describe other laboratory methods, including transgenic mouse models, which can be used to investigate the transmissibility of prions among different species, the extent and degree of the "species barrier," the mechanism of prion propagation, and prion disease pathogenesis.

Overall, the book provides a wealth of information on the progress made in understanding the molecular, immunologic, and genetic aspects of prion diseases and the laboratory methods used to study them. This book will be valuable to prion disease researchers, to scientists who want to gain more knowledge about the progress made in understanding the mechanisms of prion propagation, and to persons just beginning to study these unconventional, fatal brain diseases.

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## Veterinary Institutions in the Developing World: Current Status and Future Needs

**Cees de Haan, Editor**

**World Organisation for Animal  
Health Scientific and Technical  
Review**

**ISBN 92-9044-605-6**

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Euros (including airmail postage)**

Veterinary institutions help improve animal health by providing training that will enhance livestock production and trade and protect public health. The increasing role of animals in emerging infectious diseases has emphasized the need to improve veterinary services and integrate them with public health services more effectively.

The World Organisation for Animal Health devoted its Scientific and Technical Review (Volume 23, No. 1, April, 2004) to addressing these weaknesses and the rapidly changing environment of veterinary services in developing countries. The issue consisted of an introduction and summary by the coordinator and contributions from 28 persons organized into six sections. The first section

examines the relative roles of the public and private sectors and included two papers on economic frameworks and two papers on technical experiences in providing public services by the private sector. A second section emphasizes changing international sanitary and phytosanitary regulations and how veterinary services could help meet these new requirements. The third, fourth, and fifth sections detail experiences in providing services across the developing world. The most common experiences include using paraprofessional staff, providing public services by the private sector, conducting surveillance, and monitoring and controlling infectious diseases. A final section explores anticipated financial and institutional capacity, research, and professional training needs.

Examples provided in the book detail many innovations relevant to delivering health services, particularly for providing access for poor and mar-

ginalized persons. However, the examples do not provide an analysis of different experiences across countries and systems. Veterinary services have evolved and should respond to social, economic, and political realities. Guidance should be provided to the decision makers who want an analysis of what works under different circumstances.

From an infectious disease perspective, the focus is on promoting livestock production and trade, with less emphasis on public health and food safety issues. This emphasis is consistent with current veterinary policy and practice in most developing countries, where economic development is more relevant than public health concerns. The World Organisation for Animal Health, which is responsible for international animal and animal product trade standards under the World Trade Organisation, also focuses on this perspective.

The book reflects the constraints and broad mandates of veterinary services in developing countries and the potential short-term conflicts of interests between livestock commerce and public health. However, the book does not address links between veterinary and public health services, including common surveillance, information, and disease control systems. Because the book highlights the veterinary components of disease control systems, it provides an important resource to develop such systems in the future.

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## The Ellison Medical Foundation Senior Scholar Award in Global Infectious Disease Request for Letters of Intent - Deadline: March 9, 2005

The Ellison Medical Foundation, established by Lawrence J. Ellison, announces the fifth year of a program to support biomedical research on parasitic and infectious diseases caused by viral, bacterial, protozoal, fungal or helminthic pathogens that are of major global public health concern but are relatively neglected in federally funded research within the U.S. Letters of intent for the Senior Scholar Award in Global Infectious Disease are due in the foundation office by **March 9, 2005**.

The intent of the Global Infectious Disease program is to focus its support by placing emphasis on:

- Innovative research that might not be funded by traditional sources, such as projects involving the application of new concepts or new technologies whose feasibility is not yet proven, projects seeking commonalities among pathogens that might yield new insights into mechanisms of disease, projects seeking to bring together diverse scientific disciplines in the study of infectious diseases, or support to allow established investigators to move into a new research area.
- Aspects of fundamental research that may significantly impact the understanding and control of infectious diseases, but have not found a home within traditional funding agencies.

Those submitting successful letters of intent will be invited to submit full applications. Evaluation is performed by a two phase process involving the Foundation's Global Infectious Disease Initial Review Group and Scientific Advisory Board. Reviewers will pay close attention to arguments as to why the proposed work is unlikely to be supported by established sources. Up to ten Senior Scholar Awards will be made in the Fall, 2005.

**Eligibility:** Established investigators employed by U.S. 501(c)(3) institutions, or U.S. colleges or universities, are eligible to apply. There is no limit on the number of Senior Scholar letters of intent submitted from any one institution. Whereas the Foundation only makes awards to U.S. nonprofit institutions, the Global Infectious Disease program encourages formation of research consortia between U.S. institutions and those in other disease-endemic countries, as through a subcontract mechanism, when such collaborations will benefit the proposed research. Current or past Senior Scholar Awardees are not eligible to apply.

**Terms of the Award:** Each award will be made for up to \$150,000 per year direct cost, with full indirect cost at the institution's NIH negotiated rate added to that, for up to four years.

**Complete Application Details:** For further information, see the foundation website at <http://www.ellisonfoundation.org>.

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