



MED • VET • NET NEWS

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Communications Unit

This month, MVN News provides an overview of Workpackage 6: Development and application of geographical information systems (GIS) and spatio-temporal methods in the epidemiology of foodborne bacterial zoonoses. We also introduce our Science Communication interns, Dr Emmanuelle Bensaude and Dr Sonia Tellez.

There is an interesting article on the history of Med-Vet-Net, describing the formation and evolution of the network through the 'Club 5' group.

Also, the project manager gives us a brief description of the Workpackages for the second Joint Programme of Activities (JPA2).

Finally, we are delighted to announce the promotion of Workpackage Leader for Workpackage 3, now Professor, Peter Silley.

GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

Workpackage 6 : Development and application of geographical information systems (GIS) and spatio-temporal methods in the epidemiology of foodborne bacterial zoonoses.

Introduction

Geographical Information Systems (GIS) can be regarded as the high-tech equivalent of the map. They are computer systems which capture, store, check, integrate, manipulate, analyse and display data relating to positions on the surface of the Earth. GIS provides the facility to extract different sets of information from a map (e.g. roads, settlements, vegetation etc) and use them as required. For example, one might point at two buildings, ask the computer to describe each one from an attached database and then calculate the best route between them. The data handled by a GIS or spatial information system may be handled as different layers where each layer holds data about a particular kind of feature. Layers of data are organised such that they are easy to study and to manipulate using statistical analyses.

GIS allows the user to locate and identify features, spot trends and patterns, find optimal paths between places and forecast and model events. It also provides a spatial tool to aid decision making and risk assessment. The information obtained from a GIS can be applied to a wide variety of situations, from managing epidemics to monitoring global warming and planning the delivery of health services, for example.

The use of GIS and spatio-temporal methodology in public health is now widespread and its' potential in monitoring animal disease is becoming increasingly important. Use of GIS has many benefits, it can allow continuous analysis of data, production of speciality maps, improved emergency preparedness, automation of routine tasks, improved access to data, centralisation of data and rapid production of reports and maps

For example in the USA, scientists are using GIS to map the transmis-

sion, survival and movement of pathogenic bacteria through the environment and potentially into the food supply. Here, the epidemiological assessment of foodborne disease began with farm-level sampling to determine the occurrence and migration of specific bacteria. The resulting data are being layered with data about weather conditions, topographical information, farm practices and other information to create a visual representation. The objective is to create a model that can be applied to future disease outbreaks and map how a bacterium moved from farm livestock to the processing plant and, finally, the human digestive track.

Also, the Veterinary Laboratories Agency in the UK currently has a team which routinely uses GIS in:

1. Modelling - for planning and forecasting activities like using road networks to allocate samples to laboratories or mapping disease outbreaks.
2. Analysis - of information to reveal the relationships between various complex datasets like bovine TB and badger habitats.
3. Cartography - map production for paper and web publications.
4. Remote Sensing - using remotely sensed temporal data to detect changes in land use and how this might impact on the risk of animal disease.
5. Programming/Customisation/Development - application development linking the GIS to powerful statistical packages or serving spatial information over the Internet.

Aims of Workpackage 6

The overall aim is to establish a GIS-network and build up GIS capacities for analysing exposure to major bacterial food-borne pathogens, such as *Salmonella* and *Campylobacter*

within various epidemiological contexts. This will be achieved by:

1. The development of a GIS competence catalogue for European institutions involved in surveillance of food-borne pathogens and diseases.
2. The evaluation of current and future GIS needs within Europe.
3. Building a GIS capacity, including training and provision of technical assistance.
4. Undertaking a pilot study using available existing data.

PROJECT MANAGEMENT

Second Joint Programme of Activities (JPA2)

The process of selection and commissioning of new workpackages for JPA2 has now been completed. The summaries of the eleven projects selected are given below. The new workpackages will start in March 2006 and have varying durations. Next month, the planned activities for the three non-research workpackages will be detailed.

WP21: Molecular epidemiology of *Salmonella* Genomic Island 1 (SGI)

Duration: 24months

Leader: Dik Mevius

SGI1 is a chromosomal gene cluster of variable length (up to 43 kb), originally described in *S. Typhimurium* DT104, but recently detected in other serovars (i.e. Agona, Albany, Newport, Java). DT104 is a pandemic serovar associated with enhanced virulence and multi drug resistance. The fact that SGI1 is transmitted to other serovars, often resulting in epidemics of *Salmonella* infections in food animals and humans, is a health risk for both humans and animals. Although horizontal transfer between *Salmonella* serovars may be the mechanism by which SGI1 spreads, a biological reservoir in other organisms cannot be excluded. This project aims to study the distribution and characteristics of SGI1 in enteric bacteria (e.g. *Salmonella*, *Shigella*, *E. coli*) in a large collection of animal and human isolates. The result will be a database of strains harbouring (parts of) SGI1. This database will be a basis for future virulotyping, and risk assessment of isolates harbouring SGI1.



GIS can be thought of as a high-tech map

WP22: Zoonotic Protozoa network (ZOOP-NET) - *Cryptosporidium* and *Giardia*

Duration: 18months

Leader: Simone M Cacciò.

In spite of the widespread infections caused by *Cryptosporidium* and *Giardia* in both humans and animals, the role of animals as reservoirs of these pathogens for humans has not been fully elucidated. In this Workpackage, human and animal *Cryptosporidium* data from Europe collected within the ongoing Workpackage CrypNet, will be integrated and another important protozoa, *Giardia*, will be incorporated. The main objectives of the proposal are:

- i) to harmonise molecular methods useful to detect these protozoa and to distinguish human from non-human pathogens;
- ii) to establish, for *Giardia*, and to maintain, for both *Giardia* and *Cryptosporidium*, repositories of standards (nucleic acids and cysts/oocysts);
- iii) to perform validation tests for both *Cryptosporidium* and *Giardia* in the participating laboratories using a panel of DNA prepared from isolates collected by all partners during the project;
- iv) to identify an agreed panel of highly discriminatory markers for the analysis of species, genotypes and subtypes;
- v) to develop online databases to store and analyse the data produced during the project.

WP23: Prioritising foodborne and zoonotic hazards at the EU level

Duration: 36months

Leader: Arie Havelaar

The project will consider methods and collect data to support priority setting of foodborne and zoonotic pathogens at the European level. Available data will be integrated in two indicators for the societal impact of foodborne and zoonotic illness: disease burden (in Disability Adjusted Life Years, DALYS) and cost of illness. Attention will be given to existing as well as emerging zoonoses. The project will be based on methods developed in the Netherlands and will integrate data from other Member States, if available. Collaboration with non-European partners who pursue similar goals will be established. The information will be made available in a user-friendly software interface.

WP24: Comparison of *Campylobacter* risk assessment models: Towards a European consensus model?

Duration: 18months

Leader : Maarten Nauta

The different existing risk assessments on *Campylobacter*, developed by Med-Vet-Net partners, will be compared to explore differences and similarities, and to come to a consensus about the best risk assessment methodologies appropriate for different risk management questions. It is expected that the Workpackage will focus on *Campylobacter* in broiler meat, but other routes will be considered as well. First, an initial meeting will be organized to exchange modelling experiences, to indicate the specific topics of interest and to discuss the research plans. Next, a research phase will follow in which a core team of partners visit each other and collaboratively write a report and a scientific paper on the comparison of models and the feasibility of a "consensus model". Here, other Workpackage partners will predominantly have an advisory role. After a second (public) meeting, the Governing Board of Med-Vet-Net will be advised

SCIENCE COMMUNICATION INTERNSHIP - WELCOME!

The intership has just begun and here we introduce our two interns;

Emmanuelle Bensaude.

Emmanuelle studied Chemistry and Biochemistry at the University of Paris VI, before doing an MSc in Molecular Biology and Plant Biotechnology at Toulouse III. She has been working at the Veterinary Laboratories Agency since 1998, where she studied for a PhD on the molecular interactions between classical swine fever virus and host cells. Emmanuelle's areas of scientific expertise are molecular diagnosis of pestiviral diseases, and viral strategies to evade their host innate immune responses. She is currently one of the lucky Med-Vet-Net interns studying Science Communication. Outside work, Emmanuelle enjoys hiking, cooking for friends and playing with her two-year old son.



Sonia Tellez.

Sonia is a veterinarian, with a B.Sc. and Ph.D. from Universidad Complutense of Madrid, Spain. The title of her Ph.D. was "Detection frequency and characterization of *Salmonella* spp. isolated from reptiles and amphibians" and was completed in 2003. Since she finished her B.Sc. she has been working as a researcher in clinical microbiology, studying zoonotic bacteria such as *Salmonella*, *Campylobacter* and *Clostridium* at the Animal Health Department of Veterinary Faculty at Complutense University. Between 2001 and 2002 she has worked at the Investigation Centre of Animal Health (CISA) researching bioterrorism-related anthrax. Her main areas of expertise are foodborne pathogens, clinical microbiology of livestock and exotic animals and disease epidemiology. She will soon begin work as the manager of the Communication Department at the soon-to-be-formed Complutense Institute of Animal Health (ICSA).



on the possibility and desirability of the development of a software package with a European consensus model for risk assessment of *Campylobacter*. If, after twelve months, the Board's decision is positive, a user friendly risk model will be developed as a software package that may be applicable to many interested parties in Europe, and can be used as a harmonised European decision tool to support risk management on campylobacteriosis. Development of this model will be accompanied by a pilot for harmonised quantitative data collection in Europe, to meet the data needs of the model to be developed.

WP25: A forgotten pathogen in our midst? – Development and application of improved diagnostics for Q fever.

Duration: 36months

Leaders : Sally J. Cutler & Veronique Duquesne

The epidemiology of Q-fever caused by *Coxiella burnetii* in Europe is largely unknown. Q-fever is well-recognised as a neglected zoonosis and considered to be re-emerging, and has thus been identified in the science strategy as a knowledge and skills gap. Methods for surveillance are limited and their application sporadic, whilst existing data is localised and poorly standardised. Detection in foods is largely untested, although recently assays based on the polymerase chain reaction (PCR) have enabled detection in bulk milk, eggs and mayonnaise samples. Advances in technical capabilities are required to progress detection, diagnosis and typing, in both humans and livestock, in partner institutes, which will allow comparability of data and sharing of resources. The involvement of epidemiologists, detection and pathogenesis experts within the Workpackage will establish a critical mass of expertise and should encourage the

development of a roadmap for future research in this area. We are particularly keen to exploit the existing genome sequence (and those currently being produced), in order to devise molecular typing tools. Application of novel typing methods will enable preliminary investigations to be conducted on the pathogenesis of these organisms.

WP26: Virulotyping of new and emerging *Salmonella* and VTEC

Duration: 24months

Leader: Roberto Marcello La Ragione

The identification of new and emerging pathotypes of *Salmonella* and verotoxin-producing *Escherichia coli* (VTEC) is essential if intervention strategies are to be developed. Virulotyping is a newly emerging genomic-associated approach to bacterial molecular epidemiology involving the use of DNA arrays designed to determine the presence or absence of potential virulence-related genes. Institutes within the network have established different genotypic and phenotypic typing methods, which they are using to characterise virulence determinants in *Salmonella* and VTEC. Up to ten known virulence determinants for *E. coli* and *Salmonella* will be selected. Specific PCR primers and amplification conditions for the selected virulence determinants will be developed. Partners will use these standard conditions to investigate selected strains. The results will be curated into a simple database. Strains showing novel virulence combinations will be selected for further analysis using 3 existing *E. coli* and *Salmonella* virulence gene microarrays. This will enable a large number of virulence determinants and their distribution within the subset of strains selected to be investigated and allow the comparison of the three different array platforms. The preliminary PCR results will validate the microarray

data and establish whether microarrays can be used routinely for diagnosis and typing of *Salmonella* and *E. coli*.

WP27: Harmonisation of *Trichinella* infection control methods, quantitative risk assessment in pigs and an early diagnosis in humans to increase treatment efficacy
Duration: 18months

Leader : Pascal Boireau

Since human trichinellosis in the EU is characterised by a low frequency of infection but with a high human risk of disease, there is a need to develop an algorithm that permits a prompt diagnosis to prevent the spread of infection and allows for early and effective treatment. Furthermore establishment of a database on human infections, identification of molecular markers to trace back the infection from fork to farm, the use of GIS to map the infection among wildlife and the maintenance of the repository of *Trichinella* reference strains, will represent additional important tools to monitor and control infection in EU countries. Development of these instruments, the acquisition of information on wildlife infection, the risk analysis of pork consumption and the joint work between physicians and veterinarians will help to evaluate the feasibility and sustainability of the new legislation on this zoonosis in the initial years.

WP28: Methods of attributing human zoonotic infection with different animals, food and environmental sources
Duration: 36months

Leader: Tine Hald

To identify and prioritise effective food safety interventions, it is critical to attribute human zoonotic infections to the sources responsible. A wide variety of approaches and data for source attribution are used around the world and in the process of priority setting, it is very important to understand the differences and limitations of these approaches. We intend to apply, compare, discuss and recommend the

appropriate use of five of the most commonly applied approaches: microbial subtyping, risk (exposure) assessment, analytical epidemiological studies (including case-control studies of sporadic cases), analysis of data on foodborne disease outbreaks and, finally, intervention studies.

WP29: Surveillance of Emerging Antimicrobial Resistance Critical for Humans in Food, Environment, Animals and Man

Duration: 36months

Leader: Bruno González Zorn

Appropriate laboratory-based studies are required to demonstrate the possible transfer of resistant bacterial strains and/or resistance genes from animals to humans. Therefore, a virtual research group within Med-Vet-Net will be established with the capacity to analyse antimicrobial resistance determinants in bacteria from the environment, humans, food and animals. Med-Vet-Net possesses a unique bacterial strain collection, with bacteria from all possible origins. This collection enables retrospective and prospective genetic analyses of selected resistance determinants. In the first objective these strains, their antimicrobial profiles and sources, in bacterial collections throughout the network will be catalogued. In the second objective, resistance induced through 16S rRNA methylases in Gram negative and Gram positive bacteria, which comprise a major novel threat in Europe, will be investigated. In the final objective, as emergence of resistance is a dynamic process, emerging antimicrobial resistance patterns within the EU will be monitored so that any issues can be focussed on and respond to.

WP30: Towards a combined microbiological and epidemiological approach for investigating host-microbe interactions of *Campylobacter jejuni* - CAMPYNET III

Duration: 18months

Leader: Eva Olsson Engvall

CAMPYNETIII will develop a discussion network between microbiologists and epidemiologists, with emphasis on host-pathogen interactions, with particular relevance to campylobacteriosis in humans. Three discussion meetings are planned. At each meeting updates on host pathogen interaction will be provided by a recognized expert in the field. The first workshop will update participants in the developments of previous CAMPYNET projects and will establish the new working group. This network forum will discuss the suitability of currently available tools for the investigation of (i) *Campylobacter* virulence characteristics, (ii) human host responses and (iii) the type of information epidemiologists need from microbiologists. The project will agree, with the assistance of internationally recognised experts, a strategy for microbiological and epidemiological investigation of human illness associated with *C. jejuni*. In addition the CAMPYNET database will be maintained and expanded, and the CAMPYNET website revived, to provide (i) information of new research of relevance to host microbe interaction (ii) the agreed combined microbiology/epidemiology strategy and (iii) a set of recommendations for best-practice tools/methods for investigation of host-pathogen interaction.

WP31: Food producing animals as a potential source of emerging viral zoonoses (ZOOVIR-NET)

Duration: 24months

Leader : Franco Maria Ruggeri

Viruses are not usually considered an important cause of foodborne zoonoses. Nonetheless, the changing epidemiology of several viruses as well as new concepts in animal health and the food chain make it necessary to investigate possible risks associated with virus infected animals. This WP aims to evaluate the potential zoonotic role and/or foodborne transmission of emerging viruses like porcine hepatitis E virus (SHEV), Anellovirus and Encephalomyocarditis Virus (EMCV), as well as tickborne encephalitis virus (TBEV). Virological assays and epidemiologic data available in the countries participating in the Workpackage will be assessed and implemented. Diagnostic and epidemiologic studies on the prevalence of swine viruses will be performed, and identified viral strains will be characterized and compared by sequence analysis. Selected strains will be cloned, and recombinant viral antigens will be used for immunological assays and production of polyclonal and monoclonal reagents. Information generated will help us understand the role of the pig and derived products in transmission to humans and to develop risk assessments and codes of practice to minimise transmission.

For TBEV, integrated virological and epidemiological investigations in humans and farm animals will be performed, and foodborne transmission, particularly via unpasteurised milk, will be investigated. Although not involved in pig pathology, inclusion of TBEV will help extend to the Workpackage network unusual aspects of virology and epidemiology, presently limited to few countries.

PEOPLE

We welcome Pascale Briand as the new Director of AFSSA.

Appointed in May 2003 as Director of the Interministerial Anti-Cancer Programme, Pascale Briand went on to lead "Plan Cancer", a priority project for the French President. After two years in post, co-ordinating an unprecedented level of national action in this area, implementation of "Plan Cancer" was taken over by the new National Cancer Institute, launched in May 2005. Since October 2004, Pascale Briand has chaired the committee charged with examining applications to import human embryo stem cells and has also been appointed to the Board of the French National Authority for Health.

A native of Nantes, Pascale Briand was previously a technical adviser on research and bioethics for the French Ministry of Health and deputy director of the Ecole Normale Supérieure (rue d'Ulm - Paris). Her multidisciplinary educational background, as a doctor of medicine with a doctorate in biochemistry, led her to take up appointments in research as the director of an Inserm research unit (1994 to 2002), at the Institut Cochin, as official representative for the Department of Biology, Medicine and Health at the Ministry for Research (1994 to 1998) and as head of the Biotechnology Unit at the Ministry for Higher Education and Research (1996 to 1998). Pascale Briand is also a past member of the Committee on Genetic Engineering (1991 to 2000), the Scientific Council of the French National Agency for Aids Research (1994 to 1998), of the National League Against Cancer (1994 to 2000), of the Génopôle programme and of the Association for Cancer Research, where until 2002, she chaired the Ile de France regional committee.

She holds an award from the National League Against Cancer (1994) and has published a number of scientific articles on subjects from gene therapy to cancer.

A Knight of the Legion of Honour, in 2000 Pascale Briand was awarded the Grand Prix of the French Academy of Medicine for her work.



CLUB 5 - THE HISTORY OF MED-VET-NET

The creation of Med-Vet-Net is closely associated with a network of veterinary institutes known as "Club 5". This began as an informal discussion group which had an annual meeting and involved representatives from AFSSA (at that time CNEVA) and SVA. This meeting was an opportunity for young scientists to present and discuss topics of common interest and for them to find out what the 'state-of-the-art' is at other European institutes. At the same time, similar meetings were held between AFSSA and VLA. For practical reasons the two meetings merged in the year 2000 and in 2003 DVFV (former DVI) and CIDC joined the network. The name "Club 5" was then coined to identify this informal network.

Benefits of the network included the sharing of experiences and the transfer of skills and technology between members. Another positive outcome of these meetings was the opportunity to engage young scientists in networking at the European level, to help them identify and enter into meaningful collaboration in their own areas of research.

The network also brought about the possibility of joint EU research proposals to support scientific work of common interest. In 2001, at around the time that the agenda for the 2002 annual VLA meeting was being discussed, Lars-Erik Edqvist the former Director General of SVA, proposed that a strategy be developed regarding ways in which this network could benefit from the new sixth framework programme. This idea led to lively discussion at the VLA meeting and resulted in the submission of an Expression of Interest (EoI) to the Commission for a network of excellence. An EoI document was prepared by a small working group initially comprising Diane Newell (VLA), Johan Bongers (CIDC), Max Schwartz (AFSSA), Henrik Wegener and Knud Borge Pedersen (DVFV) and Bo Sundqvist (SVA). In this EoI a network of excellence (FOOD VET-NET) that built on the existing network of five national veterinary reference institutes was proposed.

However, this network was not sufficient with regards the formation of a network for the prevention and control of zoonoses. So it was decided that we prepare a fully competitive application to the call in the Work Programme. This required an increase in the number of participating institutes and the remit was broadened to include public health institutes. The rest, as they say, is history and Med-Vet-Net is thriving!

Club 5 remains active and a small group attended a meeting in Uppsala organised by SVA to discuss future collaboration (see photograph). A further meeting is to be held in Paris next spring.



Bo Sundqvist

The Club 5 meeting in Uppsala, Sweden

ADMIN BUREAU UPDATE

Financial reporting of previous activities (Month 1 to Month 12)

Financial report forms for the first year were sent to all Partner Institutes during August. Partners Financial Officers and Institute Representatives worked on the Med-Vet-Net budget and completed finance forms, returning them by the deadline of September 14. The Administration Bureau has a tight schedule if we are to provide the necessary financial information to the Co-ordinating Forum and Governing Board and send the annual report to the EC on time. By the end of September, each institute must also provide an audit certificate for the first year of activity. This allows the network to put into practice the requirements for Framework Programme 6 financial reports. We can then begin the second year afresh, with regards accountancy, putting into practice financial procedures that have been defined and adopted since the beginning of the project. The 'financial forms and audit certificate' package from all partners will be collated by the Administration Bureau and added to the annual report sent to the EC.

Budgetary preparation of the second round Workpackages (from month 19 – March 2006)

Budgets for the second round of Workpackages are now drafted. The average budget of

each Workpackage is €170,000 per Workpackage for 18 months. These budgets will be presented to the Co-ordinating Forum for comment and to the Governing Board for validation during the forthcoming Co-ordinating Forum and Governing Board meetings. Once validated by the Governing Board, the second round of Workpackage proposals will be added to the annual report sent to the EC. As with the first round of Workpackages, contracts for the second round will soon be issued, in order to confirm the duties of each partner and allow payment from the Co-ordinator to partners. This will be completed by December 2005.

Financial Tour 2005

The Administration Bureau has continued its financial tour with a visit to the National Institute of Hygiene in Poland (PZH) at the beginning of September. There is only one more institute to visit, the Health Protection Agency in the UK (HPA).

Next Workpackage 01 meeting

The three core meetings of the Virtual Institute: Co-ordinating Forum, Advisory Panel and Governing Board meetings will take place at AFSSA during late September and the beginning of October. All participants have now registered for the meeting. Background documents are being sent to all participants of these meetings. It has come to our attention that some participants have not booked their accommodation and they are reminded to do so as soon as possible.

Admin Bureau

PEOPLE

We welcome Dr Michel Pepin the new Institute Representative for AFSSA.



He is a veterinarian with a Ph.D. in microbiology from the University Claude Bernard in Lyon, France. He is a senior scientist and director at AFSSA-LERPAZ. Michel's scientific interests and experience are in risk assessment:

- From 1982 he has been a specialist in infectious diseases of small ruminants (sheep & goats): rabies, caseous lymphadenitis, chlamydiosis, lentiviruses of small ruminants [SRLVs], Border disease, Q fever and mastitis of sheep
- He became head of the "Pathology of Small Ruminants" group in Sophia Antipolis (CNEVA & AFSSA) (1994-2004)
- He was chairman of the European COST action 834 on small ruminant lentiviruses (SRLVs) (1997-2002)
- He was a member of the French Committee on Transmissible Spongiform Encephalopathy (AFSSA, 2001-2004)
- Now, he is a member of the Panel on Animal Health and Animal Welfare (AHAW) of EFSA (European Food Safety Authority; 2003-2006)

CONGRATULATIONS..

We are delighted to announce that Dr. Peter Silley, leader of Workpackage 3 has been appointed as Visiting Professor of Applied Microbiology within the School of Life Science at the University of Bradford, UK. Peter has been teaching for a number of years and now looks forward to playing a more prominent role within the university. The appointment comes at an opportune time as Peter is also leaving Don Whitley Scientific (DWS) in order to concentrate more fully on MB Consult, his highly successful microbiological consultancy business. MB Consult is heavily involved in the veterinary pharmaceutical sector and Peter will bring this experience to the University, giving students an awareness of some of the issues facing microbiologists in industry. Paul Walton, DWS managing director, said: "Our sincere congratulations to Peter on this new appointment. He has been an enormous influence within Don Whitley Scientific for over fifteen years, contributing very significantly to our growth, development and profitability – directors and staff wish him and his family well for the future." All at Med-Vet-Net pass on their congratulations!



...from all at Med-Vet-Net!!!

EXTERNAL CONGRESS

Companion Animal Vaccines - development, efficacy and use Birkbeck College Room B04, Malet Street London 2 November 2005

Meeting's Highlights include:

Fundamental Immunology: What are we trying to achieve with vaccines?

Prof Michael Day, University of Bristol.

Factors affecting the serological response of companion animals to rabies vaccination.

Dr Anthony Fooks, Veterinary Laboratories Agency.

Immune senescence - How ageing may influence vaccine efficacy in the cat.

Dr. David Campbell - University of Ulster.

Do dogs vary in their response to Rabies vaccination?

Dr. Lorna Kennedy, University of Manchester.

AIDS vaccine studies in the feline immunodeficiency virus model.

Dr. Stephen Dunham, University of Glasgow.

From Research to Pets: The challenges for the Industry.

Dr. Samuel Thevasagayam, Pfizer Animal Health.

The Deadline for early registration is 10 October. The early registration fee is £80 (£70 for IBMS members; £40 for students)

After the early registration deadline the fee is £160 (£80 for students)

Please visit www.regonline.co.uk or email: enquiries@euroscicon.comnr-ifl/

The International Society of Chemotherapy, Slovene Society of Chemotherapy, FESCI and ESGAP Disease Management Series symposium entitled "Appropriate Use of Antimicrobials" Bled, Slovenia. 13 - 15 October 2005

The symposium will deal with hot topics of antimicrobial use in various clinical settings in the hospital as well as the community. It will address comparative and appropriate usage in different countries in the world and interventions in controlling consumption and resistance. Most experts and renowned scientists in the world of infectious diseases will debate on how to use antimicrobials in the world of growing bacterial resistance and propose solutions on how to approach patients and run effective

antimicrobial policies in hospitals, ambulatory care and nation-wide.

We strongly believe that your participation at the symposium will contribute to the level of the debate and provide you some valuable information and contacts.

Bled is an Alpine resort with calm and stimulating atmosphere.

Bojana Beovic

President of Slovenian Society of Chemotherapy

Kurt G Naber

President of International Society of Chemotherapy

Jean Claude Pechere

Past President of International Society of Chemotherapy

Hellen Giamarellou

President of FESCI

Inge C Gyssens

President of ESCMID Study Group on Antibiotic Policies (ESGAP)

Further information is available at www.albatros-bled.com/dms-2005 or ISC website

Communicating European Research 2005 International Conference Brussels Exhibition Center (Heysel) 14-15 November 2005

Based on the very positive feedback from the 2004 conference, this event will focus on the manifold aspects of science communication and will provide an excellent forum and meeting place for scientists, communication professionals and journalists. The conference will also take stock of the way towards the Seventh Framework Programme.

Around 3000 participants including project co-ordinators, journalists and other communication professionals, press officers and representatives from research organisations will meet to promote mutual understanding of their respective roles, to share best practice and to define strategies to improve communication, outreach and dissemination of research results to the public and the press at a European level.

An exhibition will feature selected research initiatives as well as the communication strategies of research organisations.

At the time of CER 2005, the preparation of the 7th Framework Programme will be in full swing and the current state of play will be presented. Please visit http://europa.eu.int/comm/research/conferences/2005/cer2005/index_en.html

COURSES

Distance education course on the OIE (World Organisation for Animal Health), which deals with topics on:

OIE History/Objectives/Operations
The OIE and International Trade
Development/Adoption of Standards
Content/Implementation of Standards
FMD: A Model for Risk-Based Trade Decisions
OIE's Animal Health Information System
An Introduction to Risk Analysis
OIE in Animal Production Food Safety
The OIE and Animal Welfare
The OIE and Aquatic Animal Health
OIE/The World Bank/Capacity Building
Future Challenges and Opportunities

INTERNATIONAL FOOD LAW DISTANCE EDUCATION CERTIFICATE PROGRAM

Our International Food Law Distance Education Certificate Program received the 2003 Excellence Award in College and University Distance Education from the American Distance Education Consortium (ADEC). In the five years since the inception of our first course, we have had over 500 students from 50 countries participate in our courses.

Eight courses are available completely over the Internet fall semester 2005, which began August 29, 2005, and spring semester, which begins January 9, 2006:

International Food Laws and Regulations (overview course)
United States Food Regulation
European Union Food Regulation
Latin American Food Regulation
Canadian Food Regulation Middle East Food Regulation (IN DEVELOPMENT)
Asian Food Regulation (IN DEVELOPMENT)
Codex Alimentarius (The Food Code)
IPPC (International Plant Protection Convention)
OIE (World Organisation for Animal Health)
Please visit: <http://vu.msu.edu/preview/a>

CONTACT US

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Contributions and suggestions are welcome.

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