



MED • VET • NET NEWS

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Med-Vet-Net Communications Unit



In this issue of Med-Vet-Net News we complete our series of overviews of Med-Vet-Net projects with Workpackage 33 – Early host responses to *Salmonella* and *Campylobacter*.

This issue also focuses on 'virtual communications', with an overview of Module 4 of the Med-Vet-Net Science Communications Internship; details of Nature Network – the online companion to the journal Nature – and information about other online collaboration tools and multimedia.

Happy Halloween!

Workpackage 33 Overview

Early host responses to *Salmonella* and *Campylobacter*

Salmonella and *Campylobacter* are two important zoonotic pathogens that cause gastro-enteritis in humans. Both pathogens are transmitted through contaminated food and water, and various risk factors for development of gastro-enteritis due to *Salmonella* and *Campylobacter* infection have been identified in epidemiological studies. Infectious diseases caused by *Salmonella* and *Campylobacter* are the result of the complex interaction between these bacteria and their host. The pathogenesis depends both on bacterial components, such as virulence factors, and on host components, such as immune mechanisms to eliminate the pathogen and resolve the clinical manifestations.

Traditionally human infectious disease studies have focused on investigating the pathogens themselves, whilst only a few advances have been made in understanding the host responses. One particular reason for this slower advancement is the complexity of the host genome and its responses. Over the past decade the genome sequences of human and other hosts (e.g. mice) have been unravelled and technical

developments such as large-scale genetic profiling and transcription profiling using micro-arrays, have now opened up a whole range of possibilities to study the role of host factors in host–pathogen interaction. Detailed insight into pathogen factors, and highly sophisticated diagnostics and typing of these bacteria have shown that, although this knowledge has contributed to detection of pathogens and epidemiology, it is not sufficient for optimal infection control. A better insight into host factors involved in the elimination of these pathogens will allow a more complete understanding of the interaction between *Salmonella* and *Campylobacter* and the host and, eventually, may lead to improved strategies for controlling these zoonotic diseases.

Aims

Workpackage 33 involves six European partner institutes (RIVM, VLA, ISS, SVA, ID and SSI) and its major aim is to study host responses to *Salmonella* and *Campylobacter* infection using both novel techniques, i.e. microarray analysis and confocal microscopy, and more conventional immunologic techniques.

To study the role of host factors in determining disease susceptibility

murine models of infection will be used. Comparing responses of highly susceptible mouse strains with relatively resistant mouse strains will enable the identification of early host responses that are associated with either development of severe disease or development of more moderate disease. Conversely, comparison of early host responses to pathogenic bacteria and bacterial mutants that are more or less virulent may shed light on whether and how the host can distinguish between strains with different virulence properties.

The final objective of this Workpackage is to evaluate whether this approach indeed increases our understanding of host–pathogen interaction and can lead to improved control of *Salmonella* and *Campylobacter* infection.

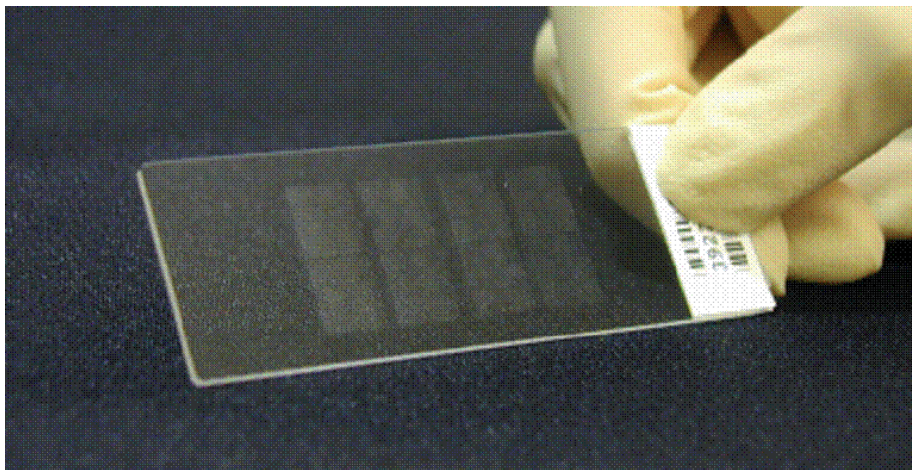
Progress

Workpackage 33 started in March 2007 and the first data have been collected:

- standardized infection protocols have been agreed upon for *Salmonella*, and protocols for *Campylobacter* colonization are being set up;
- characterization of early responses

to *Salmonella* using microarray analysis shows that there is a clear difference in response between a highly susceptible strain of mice and a relatively resistant strain of mice;

- analysis using confocal microscopy will be employed to identify processes that are activated upon infection;
- to further



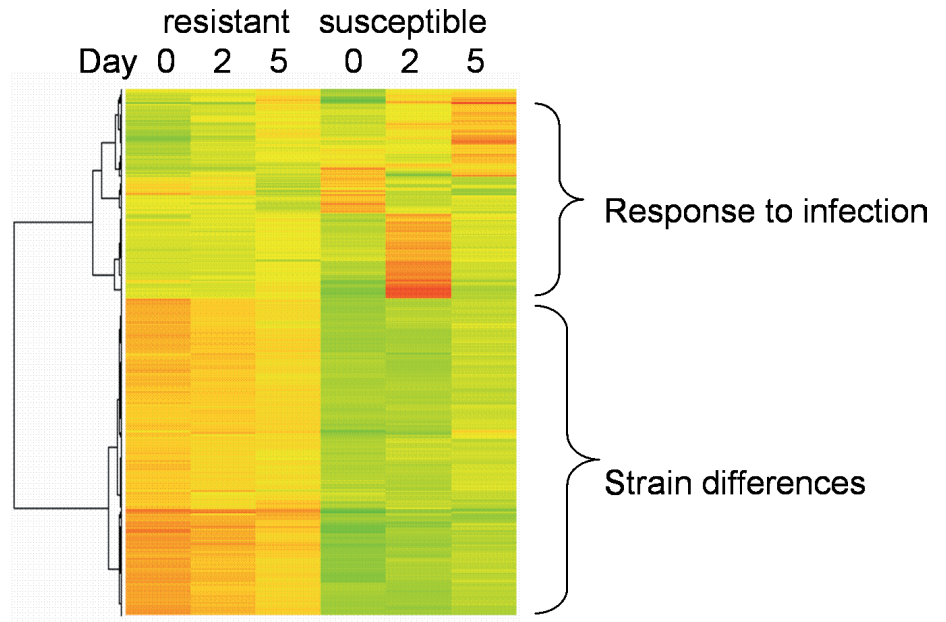
Microarray slide.

distinguish responses in strains with different susceptibility to *Salmonella* infection, experiments in a second highly susceptible mouse strain have been initiated;

- in parallel, early responses to *Salmonella* and *Campylobacter* are characterized using conventional immunological techniques.

Riny Janssen

Early responses to *Salmonella* infection in relatively resistant mice and highly susceptible mice. Both responses to infection, and basal differences between the two mouse strains are visible.



Med-Vet-Net People

Dr Riny Janssen – Workpackage 33 Leader

Riny studied biology at Utrecht University, The Netherlands. She undertook her PhD in the Department of Molecular Microbiology in Utrecht. Her thesis was entitled: 'PhoE of *E. coli* as a carrier for foreign T-cell epitopes: possibilities and limitations'.



Following this, she worked as a post-doc at Imperial College, London, where she studied the host response to mycobacterial infection in the context of the hygiene hypothesis, and at Leiden University Medical Center, The Netherlands, where her research focused on immune function in patients that are extremely sensitive to infection with poorly pathogenic mycobacteria and *Salmonellae*.

Currently Riny is working at the National Institute for Public Health and the Environment (RIVM) in Bilthoven, The Netherlands. Here she studies host-pathogen interaction during *Salmonella* and *Campylobacter* infection. Another line of her research focuses on host susceptibility to respiratory syncytial virus infection in children.

Communication Training

Science Communication Internship

Module 1 – Science Communication – Why and How? will start again on 18 January 2007 for 2 weeks. This will be the last time that this course is offered.

This module includes training on:

- Presentation Skills
- Science in the Media
- Writing effectively
- Communication and Networking skills
- Public relations for science.

Scientists and PhD students from all Med-Vet-Net partner institutes are eligible to apply. In addition a limited number of external participants will be considered. Please contact the Communications Unit for more information and application details.

Applications: To apply, please send your resume and a one-page summary of why you want to undertake the course and what you think you will gain. Closing date: **1 December 2007.**



Nature's Internet Science Social Network

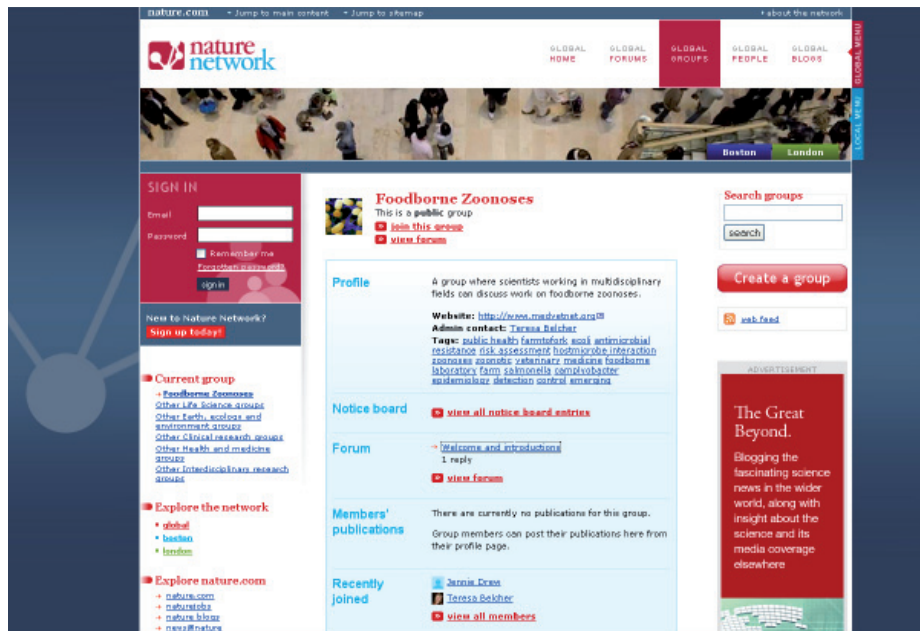
You may already be on Facebook but now the internationally renowned Nature Publishing Group has launched a network for scientists on the Internet – the Nature Network.

The network allows you to create a personal profile page describing yourself and your research. It also allows you to build global online networks with like-minded scientists which you can use for discussing topics important to your daily work. You can join already existing groups or you can form private or open groups for your lab, department, institution or area of interest.

The homepage contains blogs written by other scientist, and Nature guarantees their quality. 'We are rather picky about which bloggers we choose', says Matt Brown, editor of the Nature Network London. 'We do not want the site to be overloaded, but rather keep it to 4-5 good quality blogs a day, so we monitor for a while the quality of their writing before we release them on the official page, he says.

Navigation through the site and through groups, discussions, blogs and events is intuitive, and you can find your way around through menus, lists, tags or search function. There is also a group for 'Nature Network Newcomers' which you can use to introduce yourself, ask questions, and learn more about using the site. To get started go to <http://network.nature.com>

Anne-Mette Kirkemo
Med-Vet-Net Science
Communication Intern
Norwegian Veterinary Institute



As an initiative to encourage science collaboration online, we have already created a group for Foodborne Zoonoses (<http://network.nature.com/group/zoonoses>) so that we can begin to build an online network of like-minded people in these fields.

Please feel free to visit the Nature Network (<http://network.nature.com>), register and begin exploring and discussing topics with your colleagues. Create a personal profile page and describe yourself and your research – even if you move jobs, your profile will remain on Nature Network. You can also join other groups and participate in discussions with other members and sign up for email alerts or RSS so that you can be alerted when new topics are started in the forums.

Microbe World – online video and audio

The American Society for Microbiology has launched a new version of its MicrobeWorld website (www.microbeworld.org) for the Web 2.0 generation. Designed for science enthusiasts, students, teachers, parents and the general public, the updated site embraces new media from audio and video podcasts to RSS feeds and mobile 'phonecasts'.

MicrobeWorld is multimedia rich and incorporates many social media features. A new 'pop-up' flash podcast player allows people to listen to MicrobeWorld Radio, ASM's daily audio news podcast, as they surf the web. The MicrobeWorld News RSS feed is updated with the latest in microbiology and life science-related news as it is published. And visitors can even subscribe or send the latest MicrobeWorld Radio episode to their cell phones.

MicrobeWorld also offers a comprehensive resources section for educators, parents, and students that includes experiments, lesson plans and tools for microbiology education. MicrobeWorld Radio's podcasts are currently being tied to the National Science Education Standards in a searchable database that educators can use to help initiate classroom discussions or build into curriculum.

Over 300 pages deep, the site contains introductory information about the science of microbiology, career profiles and interviews with some of the world's leading researchers, surprising and interesting facts about microbial life, and a comprehensive photo gallery highlighting some of the most studied microorganisms.



Virtual Communications

Science Communications Internship – Module 4

From 1 to 12 October 2007, three participants travelled to Milton Keynes, UK, to take part in the fourth and final Module of the Med-Vet-Net Science Communication Internship.

Concepción Porrero from UCM in Spain, Elizabeth Marier from VLA in UK, and Anne-Mette Kirkemo from the Norwegian Zoonosis Institute continued on from the previous Modules' training to gain some insight into the web and use of virtual communications.

The two week course – 'Virtual Communications' was devised by the Med-Vet-Net Communications Unit, Teresa Belcher and Jennie Drew. The course involved a mixture of in-house tuition as well as external companies providing expert training.

The interns were first introduced to HTML and the basic principles of web design. They were taught how to programme basic web pages using HTML and the importance of using cascading style sheets. Following this, they were shown how to identify

strategies, guidelines, and resources to help make the Web accessible to people with disabilities, and looked at the fundamentals of creating websites that are easy to use.

The last two days of the week were spent learning how to create, edit and deliver podcasts that allow audio to be published in an easily downloadable format. Many of us are already downloading popular or scientific podcasts onto our iPods or MP3 players and are listening to them during our journey to work.

'Using Web 2.0 tools for communicating' was the first course of the second week. Web 2.0 refers to the second generation of web-based communities and hosted services which aim to facilitate collaboration and sharing between users. Examples include social-networking sites such as MySpace and Facebook, blogs, wikis and RSS news feeds.

The interns were then taught the basics of digital photography and how to take images that are a bit more than a 'snapshot'. They looked at how the digital camera works, picture composition and appreciation, and basics about lenses

and flash. The course concluded with a brief overview of image editing in Adobe Photoshop.

In the evening, the interns travelled to London to attend a seminar about working with the media to produce TV series and documentaries. Organized by STEMRA, The Science, Technology, Engineering and Medicine Public Relations Association, speakers included a science documentary producer; a leading scientist recently involved in Channel 4's

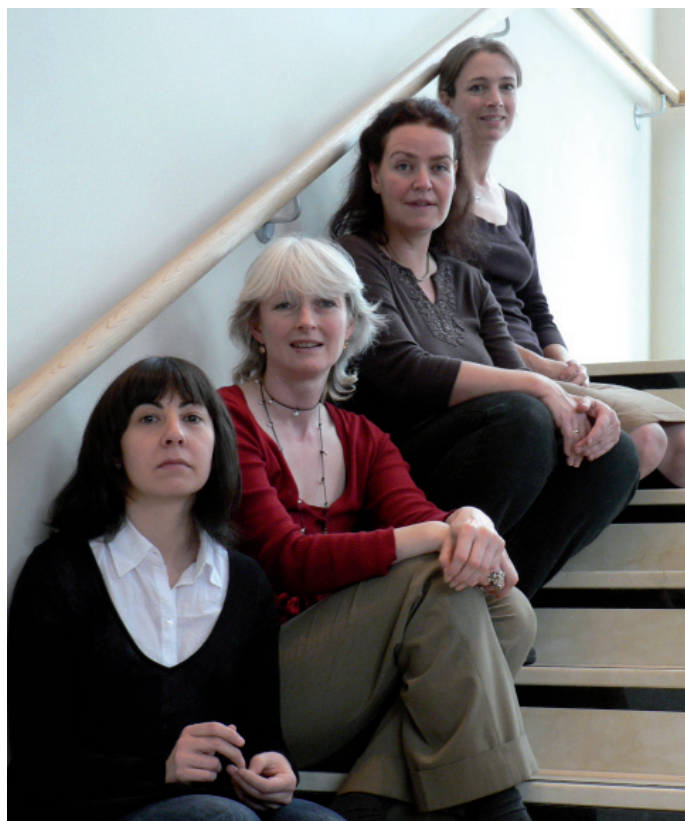


Animal Farm series, and press officers with experience of various TV projects, from popular TV series to more serious documentaries. They shared their experiences and offered practical tips to help ensure filming – and the broadcast result – goes to plan.

Mid-week, the interns examined the principles of writing for the web, as compared with print publications. A trip was then made to London to visit the offices of Nature Publishing Group and to meet Matt Brown, the editor of Nature Network, London. Nature Network, an online companion to the journal *Nature*, aims to connect scientists globally and locally. (Anne-Mette's article about this resource appears on p.3.)

We also met a member of *Nature* whose job is to investigate Second Life, an Internet-based virtual world. Residents can explore, meet other Residents, socialize, participate in individual and group activities, create and trade items (virtual property) and services from one another. Serious business is being done in Second Life, and initiatives within Nature Network include virtual talks and space for scientists to undertake projects on the 'Second Nature' Island. We also had the opportunity to meet the staff who produce the regular *Nature* podcasts.

Finally, we looked at electronic public relations and the interns were shown how to use an online newsletter-generating programme. Some of their work is included in this edition of



The interns with Lizzy Orcutt, a professional photographer who led a training day on digital photography.

Surviving as a woman in science, EuroSciCon meeting , 2 November 2007, BioPark Hertfordshire , Welwyn Garden City, Hertfordshire, UK

Confirmed talks include:

- Creating Cultures of Success for women in science
- What does it take to get women back into SET work after a career break?
- Fellowship opportunities for women in science
- Scientific Publishing: A female dominated field

For more information see: www.euroscicon.com; or email enquiries@euroscicon.com

Zoonoses: From Science to Policy International Conference, 5–7 November 2007, Thistle Hotel, Glasgow

The deadline for abstract submission for oral presentation has now past. To submit an abstract to be considered as a Poster only, the **deadline is 31 August**.

For more information see: www.zoonoses.co.uk

VI Workshop on Rapid Methods and Automation in Food Microbiology, 20–23 November 2007, Facultat de Veterinària at Universitat Autònoma de Barcelona, Spain

To broaden and spread the theoretical and practical knowledges about innovative methods for rapid detection, count, isolation and characterization of foodborne and waterborne microorganisms.

More details: <http://quiroyuab.es/workshopMRAMA/>

Feed Safety International Conference 2007, 27–28 November 2007, Centre de Congrès du Beffroi, Namur, Belgium

The European Project, SAFEED-PAP (FOOD-CT-2006-036221), on the 'Detection of presence of species-specific-processed animal proteins in animal feed', is funded under the 6th EC Framework Programme.

Additional information: <http://safeedpap.feedssafety.org/fs2007/>

II International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld2007), 28 November – 1 December 2007, University of Seville, Seville, Spain

The Conference will specially welcome papers reporting interdisciplinary researchers, relating microbiology with other sciences.

For more information see: <http://www.formatex.org/biomicroworld2007/>

Health Safety Agencies Between Technocracy and Democracy, 15–16 November 2007, University of Liege, Belgium

The conference will gather social scientists as well as practitioners to investigate the role of independent agencies in the management of health risks.

Over the past decade, the creation of safety agencies on health products and foodstuffs has become a common and general feature of most European countries and EU polities. These institutions are expected to renew traditional policy-making on issues related to health, by providing sound scientific advice for policy-makers. Health crises, along with controversies, have spurred further interest in risk assessment and risk management procedures handled by these agencies. This two-day conference will be organized around four issues: the creation of agencies; agencies as strategic actors; the Europeanization of agencies; agencies and democratisation. It will bring together academics, actors and stakeholders interested in health safety agencies.

SfAM Winter Meeting 9 January 2008, Royal Society, Carlton House Terrace, London, UK

Session A Quality assurance and accreditation issues in microbiology

Session B. The Microbiology of alcoholic beverages

For more information: www.sfam.org.uk

Florence Conference on Phenotype MicroArray Analysis of Microorganisms, the Environment, Agriculture, and Human Health, 19–21 March 2008, Florence, Italy

The principal emphasis in the conference is on using phenotypic analysis and phenotypic data to gain a deeper understanding of the biology of microorganisms.

Further information: <http://www.poloscitec.unifi.it/phenotype/>

Future challenges to microbial food safety, an in-depth expert meeting to explore ways to address future challenges to microbial food safety, 9–12 June 2008, Bilderberg Hotel 'Buunderkamp', Wolfheze, Netherlands

The conference will be sponsored by the Dutch Food and Consumer Products Safety Authority (VWA) and the European Food Safety Authority (EFSA).

Those interested in attending the conference are invited to E-mail their application to: VWAfoodmicrobiology2008@vwa.nl



Contact us

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Contributions and suggestions are welcome. Deadline for publication is 1st of each month.

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