



# MED • VET • NET NEWS

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Med-Vet-Net Communications Unit

*In this issue of Med-Vet-Net News we continue our overviews of the new Workpackages with Workpackage 29 – Surveillance of Emerging Antimicrobial Resistance Critical for Humans in Food, Environment, Animals and Man.*

*The new modular format of the Science Communication Internship is outlined, and Admin Bureau update us on their recent activities and progress.*

*Plus, don't forget our photo competition - your chance to submit your scientific image to appear on the front cover of the upcoming Annual Report!*

## WP29 overview

### Workpackage 29 – Surveillance of Emerging Antimicrobial Resistance Critical for Humans in Food, Environment, Animals and Man

Resistance to antibiotics, or antimicrobial resistance, is a major problem worldwide at the beginning of the twenty-first century: once treatable illnesses can now become untreatable. After fruitful investigations over the past three decades, a need for coordinated work to assess the distribution and mechanisms of antimicrobial resistance in zoonotic bacteria, which may hinder the therapeutic usefulness of antibiotics in humans, is urgently needed. In particular, appropriate studies are required to demonstrate the possible transfer of resistant bacterial strains or resistance genes from animals to humans. Therefore, a virtual research group within Med-Vet-Net has been established with the capacity to analyze determinants of antimicrobial resistance in bacteria from the environment, humans, food and animals. Med-Vet-Net possesses a unique bacterial strain collection, with bacteria from a great many origins. This collection enables retrospective and prospective genetic analyses of selected resistance determinants. From such data, crucial information that may impact the emergence and spread of novel antibiotic resistance mechanisms in Europe could be generated.

As a starting point of the Workpackage,

the strains and antimicrobial profiles of bacterial collections held throughout the network will be catalogued. This will provide evidence for the comprehensiveness and representativeness of the collection.

The second objective will be to focus on bacterial resistance to specific antibiotics. In the first instance the group of antimicrobials known as 'aminoglycosides' will be studied. One of the ways bacteria can become resistant to an antibiotic is by acquiring resistance genes. These genes can be passed between different types of bacteria on a sub-cellular structure called a conjugative plasmid. If a bacterium has a plasmid coding for RNA methylases it will be highly resistant to antibiotics widely used in the clinical practice, including kanamycin, gentamicin and amikacin. The genes coding for these methylases can travel between bacteria on a conjugative plasmid within a particular DNA molecules called a transposon. Resistance genes to other antibiotics such as sulphonamides, MLS (macrolide-lincosamide-streptogramin B) and all clinically relevant aminoglycosides can also be carried by the Transposon carrying the most widely spread methylase, called *armA*. This Transposon has also been associated with ESBLs (extended-spectrum beta-lactamases) that code for resistance to  $\beta$ -lactam antibiotics.<sup>1</sup>

Recently, this Transposon has been described for the first time in an animal isolate that causes resistance to all these antibiotics.<sup>2</sup> In the Workpackage, Gram negative and Gram positive bacteria of different origins that show phenotypic resistance to aminoglycosides will be tested to unravel the presence of methylase genes using the polymerase chain reaction (PCR) technique.

As emergence of resistance is a dynamic process, a third and ongoing objective will be to monitor emerging antimicrobial resistance patterns within the EU, and respond to and focus on antimicrobial resistance determinants of importance.

### 'Medics and Vets together:' A Unique Partnership

The Med-Vet-Net partnership provides a unique opportunity for European-wide collaborative research on human and veterinary infectious diseases. In particular, the network has access to bacterial strains isolated from all sources along the food chain, including animals, man, and the intermediate niches of the environment and food. The bacteria isolated from these four reservoirs need to be investigated together as a pool of microorganisms that are potentially able to share genetic information that gives them an evolutionary advantage facilitating their spread within our countries.

Consistent with this concept, research on antimicrobial resistance remains a milestone in the battle against infectious diseases in the developed world. Recently, a new family of aminoglycoside resistance determinants,



*The kick-off meeting of this Workpackage was held on 6 May 2006 in Malta.*

namely 16S rRNA methylases (*armA*, *rmtA* and *rmtB*), have been described in Europe and Asia (France, 2003, Japan 2004, Bulgaria, 2005, Spain, 2005). The genes conferring resistance to these important antimicrobials are spread within mobile genetic structures, and may emerge in any niche, in bacterial species or country. The pre-existing research interests and expertise in antimicrobial resistance in the Med-Vet-Net partnership will enable the detection of emerging, antimicrobial-resistant bacteria across Europe.

The Workpackage aims to build on the results and active surveillance system established within previous EU-funded projects such as the EU-FAIR project QLRT-2001-01146, ARBAO-II (ends in December 2005). Further, it will complement other current EU projects based on antimicrobial resistance, such as The European Antimicrobial Resistance Surveillance System (EARSS) which focuses on emergence of antimicrobial resistance in hospitals. Workpackage 29 aims to exploit the bacteria that have already been isolated in the network laboratories to determine the precise antimicrobial resistance mechanisms

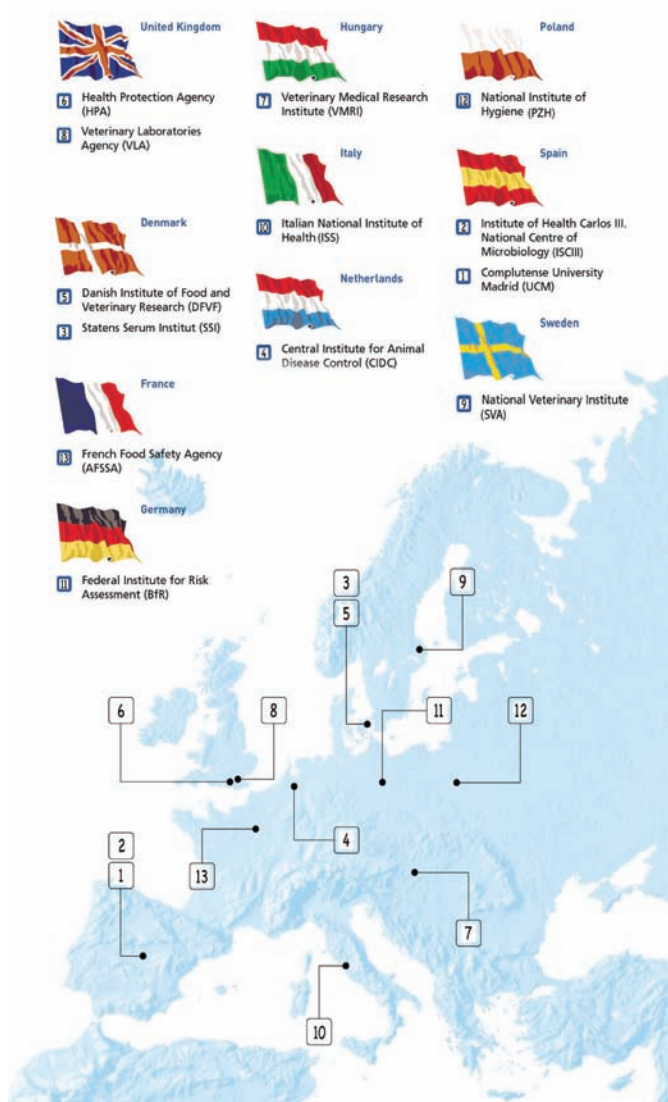
## Med-Vet-Net People

### Bruno Gonzalez-Zorn leader of Workpackage 29

Bruno carried out his studies in Veterinary Medicine between the Universidad Complutense de Madrid, Spain, and the Justus-Liebig Universität Giessen, Germany. He holds a European PhD, *doctor europaeus*, from the Universidad Complutense de Madrid dealing with the foodborne zoonotic pathogen *Listeria*. He undertook his post-doctoral research at the Antimicrobial Agents Unit at the Pasteur Institute in Paris. Shortly after, he was appointed as a researcher from the National Ramón y Cajal Program in Madrid, where he leads a Research Unit on Antimicrobial Resistance and Bacterial Pathogenesis. For the past ten years, Bruno has taught Microbiology and Clinical Microbiology at the Schools of Veterinary Medicine, Pharmacy, Medicine and Food-Science Technology. He has participated in more than 10 EU-funded research projects, dealing with antimicrobial resistance and pathogenesis of foodborne pathogens. His research interests include identification, spread and evolution of antimicrobial resistance determinants and evolutionary genomics of zoonotic pathogens.



Dr Bruno Gonzalez-Zorn



that are spreading within Europe between bacteria of different ecological niches.

### Impact on Public Health

Workpackage 29 participants represents 13 laboratories within 10 European countries (Denmark, France, Germany, Hungary, Italy, the Netherlands, Poland, Spain, Sweden and the United Kingdom) (see map to left) with a proven expertise in antimicrobial resistance.

The use and misuse of antimicrobials, as well as the lack of new antimicrobial molecules developed in the past decades, makes a coordinated effort to hinder the spread of resistance an urgent need within the EU. This was recognized in the late 1990s, and a great effort has made to establish antimicrobial surveillance networks in the EU-member states. Experience shows today, that the next step to fight the continuous spread of antimicrobial resistance and its impact on public health is a rational analysis of the genetic material leading to resistance to clinically relevant antimicrobials. This is the sole approach that can assess links and interrelations between emergence of resistance in animals, food and environment on one hand, and public health on the other. The results of our global approach will provide decision makers with harmonized and scientifically based knowledge that will be a crucial basis to limit the spread and emergence of antimicrobial resistance in the European population.

**Bruno Gonzalez-Zorn**

### References:

1. B. Gonzalez-Zorn et al., J Antimicrob Chemother, 2005, 56(3):583-5.
2. B. Gonzalez-Zorn et al., Emerg Infect Dis, 2005, 11 (6), 954-6.

## Admin Bureau update

### Finances

The first payment of the second grant from the EC (90% of 85% of the total requested grant for the new workpackages) has now been made to the partner institutes. The Admin Bureau reminds partners that the planned JPA2 Workpackage expenditures must not be delayed. It

is important that all planned financial activities are undertaken in order

that there is no under spend in the next financial report.

We are approaching the end of our annual reporting period which is 31 August 2006. The attention of all partner institutes is drawn to the fact that they still have almost a month to incur the expenditures that they want to include in the forthcoming annual report.

In accordance with the Consortium Agreement, the annual report is due by the 15 September 2006. From now on, you are welcome to contact the Admin Bureau for any queries related to preparation of this report.



### Webconferencing

The process of acquiring webcams in order to equip partners to use video conferencing with WebEx is on-going. The most convenient way to purchase these seems to be transferring the money to each partner to buy webcams for their own institute. Specifications of the webcams will be sent to the partners so that we will all have the same equipment.

### Advisory Panel Meeting

The fourth Advisory Panel meeting took place on 27 July 2006 at the Royal Society of Medicine, London, UK. The Admin Bureau was in charge of its organization with the collaboration of Linda Brown, assistant of Prof. Diane Newell. All information related to this meeting is on the private website: The webpage is: <https://www.medvetnet.org/membersite/templates/doc.php?id=97>

### Reviewers' Meeting

The review meeting with the RTD and the two EC reviewers will be held on 13 September 2006 in AFSSA's Laboratory, in Ploufragan, Brittany, France. The Admin Bureau is in charge of organizing the meeting. The date and venue were chosen in order to make best use of time and save costs as most of the participants to this meeting will attend the COST920 meeting taking place 10–12 September also at AFSSA's Laboratory.

## Conferences Attended

The Communications Unit has attended the following conferences this month:

First was the Euroscience Open Forum 2006 held in Munich from 15-19 July. ESOF2006 welcomed over 2100 participants from 58 countries and was held in conjunction with the German National Science Week (Wissenschaftssommer). ESOF fosters debate about science and society, presents science and the humanities at the cutting edge and stimulates scientific awareness. It brought together all groups involved in the scientific endeavour, including researchers from different disciplines, policy-makers, representatives of industrial R&D, science journalists and the general public. ESOF is held every two years, with ESOF2008 being hosted in Barcelona 18-22 July 2008 ([www.esof2008.org](http://www.esof2008.org)).

Second, we attended the Med-Vet-Net Priority Setting Conference held at BfR in Berlin from 19-21 July. Jointly organized by WP 23 and 28 and the US Food Safety Research Consortium (FSRC), this conference aimed to promote progress in food safety priority setting by identifying key scientific issues and opportunities and fostering international scientific collaboration. A report of this meeting will appear in August MVN News.

## Photo competition

# WIN! WIN! WIN! WIN!

'A picture can say a thousand words' and the Communications Unit is looking for just that picture. We need an image that encapsulates Med-Vet-Net and the work of the Partner Institutes. Competition entries can be photographs or illustrations so it's time to get snapping or drawing!

The winning entry will be used on the cover of the 2006 Annual Report with acknowledgement of the winning entrant, who will also receive a special Med-Vet-Net prize.

### Entry details

All entries must be received by 1st September 2006.

Please send us original colour photos, slides or illustrations (which we will return after the competition has closed) or high-quality digital images (in Tagged Image File Format (TIFF) and at least 2600 pixels in width). For now, digital images should be sent in on CD-ROM (FTP details to follow). Colours of electron microscopy images can be changed as desired.

Please include with your entry an informative caption, including names of any people appearing in the photo. Ensure you have copyright to use the image.

For more information contact: [communications@medvetnet.org](mailto:communications@medvetnet.org)



**The Communications Unit is always grateful to receive images for use in Med-Vet-Net publications so please continue to send us any suitable photos or illustrations.**

## External congress

20th ICFMH on Food Safety and Food Biotechnology: Diversity and Global impact  
Bologna, Italy, 29 August to 2 September 2006

This congress is a great opportunity for food microbiologists, technologists and students involved in the food industry as well as regulatory agencies to improve their understanding and discuss topics related to food safety and new-emerging challenges that the scientists have to cope with in order to ensure a safe, secure, nutritious and appealing food supply to a wide range of different consumers.  
[www.foodmicro2006.org](http://www.foodmicro2006.org)

2nd European Veterinary Immunology Workshop  
Paris, France, 4–6 September 2006

This workshop will run sessions on the following topics:

- From innate to adaptive immunity
- Infection & immunity
- Clinical immunology / Immunopathology
- Immunological tools
- Immunomodulation
- Comparative immunology (fish, avian)
- Immunogenomics (Genomic approaches in veterinary immunology)
- Leukocyte subsets and functions - The role of dendritic cell subsets in initiating immune responses
- How many more?: Porcine CD8+ lymphocyte subsets and their functions
- Mucosal immunology
- Novel strategies of vaccine development (incl. probiotics etc.).

[www.inra.fr/Internet/Projets/eviw/EN/index.php](http://www.inra.fr/Internet/Projets/eviw/EN/index.php)

2nd ASM Conference on *Salmonella*: From Pathogenesis to Therapeutics, Victoria, BC, Canada, 9–13 September 2006,

Pre registration Deadline  
July 28, 2006

For additional information please visit the 2nd ASM Conference on *Salmonella* website: [www.asm.org/Meetings/index.asp?bid=38711](http://www.asm.org/Meetings/index.asp?bid=38711)

COST 920 Meeting 'Future Challenges to Foodborne Zoonosis', 10–12 September 2006, Ploufragan, France

Sessions include:

- Methodological challenges to QMRA and the detection of emerging pathogens along the food chain.

- Emerging zoonoses-epidemiological aspects and impact assessment .
- Sustainable risk-based control of foodborne pathogens.

Further information available from the Conference Secretariat: [genevieve.clement@zoopole.asso.fr](mailto:genevieve.clement@zoopole.asso.fr); Tel.: +33 2 9 67 86 130

7th International Congress on Veterinary Virology (ESVV)  
Faculdade de Medicina Veterinária in Lisbon, Portugal, 24–27 September 2006

The scientific programme will consist of plenary invited lectures by renowned scientists, oral presentations and poster sessions selected by the Scientific Committee.

[www.esvv2006.org/welcome.php](http://www.esvv2006.org/welcome.php)

PRION2006

Strategies, advances and trends towards protection of society

Centro Congressi Lingotto  
Turin, Italy, 4–6 October 2006

The programme will include state-of-the-art lectures, oral presentations selected from contributed abstracts and poster sessions on the themes of NeuroPrion Network (prevention, control, treatment, management and risk analysis of prion diseases) and discussions focused on basic research. This event will provide a great opportunity for scientists from all over the world to share their findings and progress in an attractive and interesting setting. [www.newteam.it/PRION2006/](http://www.newteam.it/PRION2006/)

Nano and Microtechnology in the Food and Health Food Industries  
NH Grand Hotel Krasnapolsky, Amsterdam, Netherlands, 25–26 October 2006

The conference will have sessions on:

- Nano and micro technologies in food processing, monitoring, labelling, storage, distribution and related issues
- Using nano and micro technologies to meet the challenges of food for nutrition and food for health
- New techniques and technologies for rapid safety testing, and prevention of food borne disease
- Safety and regulatory issues related to the use of new technology.

[www.nano.org.uk](http://www.nano.org.uk)

CIAA, Brussels, Belgium, 26 & 27 October 2006

The Confederation of the Food and Drink Industries of the EU bi-annual conference 'Food for life...', meeting consumers' needs' will be held at the Hilton, Brussels.

For more information see:  
[www.ciaacongress.be](http://www.ciaacongress.be)

Emerging Diseases: Preparedness and Implementation Issues, ENS Lyon, France, 5–8 November 2006

Organized by the International Association for Biologicals (IABs) in association with WHO, OIE and NIAID. The meeting aims at increasing preparedness against emerging or re-emerging diseases. The problems will be discussed in the framework of recent examples from human and veterinary medicines.

For more information see:  
[www.bcm2006.org/](http://www.bcm2006.org/)

## Happy Holidays!

The Communications Unit wish everyone off on their holidays a relaxing and refreshing break away from work. If you happen to be left behind in the office, enjoy the peace and quiet before your email inbox is once again overflowing in September!



## Contact us

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

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Med-Vet-Net is a European Network of Excellence on Zoonoses Research  
Visit <http://www.medvetnet.org>



MED • VET • NET

# Science Communication Internship 2006–2007

Are you a scientist with a creative flare and passion for communicating your science? Do you want to develop your skills in writing and presenting and learn to use the media, the web and other resources to communicate to different audiences? Yes?? Then the Science Communication Internship is for you!!

## Module 1: Communication – Why and How? 3 weeks: from 16 October 2006, repeated 22 January 2007

Why do we need to communicate? What happens if we don't? Covers all essential skills needed for



successful communication such as writing, presenting, networking, interviewing, being assertive etc.

(NB: It is compulsory to undertake this module before completing any others.)



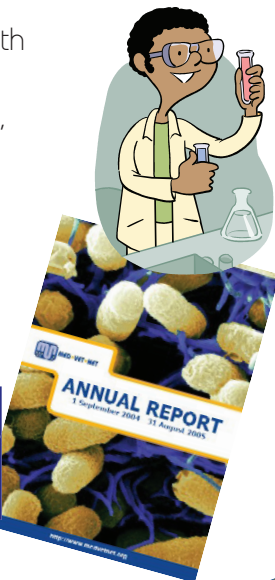
## Module 2: Influencing the Media and Publishing 2½ weeks: from 5 March 2007

Examines two-way communication with the media so we can understand each other's needs. Topics include broadcasting (TV, radio), press (newspapers, magazines, journals), writing press releases, media skills, desktop publishing (InDesign) and public relations.



## Module 3: Influencing Stakeholders Runs 2½ weeks: from 16 April 2007

Examines communications with scientists, decision makers, government, industry, NGOs, museums, schools and the public. You will gain skills in influencing, networking, writing proposals, and organising conferences and events.



## Module 4: Virtual Communications Runs 2 weeks: 29 May 2007

A look at communicating using new and emerging technologies. Topics include web design, online communications, podcasting, graphics, and basic HTML.



# Applications Due Friday 25 August 2006

As part of its overarching 'Spreading Excellence' Workpackage 3, Med-Vet-Net is offering positions for a Science Communication Internship. The Internship is open to any current student, researcher or staff member of the Med-Vet-Net partner institutes. There is limited opportunity for external participants to attend modules at their own cost.

The Science Communication Internship is now being offered as modules to make it easier for people to participate and to fit into their current work commitments. Some assignments will be pre-set and work will be required from participants while they are located at their home Institute. Following completion of the modules, it is expected that participants will return to their Institute and apply the skills learnt by communicating the work of Med-Vet-Net in their country, as well as assisting the Med-Vet-Net Communications Unit with the dissemination of information throughout Europe.

Module 1 has been confirmed to start 15 October 2006 and again on 22 January 2007. Completion of Module 1 is required before students undertake subsequent modules. Dates of Modules 2, 3 and 4 are tentative, and may be altered following discussions with Intern applicants, and stakeholders who we plan to visit. All four modules will be repeated a number of times over the next three years.

During the Internship, the candidates will be mainly located at the offices of the Society for Applied Microbiology in Bedford, UK, with some additional travel throughout Europe to other Partner Institutes and Brussels. Accommodation, travel and associated expenses will be paid for by Med-Vet-Net.

**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. Please also include a letter of support from your current supervisor or MVN Institute Representative. In your application, please indicate which date for Module 1 you would like to attend. There will be up to four fully-funded MVN places in this round, and the opportunity for external people to participate in modules at their own expense.

Please contact Teresa Belcher (email [teresa@sfam.org.uk](mailto:teresa@sfam.org.uk)) to discuss costs.

## Send applications to the address below by Friday 25 August 2006

NOTE: It is important that you have the full support of your Institute in this endeavour. They must support your undertaking of the internship and relieve you of your work commitments for the entire time you are attending the modules. They must also agree that for the first 3 months upon your return to your institute, at least 50% of your time is spent working on communications. If your application is successful, we will require official authorisation of this agreement.

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