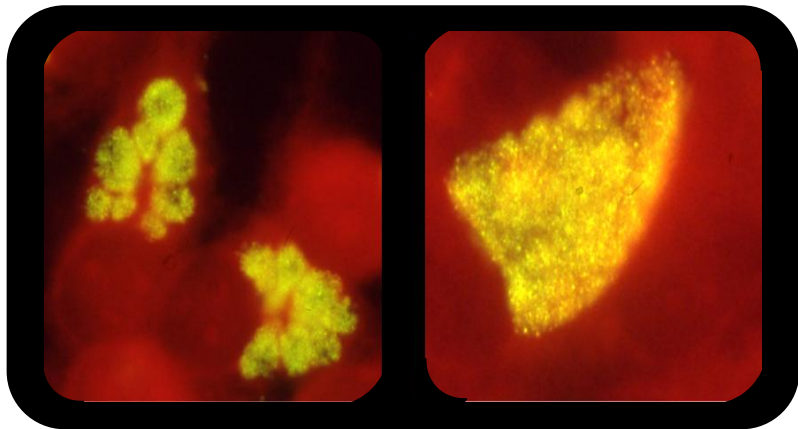


2<sup>nd</sup> Minisymposium

# *Chlamydia trachomatis*

## Infections



Laboratory of Immunogenetics  
VU University Medical Centre  
Amsterdam

28 March 2006  
10.00 – 15.30

## Preface

**Welcome:** Like the First (December 2004) also the Second minisymposium *Chlamydia trachomatis* infections has been organized by the Laboratory of Immunogenetics of the VU University medical centre (VUmc). We are confident that Prof. Michael Ward and Prof. Deborah Dean as our two foreign key note speakers, together with the other speakers will spark the minds of both young and established chlamydiologists and trigger valuable discussions this day!

**The Laboratory of Immunogenetics:** Established by Prof. A.S. Peña in 1992, we have recently become part of the Department of Pathology (Head Prof. Chris J.L.M. Meijer) providing a change for further development of the discipline Immunogenetics. The Laboratory links fundamental scientific research and clinical applications (translational research). Research is divided into two interactive and productive lines: chronic inflammatory diseases (J.B.A. Crusius, PhD) and infectious diseases (S.A. Morré, PhD). Studies in twins and adopted children have shown that host genetic factors form an important element in the susceptibility to and the severity of infectious diseases in humans. Bacterial, environmental and host genetic factors determine the clinical course of *C. trachomatis* infections and integrated approaches are used to study these factors.

**Acknowledgements:** We are grateful to Leanne Fairley of Prous Science for editing and printing the proceedings of the First symposium. We also like to express our profound gratitude to Prous Science, in Barcelona. In particular to Dr. Josep R. Prous, President, for the continuous support for Immunogenetics. We wish to express our gratitude to Prof. S.A. Danner, Head of Internal Medicine of the VUmc Amsterdam, who is actively supporting the immunogenetic research in infectious diseases. In addition, we would like to thank Roche Diagnostics and Oxoid BV for sponsoring also this Second Chlamydial symposium. We are grateful to those involved in the organisation.



A handwritten signature in black ink that reads "A. Salvador Peña".

### A. Salvador Peña

Head of the Laboratory of Immunogenetics  
Department of Pathology, VUmc  
Amsterdam, The Netherlands



A handwritten signature in blue ink that reads "S.A. Morré".

### Servaas A. Morré

Research Coordinator  
Immunogenetics of Infectious Diseases  
Department of Pathology, VUmc  
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## Program

9.30 – 10.00 **Registration**  
*Coffee / Tea*

10.00 – 12.30 **Opening**

Prof. Dr. Chris J.L.M. Meijer

*Head Department of Pathology*

Prof. Dr. A. Salvador Peña

*Head Laboratory of Immunogenetics*

Dr. Servaas A. Morré

*Coordinator Immunogenetics of Infectious Diseases*

### **Morning session**

Prof. Dr. Michael Ward (UK)

*Freedom to Domination: The Chlamydiales story*

Prof. Dr. Deborah Dean (USA)

*Changes in our understanding of Chlamydia trachomatis diseases from bio-informatics and comparative and functional genomics*

Dr. Anneke Gorter (NL)

*Chlamydia trachomatis in Nicaragua*

Dr. Jan E.A.M. van Bergen (NL)

*Chlamydia trachomatis Screening in The Netherlands*

Dr. Henry de Vries (NL)

*Chlamydia trachomatis LGV Infections*

12.30 – 13.15 **Lunch**

13.15 – 15.30 **Afternoon session (PhD Students (overview of work))**

Opening: Dr. Servaas A Morré

Joke Spaargaren (GGD A'dam)

*Multidisciplinary approaches*

Denise Perquin (LUMC)

*Diagnostic accuracy*

Vitaly Smelov (Russia)

*C. trachomatis in Russia*

Robin de Vries (RUG)

*Cost benefit analysis*

Arnold Catsburg (VUmc)

*Bacteria and host factors*

Janneke den Hartog (azM)

*Risk factors in subfertility*

Ingrid Rours (EUR)

*C. trachomatis and pregnancy*

Sander Ouburg (VUmc)

*Chlamydial immunogenetics*

15.30 **Closing remarks**

15.30 – 16.30 **Drinks**



## Michael Ward

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### Curriculum Vitae

Michael Ward was Professor of Medical Microbiology of the University of Southampton, in the United Kingdom. He graduated in Microbiology from University College, London University in 1967 and completed a PhD on gonococci in 1970 under Professor Alan Glynn at the Wright-Fleming Institute of St Mary's Hospital, London (where penicillin was discovered). He moved to the "new" medical school at Southampton in 1972 and has been unwilling to leave ever since.

His early work concerned the pathogenesis of gonococcal infection. He published the first electron micrographs of the *in vivo* adhesion of gonococci to human epithelia and described the process by which gonococci invade perfused human fallopian tube *in vitro*. One of the few people in the world to have been vaccinated with self-prepared gonococcal pilli, a major gonococcal adhesion factor, he lamentably lacked the courage to 'bed test' this 'vaccine' when its unsuitability became clear! In 1979 he switched to chlamydiae as an alternative model of exploring bacterial invasion of human cells. His was one of three groups which in 1981 co-discovered the chlamydial major outer membrane protein (MOMP), which remains the main chlamydial vaccine candidate. This was followed, in collaboration with Ian Clarke and others, by the initial characterization of genes encoding various chlamydial surface or envelope antigens and, with Wayne Conlan, the high resolution mapping of neutralizing epitopes on MOMP. A fruitful collaboration with David Mabey and Robin Bailey followed on the molecular epidemiology of trachoma in The Gambia, W. Africa. His interest in gonococcal and chlamydial infections resulted in him serving for 6 years on the steering group of the WHO task force on infertility. In collaboration with cardiologist Yuk-ki Wong and others, he has published a series of papers challenging accepted thinking on the role of *Chlamydophila pneumoniae* in coronary artery disease. He is the author of a large number of papers on chlamydial infections and contributed the chapter on chlamydial disease mechanisms to the current authoritative American Society of Microbiology Book on Chlamydia (1999). An increasing role in IT and e-learning resulted in him becoming, as well as a microbiologist, the Director of the Information and Computing Division in Southampton. This provided the technical background for

the spare time development of the [www.chlamydiae.com](http://www.chlamydiae.com) web site. He became an Emeritus Professor in September 2004 but maintains his broad-based interest in chlamydial infections. In January this year he presented work on a computer simulation of trachoma control strategies at an ITI trachoma workshop in Arizona. A keen sailor, he spends the summer months sailing in the Baltic, where his yacht is currently located.

## Abstract

Some 2 billion years ago, a free living aquatic bacterium, the last chlamydial ancestor (LCA) lost freedom and independence in its adaptation to intracellular life. Its successors subsequently diverged into two major groups, the environmental and the pathogenic chlamydiales, some 700 million years ago. The *Chlamydiales* became dominant life forms: widely distributed in the environment; mutualists, commensals and pathogens in hosts from amoebae to humans and, crucially, involved in the origins of mitochondria, chloroplasts and the diversification of plants and animals. New insights into this extraordinary story are provided by the 35+ genome sequences for intracellular bacteria, particularly that of an ancient chlamydial organism, *Protochlamydia* UWE25. This presentation, focussing on the “forgotten” chlamydiae, presents the *Chlamydiales* as an astonishingly successful group. An understanding of the evolutionary biology of the “other” *Chlamydiales* will also contribute to our understanding of the pathobiology of human chlamydial infections.

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## Deborah Dean

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### Curriculum Vitae

Dr. Deborah Dean is an Adjunct Professor of Medicine at the University of California at San Francisco School of Medicine and Senior Scientist at Children's Hospital Oakland Research Institute. She has been an active member of the Global Alliance to Eliminate Trachoma, World Health Organization, since 1999.

She is also on study section at the National Institutes of Health (NIH), and has collaborations with biotechnology companies in the bay area to advance vaccine development for chlamydiae. She was recently awarded an International Professorship by the American Society of Microbiology. Dr. Dean's research focuses on comparative and functional genomics to advance our knowledge of tissue tropism, virulence, pathogenesis and evolution of *Chlamydia trachomatis* human infections. In addition, her group is studying the persistence of *C. trachomatis* in ocular (trachoma) and urogenital tract infections through an examination of immune responses, host genetics and pathways of inhibition of apoptosis both *in vitro* and *in vivo*. She is also evaluating *C. pneumoniae* involvement in endothelial damage and atherosclerosis using whole genome and expression microarrays – both human and pathogen – and siRNA knock-down of key genes discovered via microarrays. Finally, her group is developing a chlamydial strain identification database, and designing high-density arrays for both clinical and basic research for all species of *Chlamydiales*.

### Abstract

The field of *Chlamydiales* has undergone a major transformation in the last few years. Reclassification in 1999 heralded the discovery of not just new chlamydial organisms infecting mammals and amphibians but the environment as well. *Chlamydia* is now considered one of two genera of *Chlamydiaceae*, including *C. trachomatis*, a primary human pathogen. Despite these revolutionary changes, only two genomes of *C. trachomatis*, D/UW-3 and A/Har-13, have been sequenced and compared with a handful of *Chlamydomphila* species. We have embarked on a major comparative genomics and genetics study of





## **Anneke Gorter**

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### **Curriculum Vitae**

Dr. Gorter has over 25 years of professional experience as a medical doctor and epidemiologist in various settings. She studied medicine at the University of Amsterdam and specialized in general surgery and obstetrics. She worked at the Municipal Methadone Programme for drug-addicts in Amsterdam until 1983 when she accepted a clinical posting in Nicaragua. From 1986 to 1990 she performed her PhD research on diarrhoeal diseases. Since 1989 she has been involved in the design and development of programmes for the prevention and treatment of STI/HIV/AIDS and the delivery of quality sexual and reproductive health services, as well as in the institutional development of several NonGovernmental Organisations. She is a leading expert in output based approaches to increase access to health services for vulnerable groups and young people through voucher schemes. She is an expert in STI/HIV/AIDS. For Kosovo she coordinated the design of the 5-year strategic HIV/AIDS plan and the development of the proposal for the Global Fund to fight AIDS. She has been the supervisor of numerous students obtaining various academic degrees.

### **Abstract**

A donor-supported competitive voucher scheme in Nicaragua provides prevention and treatment services for sexually transmitted infections (STIs) and HIV/AIDS to highrisk populations such as sex workers and their partners and clients. Beyond detecting and treating STIs, HIV and AIDS, these health services can also raise awareness of risks and promote safer behavior, leading to widespread benefits. This presentation describes the voucher scheme, summarizes published data on *Chlamydia trachomatis* infection in Nicaragua and provides preliminary prevalence data on *C. trachomatis* obtained in 2003 through the voucher scheme.







## Jan E.A.M. van Bergen

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### Curriculum Vitae

Jan van Bergen was born in Schaesberg, the Netherlands on June 19, 1955. He studied medicine at the Radboud University Nijmegen and graduated at 1982. He worked for several years in Africa and Latin America. Develop. In 1993 he graduated at the London School of Hygiene and Tropical medicine as master of Public Health, participating also in the diploma course sexually transmitted diseases in developing countries. After working several years as consultant in this area, from 1997 onwards he combines patient centred activities as a general practitioner in a multicultural and low-income neighbourhood in Amsterdam with a job as programme leader at STI-AIDS Netherlands. His PhD thesis in 2005 was on population and general practice based studies on sexually transmitted diseases in the Netherlands, with a focus on *Chlamydia trachomatis*. He is editor of the Dutch STI journal (now SOAIDS Magazine) and involved in quality assurance and continuous education programmes on the issue. He participated in several research and advisory boards, like the commission from the National Health Council on Chlamydia screening.

### Abstract

In order to obtain insight in Chlamydia population prevalence in the Netherlands a stratified national probability survey was executed. 21.000 randomly selected women and men aged 15-29 years in four regions received a home sampling kit for *Chlamydia trachomatis* testing. Urine samples were returned by mail and tested by PCR. 41% (8383) responded by sending in urine and questionnaire. 11% (2227) returned a refusal card. Prevalence was significantly lower in rural areas (0.6%, CI: 0.1-1.1) compared to very highly urbanised areas (3.2%, CI: 2.4-4.0). Overall prevalence was 2.0% (CI: 1.7-2.3); 2.5% (2.0-3.0%) in women and 1.5% (1.1-1.8) in men. Prevalence was 8.2% (CI: 3.9-12.5) among Surinamese-Antillean participants. 91% of all positive cases were treated. A prediction rule could be developed capturing the risk of chlamydial infection and enabling the potential of selective screening. The Minister of Health will start a 3 year PILOT implementation programme in 2007 based on selective systematic screening. The PILOT implementation will take place in Amsterdam, Rotterdam and in a less urbanised area (South Limburg). Potential for future roll-out will be studied.





## Henry de Vries

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### Curriculum Vitae

Henry de Vries is a dermatologist-venereologist with expertise in infectious skin diseases especially sexually transmitted infections and tropical skin diseases. His PhD thesis in 1994 was focussed on cutaneous wound healing and was rewarded with the Leiden Hippocrates Study prize 1995, and the Sandoz Research Prize 1997. Recent research topics involve; lymphogranuloma venereum proctitis, an emerging STI in mostly HIV positive gay men in industrialised countries, cutaneous leishmaniasis, an emerging infectious ulcerative tropical skin disease, and the viral pathogenesis of lichen ruber planus. He works at the Amsterdam municipal health service STI outpatient clinic, with 22000 patients/year by far the largest STI setting in the country, and at the University of Amsterdam, Academic Medical Center, department of Dermatology.

### Abstract

The lymphogranuloma venereum (LGV) outbreak first noticed in 2003 among MSM is now reported in the whole industrialized world and can be traced back to at least 1981. In a retrospective study we have unravelled clinical and epidemiological criteria for LGV management in MSM. HIV status, proctoscopic findings and Gram stained anorectal smears are helpful in predicting LGV. However, part of the LGV infections do not cause severe clinical symptoms which may delay the diagnosis and hamper screening and prevention measures. To tackle diagnostic problems we developed a realtime PCR for LGV *Chlamydia trachomatis* strains. This test can be performed under routine microbiological laboratory conditions and facilitate LGV screening programmes. An ongoing prospective case-control study clarifies some of the risk factors involved in LGV transmission.





## Joke Spaargaren

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### Curriculum vitae

Joke Spaargaren was born on December 21, 1956 in Aalsmeer, the famous flower village near Amsterdam. From 1979 until 1985 she worked as a senior research technician at the department of Blood coagulation at the 'Centraal Laboratorium van de Bloedtransfusiedienst' (CLB), the Netherlands (J. A. van Mourik, PhD). She worked on the pathogenesis of arterial thrombosis and atherosclerosis. In 1985 she started to study Medicine at the University of Amsterdam. During the study she worked at the National Cancer Institute (Prof. C.M.E. Melief, PhD, MD) on the cellular immunology of a lethal Sendai virus infection in mice. In 1991 she graduated and continued to specialize in microbiology in Leiden (Prof. C.P.A. van Boven, PhD). During her specialization she was trained in the laboratory diagnostics of infectious diseases. In 1998 she was registered as such. In 1999 she started to work at the Public Health Laboratory of the Municipal Health Service (Prof. R.A. Coutinho, PhD, MD) in Amsterdam. In charge of the laboratory she started to work on the genotyping of Sexual Transmitted Diseases, e.g. *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and *Treponema pallidum*. In 2001 she focused her research on the immunogenetics of *Chlamydia trachomatis* in close collaboration with investigators of the Laboratory of Immunogenetics of the Vrije Universiteit Medical Centre. In addition, her research is also focused on the recent LGV outbreak

### Abstract

Her thesis entitled "A MULTIDISCIPLINARY APPROACH TO THE STUDY OF *CHLAMYDIA TRACHOMATIS* INFECTIONS: Female Urogenital Infections & Male Anorectal Infections" will be defended this year. Like her thesis also her presentation is divided in two Parts. In Part 1 we addressed the role of bacterial factors, amongst others *C. trachomatis* serovars (part 1A), environmental factors and epidemiological variables (part 1B), and host factors (part 1C), among others serological responses and immunogenetic responses (candidate gene approach based), to assess their role, individual or combined, in the susceptibility to and severity of *C. trachomatis* infections to provide a basis for an integrated study approach.





## Denise Perquin

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### Curriculum Vitae

Denise Perquin is since April 1, 2005 registered as gynaecologist and chef de clinique of the Department of Obstetrics and Gynaecology at the Medical Center Haaglanden, The Hague. She performed a systematic review of controlled studies on the perinatal outcome of singletons and twins after assisted conception and conducted a multicenter randomized controlled trial on the routine use of hysterosalpingography prior to laparoscopy in the fertility workup. The results of the review and the trial became the basis of her thesis "Evidence of diagnosis and therapy in reproductive medicine: studies on the hysterosalpingogram and assisted conception", supervised by Prof. Dr. F.M. Helmerhorst. One chapter of the thesis contents on "The value of *C. trachomatis* specific IgG antibody testing and hysterosalpingography for predicting tubal pathology and occurrence of pregnancy". She will obtain her Ph.D. degree next year at the Leiden University Medical Center.

### Abstract

In a cohort study of 178 women nested in a randomized controlled trial on the performance of hysterosalpingography (HSG), we compared the diagnostic accuracy and prognostic value of *C. trachomatis* specific (Cts) IgG antibody testing and HSG. The results of CtsIgG were compared with findings at HSG and ascertained by laparoscopy and dye as reference standard. The results of both tests were also compared with pregnancy as clinical endpoint in terms of cumulative pregnancy rate. The positive likelihood ratio for CtsIgG was comparable to HSG. No significant differences were found in cumulative pregnancy rate between CtsIgG negative and CtsIgG positive results. There was also no difference in cumulative pregnancy rate between normal and abnormal findings at HSG. The diagnostic accuracy of CtsIgG antibody testing is comparable to HSG but less invasive and less costly. However, the prognostic value of predicting pregnancy of both tests is poor.







## Vitaly Smelov

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### Curriculum Vitae

Vitaly Smelov was born on September 2, 1970 in Neustrelitz, Germany. In 1987 he entered Military Medical Academy in St.Petersburg, Russia from which he graduated as a M.D. in 1993. In the same year he started his internship and, afterwards, residency in Urology in the Department of Urology and in affiliated hospitals of the St.Petersburg State Medical University. He became a certified urologist in 1997 and worked as a staff urologist in the St.Petersburg City Tuberculosis Hospital (1997-1999), Navy Polyclinic (2000-2002) and City Sport Medical Center (1994-2002, 2004-2006). In 2001 he defended a Patent for Invention (concerning the choosing of antibacterial therapy of *Chlamydia trachomatis* infections in men) in Russia (RU2173987). In June – December 2002 he worked as a Research Fellow at the Department of Urology, University of Nijmegen, The Netherlands (head: Prof. Dr. med. F.M. Debruyne) on the study of prostatic stents and TUMT, and in January 2003 – March 2004 as a Research Fellow at the Laboratory of Experimental Urology, Nijmegen Center for Molecular Life Sciences on the development of new prostate cancer markers, supervised with Prof. J.A. Schalken. Upon his return to Russia, he started to work as a senior researcher at Faculty of Medicine, St.Petersburg State University since May 2004 and, also, as a staff urologist at the Research Institute of Obstetrics and Gynecology, St.Petersburg since November 2004.

He is a member of the European Association of Urology and European Society for Infection in Urology.

### Abstract

In this presentation different studies will be discussed focussing on the survival of *Chlamydia trachomatis* in the presence of different antibiotics in cell culture using strains isolated from patients with chronic prostatitis syndrome and patients with chronic lower urinary tract symptoms. In addition, the recent LGV outbreak in Europe was a very strong reason to evaluate for the first time the incidence of different *Chlamydia* serovars within a Russian population in general and with specific attention into the possible spread of LGV infections among high risk groups. Preliminary results will be shown for these serovar distributions.





## Robin de Vries

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### Curriculum Vitae

Robin de Vries was born in Zwolle on December 15<sup>th</sup> 1979. After graduating from the Thorbecke Scholengemeenschap in Zwolle in 1998, he studied pharmacy at the University of Groningen. He obtained his master's degree in 2003. The title of his master's thesis was: "Uncertainty in Estimated Cost-effectiveness Ratios; comparing parametric and non-parametric methods". Since april 2003 he works as a PhD-student at the department of Social Pharmacy, Pharmacoepidemiology and Pharmacotherapy under supervision of Maarten Postma (Professor in Pharmacoeconomics). He will do his PhD on the cost-effectiveness of prevention and pharmacotherapy for infectious diseases (e.g. *Chlamydia trachomatis*, pertussis). He has a special interest in statistical methods and mathematical modelling in the field of pharmacoeconomics.

### Abstract

The objective of the study was to estimate the cost-effectiveness of a systematic *Chlamydia trachomatis* screening program including partner treatment for the Netherlands. Data on infection prevalence, participation rates and sexual behaviour were obtained from a large pilot study conducted in the Netherlands. We compared doing nothing both with a one-off screening program and with screening on various time intervals. Looking at a time-frame of 20 years, the one-off screening program is estimated cost-saving and should therefore always be adopted from a pharmacoeconomic point of view. Even though screening on various time intervals advert more serious complications, a one-off screening program is estimated the most cost-effective as the screening related costs increase relatively more if screening is repeated. So, it depends on the willingness of the policy makers to pay if screening on various time intervals is considered cost-effective.





## Arnold Catsburg

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### Curriculum Vitae

Arnold Catsburg was born in 1977 and is working at the Department of Medical Microbiology and Infection Prevention, VU University Medical Center, Amsterdam since 2001. His internship was on Real-Time PCR (TaqMan) for qualification and quantification of *Bifidobacterium*, *Propionibacterium* and *Streptococcus* in mucosal biopsies from patients with Inflammatory Bowel disease and controls. After his internship he continued to work in the field of molecular microbiology. He developed diagnostic and typing strategies for amongst others *M. tuberculosis*, *Mycoplasma* and *Chlamydia*. He was also involved in the MOVB project, a study by the Dutch government after an airplane crash in "De Bijlmer", Amsterdam. Recently he has, besides his current task, started to work on his PhD thesis with a major focus on *Chlamydia trachomatis* infection.

### Abstract

His presentation will focus on bacterial and host studies on *Chlamydia trachomatis*. In the part on bacterial studies the development of a Real Time PCR assay for the detection of *C trachomatis* will be discussed, the evaluation of sample pooling strategies using this new sensitive test, and the construction of an internal control for this assay which monitors DNA preparation as well as PCR efficiency. In addition, preliminary data of serovar distribution studies in Russia and Nicaragua will be shown. In the second part of his presentation host studies will be discussed with a major focus on Mannose Binding Lectin (MBL). MBL is a lectin involved in the innate immune response. There are 6 different mutations described responsible for lower efficiency of this molecule. The development of an assay to detect all six mutations, and its clinical applications will be discussed.





## **Janneke den Hartog**

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and Maasland ziekenhuis, Sittard, The  
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### **Curriculum Vitae**

Janneke E. den Hartog studied medicine at the University of Maastricht, the Netherlands, and graduated in 2001. In December 2001, she started her PhD program on *C. trachomatis* in the Department of Obstetrics and Gynaecology of the Academic Hospital Maastricht (supervisors Prof. J.L.H. Evers MD, PhD; Prof. C.A. Bruggeman PhD; and J.A. Land, MD, PhD) and also worked as an in vitro fertilisation doctor. In March 2006, she started her residency in Obstetrics and Gynaecology at the Maaslandziekenhuis in Sittard. Her thesis will be completed in 2007.

*The Chlamydia Research Group Maastricht focuses on the late sequelae of C. trachomatis infections in women: tubal pathology and subfertility. The Chlamydia Research Group of Maastricht consists of members of the research institutes Maastricht Infection Centre (MINC) and Growth and Development (GROW), and the departments of Medical Microbiology and Obstetrics and Gynaecology.*

### **Abstract**

The predictive value of different serological *Chlamydia antibody* tests (CAT) for tubal pathology has been studied. Furthermore, potential markers of persistent *C. trachomatis* infections as risk factors for tubal pathology have been evaluated. Additional studies focus on the spread of *C. trachomatis* in the genital tract and its detection in the fallopian tubes and endometrium of subfertile women. At the moment, a pilot study is underway, in which paraffin-embedded endometrial tissue is tested for the presence of *C. trachomatis* using immunohistochemistry and PCR. Finally, we study the effect of host genetics on the development of tubal pathology.







## Ingrid Rours

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### Curriculum Vitae

G. Ingrid J.G. Rours obtained her medical degree in 1990 at the University of Amsterdam (UVA), The Netherlands. As an undergraduate she did field research in north-east Brazil concerning breastfeeding and malnutrition in infants for the Royal Institute of Tropical Medicine (Prof. J. Kusin) in Amsterdam. She also worked at the Department of Paediatrics of the Dhaka Institute of Child Health (Prof. Akbar) in Bangladesh and participated in shigellosis research at the International Centre for Diarrhoeal Disease Research in Dhaka. After graduation, she worked as a medical office and specialized in paediatrics at the Chris Hani Baragwanath Hospital in Soweto, and the Johannesburg General Hospital and Coronation Hospital in Johannesburg, South Africa. She obtained an MMed Paediatrics Degree in 1998 at the Witwatersrand University in Johannesburg for her research on Chlamydial infections in mothers and their infants, in collaboration with the Department of Obstetrics and Gynaecology and the Department of Paediatrics at the Johannesburg General Hospital (Prof. A.D. Rothberg) and the Department of Sexually Transmitted Diseases in the South African Institute for Medical Research (Prof. R. Ballard). She then worked in general paediatrics at the Johannesburg General Hospital and at the child abuse clinic of the Transvaal Memorial Institute in Johannesburg. After returning to the Netherlands, she worked in general paediatrics in the Maasland Hospital, Sittard. This was followed by a subspeciality in neonatology at the Department of Neonatology of the UMC St Radboud Hospital, qualifying in 2000 at the University of Nijmegen. Subsequently, she worked in the Paediatric Outpatient Department and ran the Child Abuse Clinic at the Sophia Children's Hospital in Rotterdam, where she did a fellowship in paediatric infectious diseases. At present she is working on her PhD thesis in collaboration with the Department of Paediatrics (Prof. R. de Groot) and Department of Medical Microbiology and Infectious Diseases (Prof. H.A. Verbrugh) at the Erasmus University in Rotterdam.





## Sander Ouburg

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Department of Pathology, VUmc, Amsterdam*

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### Curriculum Vitae

Sander Ouburg was born on 20-12-1976 in Amsterdam. He graduated from high school (Vossius Gymnasium) in 1996 and studied Medical Biology at the Universiteit van Amsterdam (UvA). He graduated in August 2002.

As an undergraduate student he worked on the regulation of IL-12R b 2 by IL-13 (Title: IL-13, a possible Th2 skewing factor?) on the Department of Cell Biology and histology, Academic Medical Centre (AMC), Amsterdam (H.H. Smits, MSc and Prof. M.L. Kapsenberg, PhD). The second internship was focussed on the role *IL-1B* and *IL-1RN* gene polymorphisms in the susceptibility and severity of human urogenital *Chlamydia trachomatis* infections at the Public Health Laboratory, Public Health Services (Prof. R.A. Coutinho, PhD, GG&GD Amsterdam; J. Spaargaren, MD, GG&GD and Laboratory of Immunogenetics; S.A. Morr , PhD, Laboratory of Immunogenetics, Section Immunogenetics of Infectious Diseases, VU University Medical Centre, Amsterdam). Finally, his internship essay was focussed on the immunogenetics of human urogenital tract infections (J. Spaargaren, MD; S.A. Morr , PhD). Currently, he is working on the immunogenetics of infectious diseases with special attention to upper gastrointestinal disorders and urogenital infections (Prof. A.S. Pe a, MD, PhD, FRCP, S.A. Morr , PhD, Laboratory of Immunogenetics, VU University Medical Centre, Amsterdam; Prof. C.J.J. Mulder, MD, PhD, E.C. Klinkenberg-Knol, MD, Department of Gastroenterology, VU University Medical Centre, Amsterdam).

### Abstract

My presentation will focus on the candidate gene approaches used in the integrated approach to the study of *Chlamydia trachomatis* infections in the female urogenital tract as described in the thesis from Joseph Lyons. Special attention will be given to genes involved in the innate immune responses to *C. trachomatis* infections (ao Toll-like receptors) and in those involved in the Th0 → Th1 direction (ao IFN-gamma and IL12).





## Minisymposium Organizer Servaas A. Morré

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### Curriculum vitae

Servaas A. Morré, PhD, who is working on *Chlamydia trachomatis* for over 11 years, graduated at the VU University, the Netherlands, in Biochemistry and Molecular Biology in 1994. He worked at The Zaadunie, Department of Cell biology on polyploidization of *Brassica oleracea* (Cauliflower) during cell culture (M. Tan, PhD) and at the Department of Biochemistry and Molecular Biology VU on processing of ribosomal RNAs in *Saccharomyces cerevisiae* (Prof. H. Raué, PhD, R. van Nues PhD).

As an Erasmus Fellow he studied at the Universidade Do Porto, Laboratório de Genética Molecular, Portugal, on POLO: an essential kinase for mitosis in *Drosophila melanogaster* (Prof. C. Sunkel, PhD).

His PhD thesis performed in Department of Pathology (VU University) was on the epidemiology, diagnostics and immunopathogenesis of human urogenital *Chlamydia trachomatis* infections.

As a postdoc, the Van Coeverden Adriani Foundation made it possible to extended *Chlamydia* research in the Department of Infectious Diseases, The City of Hope Medical Center, California, USA, in collaboration with Dr. Jim Ito and Dr. Joseph Lyons, specialists in murine modeling.

From the 1st of November 2001, he joined the Laboratory of Immunogenetics, VUmc. His research is focused on the immunogenetics of infectious diseases with still special attention to *Chlamydia trachomatis*, HIV (Prof. S. Danner & Dr. M. Agtmael) and periodontitis (collaboration with ACTA). Studies on Human Papilloma Virus (HPV) infections have been initiated together with Prof. C.J.L.M. Meijer. He organized together with Prof. Salvador Peña in December 2004 the First Mini-symposium *Chlamydia trachomatis* Infections and in March 2006 the Second Mini-symposium *Chlamydia trachomatis* Infections.

In July 2005 at the 16th Biennial meeting of the International Society for Sexually Transmitted Diseases Research (ISSTD) he was a member on the Scientific Committee. He organized the workshop "Immunogenetics of *Chlamydia trachomatis* Infections", with Prof. David Mabey (London, UK, Trachoma research). Together with Tjaco Ossewaarde and Yvonne Pannekoek, he coordinates the Dutch Chlamydia Working Party. He is coordinator of the International *Chlamydia* consortium ICTI (Integrated approach on *Chlamydia trachomatis* Infections).

As Scientific consortium coordinator, he submitted a European grant (LIFESCIHEALTH FP6, Co-ordination Actions (CA) in functional genomics research): "Contribution of molecular epidemiology and host-pathogen genomics to understand *Chlamydia trachomatis* disease (Acronym: EpiGenChlamydia)" with 20 European groups. Medio April 2006 the first EU decisions will be sent to all applicants.

## An overview of PhD work in The Netherlands on *Chlamydia trachomatis*

**Table I:** *PhD theses in the Netherlands*

2006 Tanja P. Gijzen*	Maastricht University
2006 Hannelore M. Götz*	Erasmus University Rotterdam
2005 Jan E.A.M. van Bergen*	University of Amsterdam
2004 Joseph M. Lyons*	City of Hope Medical Center, CA, USA, and VU University Amsterdam
2003 Laura S. Murillo	VU University Amsterdam
2002 Monica Molano Luque	VU University Amsterdam
2001 Irene G.M. van Valkengoed*	VU University Amsterdam
1999 Servaas A. Morré*	VU University Amsterdam
1999 Johannes W. Trum	University of Amsterdam
1999 Bernardus W.J. Mol	University of Amsterdam
1998 Yvonne T.H.P. van Duijnhoven	University of Amsterdam
1997 Marita J.W. van de Laar	University of Amsterdam
1995 Jar Lan*	VU University Amsterdam
1994 Josina van Ulsen	Erasmus University Rotterdam
1994 Jacobus M. Ossewaarde*	University of Utrecht
1993 Hans J.H. Theunissen*	Erasmus University Rotterdam
1992 Johannes T.M. van der Schoot*	University of Amsterdam
1992 Arent J.P. Boeke and Janny H. Dekker	VU University Amsterdam
1992 André H. van der Willigen	Erasmus University Rotterdam
1991 Eric C.J. Claas	VU University Amsterdam
1990 Gijsbertus J.H.M. Ruijs*	Rijksuniversiteit Groningen
1987 Kie H. Tjiam*	Erasmus University Rotterdam

\**Chlamydia trachomatis* is the major focus in the thesis.

**Table II:** *Current PhD fellows working (partially) on Chlamydia trachomatis.*

Joke Spaargaren	University of Amsterdam and VU University Amsterdam
Sander Ouburg	VU University Amsterdam
Janneke E. den Hartog	Maastricht University
Steven M. Westenberg	AMC, University of Amsterdam
Ingrid Rours	Erasmus University Rotterdam
Caroline J. Bax	University of Leiden / Medical Center Haaglanden
Arnold Catsburg	VU University Amsterdam
Vitaly Smelov	St. Petersburg State Medical University, Russia and VU University Amsterdam
Denise A.M. Perquin	University of Leiden / Medical Center Haaglanden

## Attendants:

Title	Last name	Surname	Affiliation	E-mail
Ing	Akker, van den	Erik	TU Delft	erikvandenakker@gmail.com
Dr	Bergen, van	Jan	SOA-AIDS Foundation	JvanBergen@soa aids.nl
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Ing	Catsburg	Arnold	VUmc, Amsterdam	A.Catsburg@vumc.nl
Dr	Crusius	Bart	VUmc, Amsterdam	b.crusius@vumc.nl
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Dr	Pannekoek	Yvonne	AMC, Amsterdam	y.pannekoek@amc.uva.nl
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<b>Title</b>	<b>Last name</b>	<b>Surname</b>	<b>Affiliation</b>	<b>E-mail</b>
Drs	Smelov	Vitaly	Faculty of Medicine, St.Petersburg State University, & Research Institute of Obstetrics and Gynaecology, St. Petersburg, Russia	vitsmelov@yahoo.com
	Smits	Paul	Slotervaart ziekenhuis	mbpsm@slz.nl
Drs	Spaargaren	Joke	GGD, Amsterdam	J.Spaargaren@infectielab.nl
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Dr	Vries, de	Henry	AMC & GG&GD A'dam	h.j.devries@amc.uva.nl
Drs	Vries, de	Robin	RUG, Groningen	robin.de.vries@ rug.nl
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**Symposium co-ordination:**



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**Lay out & design, odd jobs:**



Sander Ouburg  
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