

# CV Anna-Maija Virtala - uran publikationer

## Personal information

Anna-Maija Virtala

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Helsingin yliopisto - University of Helsinki

Eläinlääketieteellinen tiedekunta - Faculty of Veterinary Medicine since 01/08/2002

Eläinlääketieteellisten biotieteiden osasto - Department of Veterinary Biosciences since 01/01/2010

Eläinlääketieteellinen mikrobiologia ja epidemiologia - Section of veterinary microbiology and epidemiology since 01/08/2002

Vastuullinen tutkija - Principal investigator since 28/05/2010

## Education

### EDUCATIONAL INSTITUTIONS ATTENDED

1975 Matriculation examination, Oulaisten Lukio, Finland (May 31)

1976 Approbatur in Chemistry, University of Helsinki, Finland

1976 Approbatur in Mathematics, same institute

1976 Approbatur in Physics, same institute

1978 B.V.M., College of Veterinary Medicine, Helsinki, Finland

1982 D.V.M., same institute (April 15)

1982 Meat Inspection License, same institute (June 23)

1984 Food Hygiene License, same institute (October 12)

1987 M.Sc. (in Veterinary Microbiology), University of Surrey, Guildford, UK (November 26)

1996 Ph.D. (in Veterinary Epidemiology), Cornell University, Ithaca, NY, USA (August 26)

2002 Specialist in Infectious Animal Diseases, University of Helsinki, Finland (November 15)

2004 Diplomate in European College of Veterinary Public Health (population medicine), European Board of Veterinary Specialisation, Belgium (October 22), non practicing since December 2012

2011 Statutory Teachers' Competence in University Pedagogics (Teacher's certificate), University of Helsinki, Finland (August 15)

2012 Adjunct Professor (Docent; in Veterinary Epidemiology), University of Helsinki, Finland (January 17)

### CONTINUING EDUCATIONAL COURSES ON PROFESSIONAL TOPICS:

1985 The Ministry of Agriculture and Forestry, Paimio, Finland, August 7-9, 1985; "Bee Diseases" by Dr. L. Kauko; 1986-87 The following courses were mandatory for the Master of Science in Veterinary Microbiology degree, University of Surrey, Guildford, UK - Infectious diseases (40 h lectures, 80 h laboratory classes)- Epidemiology and preventive medicine (20 h lectures)- Immunology (20 h lectures and 60 h laboratory classes)- Microbial physiology and genetics (20 h lectures and 40 h laboratory classes)- Methodology and analytical techniques (20 h lectures)- Statistics (14 h lectures)- Tutorials and seminars (20 h)- Visits (35 h)- Research project and dissertation (200 h); 1987 University of Turku, Medical Faculty, Turku, Finland, September 19, 1989; "The Methods of Electrophoretic Fractioning of Proteins and the Clinical Interpretation", 6 h; 1991 Norwegian College of Veterinary Medicine, Biri, Norway, June 5-14, 1991; Nordic postgraduate course in Veterinary Epidemiology "Animal Health Economics and Disease Control" by Drs. I. Gardner and T. Carpenter; 1992 Cornell University, Ithaca, NY: "Matrix Algebra" (STATS 417), 3 credits (B+), "Statistical Methods I" (STATS 601), 4 credits (A), "Introduction to Epidemiology" (VETCS 664), 3 credits (A), "Basic Immunology" (VETMI 315), 3 credits (A-); 1993 Cornell University, Ithaca, NY: "Statistical Methods II" (STATS 602), 4 credits (A); "Study Designs" (VETCS 665), 2 credits (A); "Immunology of Infectious Disease and Tumors" (VETMI 719), 2 credits (A-); "Theory of Probability" (STATS 408), 4 credits (B); "Advanced Methods in Epidemiology" (VETCS 666), 3 credits (A+); 1994 Cornell University, Ithaca, NY: "Theory of Statistics" (STATS 609), 4 credits (auditing); 1995 Cornell University, Ithaca, NY: "Nonparametric and Distribution-Free Statistical Methods" (BTRY 607), 1 credit (auditing); "Statistical Analysis of Life Data = Survival analysis" (OR&IE 676), 3 credits (auditing); 1996 University of Helsinki, Helsinki, Finland, October 28 - November 1, 1996; "Research design and methodology in farm animal welfare research" by Drs. J. Rushen and A.-M. de Passille; 1996 Nordic Society for Veterinary Epidemiology, NOSOVE, Malmö, Sweden, November 7-8, 1996 "Veterinary Clinical Trials" by Dr. M. Thrusfield, University of Edinburgh, Scotland; 1996 University of Helsinki, Helsinki, Finland, and National Center of Experimental Animals, Kuopio, Finland, November 18-22, 1996; "Basics of animal experiments" by Dr. T. Nevalainen; 1996 University of Helsinki, Helsinki, Finland, November 25 - December 13, 1996; "Basic molecular

biology, laboratory course” by Ms. P. Ryöppy (not for credit, included PCR); 1998 Management Forum Ltd, London, UK, December 17, 1998; “The design, development, validation and control of potency tests in veterinary vaccines” by Mr. Roger Lucken and Mr. Steve Houghton; 2001 Ministry of Agriculture and Forestry, Food and Health Department and National Veterinary and Food Research Institute, Department of Risk Assessment, Helsinki, Finland, December 4-5, 2001; “Course on Modelling of health hazards in animal production” by Drs. Larry Paisley, Jan Holmberg, Jukka Ranta, and Urho Pulkkinen; 2002 Nordic Society for Veterinary Epidemiology, NOSOVE, Helsinki, Finland, November 25-27, 2002; “Basic Veterinary Epidemiology – Helsinki 2002” by Dr. Michael Thrusfield, University of Edinburgh, Scotland; 2002 University of Helsinki, Faculty of Veterinary Medicine, Section of Microbiology and Epidemiology, Helsinki, Finland, December 4-5, 2002; “Diagnostic Test Evaluation Course” by Dr. Ian Gardner, University of California, Davis; 2003 University of Helsinki, Faculty of Veterinary Medicine, Section of Microbiology and Epidemiology, Helsinki, Finland, June 1-2, 2003; “Clinical Trials Course” by Dr. Ian Dohoo, University of Prince Edward Island, Canada; 2005 Nordic Society for Veterinary Epidemiology, NOSOVE, Stockholm, Sweden, January 19-21, 2005; “Spatial and Spatio-Temporal Methods in Veterinary Epidemiology” by Prof. Dirk Pfeiffer, The Royal Veterinary College, University of London, and Mr. Archie Clements, Imperial College, University of London, UK; 2006 Nordic Society for Veterinary Epidemiology, NOSOVE, Oslo, Norway, January 25-27, 2006; “Estimation of Prevalence and Incidence for use in Descriptive Epidemiology and Risk Assessment” by Mr. David Vose, The Vose Consulting Group, UK; 2006 SAFOSO (Safe Food Solutions) and Aus Vet Animal Health Services, Bern, Switzerland, February 20-24, 2006; “Evaluation of Complex Surveillance Systems – Application to the assessment and prioritisation of surveillance programs and demonstration of freedom from disease” by Drs. Angus Cameron, Aus Vet Animal Services and Tony Martin, Department of Agriculture, Western Australia; 2007 Nordic Society for Veterinary Epidemiology, NOSOVE, Espoo, Finland, March 26-27, 2007; “Surveys and monitoring systems; Design questions, analysis and presentation of results,” by Prof Marcus Doherr, Vet Suisse Faculty, Bern, Switzerland, and Prof Nils Toft, Faculty of life sciences, University of Copenhagen, Denmark; 2007 Department of Public Health and the Institute of Mathematical Statistics, University of Tartu, Tartu, Estonia, May 25-30, 2007; “Statistical Practice in Epidemiology using R-code” by Drs. Krista Fischer, Esa Läärä and Bendix Carstensen; 2010 Department of Veterinary Biosciences, University of Helsinki, Helsinki, Finland, January 7-9, 2010; “Infectious Disease Modeling” by Profs. Yrjö T. Gröhn and Ynte H. Schukken (1 ECTS); 2012 NOVA University Network, University of Helsinki, Mustiala, Tammela, June 4-13, 2012; “EpiNOVA advanced course in GIS and spatial analysis using open source software” by Drs Javier Sánchez and Raphaël Vanderstichel (4 ECTS).

#### CONTINUING EDUCATIONAL COURSES ON PEDAGOGY, INFORMATION TECHNOLOGY AND LEADERSHIP.

1985 Seinäjoki High school, evening course, Seinäjoki, Finland, November 19, 1995; “Basic Course in Data Processing”, 28 h; 1986 Finnish Reserve Officer’s Federation, Seinäjoki, Finland, September 12, 1985 - April 17, 1986; “Course in Leadership” by Mr. S. Takala; 1989 Finnish Medical Association, Helsinki, Finland, March 9-10, 1989; “Physician and Data Processing”, 12 h; 1991 University of Turku, Medical Faculty, Turku, Finland, October 3 and 10, 1991; “Postgraduate Course on Scientific Writing”, 0.5 wk by Dr. L. Pelliniemi; 1992 Occupational Adult Education Center, Seinäjoki, Finland; “Basic Course in Information Technology”, 16 h; 1994 Finnish Institute of Public Management, Helsinki, Finland, October and December, 1994; “Leadership and Motivation”, 100 h by Mr. D. Parland; 1995 Center for Technical Training (AEL), Helsinki, Finland, June 7-8, 1995; “Time Management and Personal Work Planning”, 14 hr by Mr. K. Nurmi; 1996 University of Helsinki, Helsinki, Finland, December 16 - December 18 (1.5 study wk), 1996; “Course in lecturing pedagogy” by Ms. T. Salli; 2003 University of Helsinki, Helsinki, Finland, January – May (5 study wks = 10 ECTS), 2003; “ope.fi II; Information and communication technologies in teaching and learning” by Mrs Sari Koski-Kotiranta; 2003 University of Helsinki, Helsinki, Finland, October 31, 2003; “Writing in the internet” by Mrs Anja Alasilta; 2004 University of Helsinki, Helsinki, Finland, October 27 – November 24, 2004; “Writing in the internet, continuing course” by Mrs Anja Alasilta; 2005 University of Helsinki, Helsinki, Finland, March 17 2004 – January 11 2005 (5 study wks = 10 ECTS); “Basics for university pedagogy, YOPEDA I” by Dr. Lena Levander and Mr. Janne Ruohisto; 2006 University of Helsinki, Helsinki, Finland, May 23, 2006 (15 ECTS); “Basics for university pedagogy, YOPEDA II” by Drs. Sari Lindblom-Yläne, Anne Nevgi and Aino-Maija Lahtinen; 2009 University of Helsinki, Helsinki, Finland, April 24, 2009 (35 ECTS); “Advanced studies in university pedagogy, YOPEDA III” by Drs. Sari Lindblom-Yläne, Anne Nevgi and Aino-Maija Lahtinen; 2011 University of Helsinki, Helsinki, Finland, June 23, 2011 (8 ECTS); “Studies that provide pedagogical qualifications required of teachers” by Dr. Anne Nevgi; 2012 Eduta Oy, Tampere, Finland, March 12, 2012 (4 ECTS); “Group Dynamics and Collaborative Methods in Higher Education” by Ms. Satu Öystilä; 2013 Eduta Oy, Tampere, Finland, July 3, 2013 (1 ECTS); “Tools for getting the students involved [Työkaluja opiskelijoiden osallistamiseen]” by Ms. Satu Öystilä; 2015 University of Jyväskylä and University of Helsinki, Helsinki, Finland, April 24, 2015 (10 ECTS); Osaava verme - Peer mentoring training by several teachers and the project leader Dr. Riitta Jyrhämä.

#### **SYMPOSIA ATTENDED**

1989 11th International Symposium W.A.V.M.I. on "The Most Diffusive Infectious Diseases of Animals in 1992 and After," Perugia - Mantova, Italy, October 2-6, 1989; 1991 Nordic Symposium on Veterinary Epidemiology on "Methods in Veterinary Epidemiology and Fundamentals of Epidemiologic Research Revisited," Suittia, Finland, September 12-14, 1991 by Drs. Y. Gröhn and O. Miettinen; 1996 Nordic Committee for Veterinary Scientific Cooperation, NKVet, 10th Symposium "Effects of International Trade on Animal Health, Public Health and Animal Welfare in the Nordic Countries," Hanasaari, Finland, November 15-16, 1996; 1997 "9th International Congress in Animal Hygiene," Helsinki, Finland, August 17-21, 1997; 1999 Nordic Committee for Scientific Cooperation, NKVet: "National Disease Control in Farmed Animals", Stockholm, Sweden, October 1-2, 1999; 2003 SVEPM (Society for Veterinary Epidemiology and Preventive Medicine) annual conference, Warwick, UK, March 31-April 2, 2003; 2003 University of Helsinki, Finland, April 10.-11 (0.5 study weeks), 2003: "Active learning and learning by exploration in the university; A symposium concerning teaching development" by Depts of Education and Social Psychology; 2004 SVEPM annual conference, Martigny, Switzerland, March 24-26, 2004; 2004 Nordic Committee for Scientific Cooperation, NKVet: "Emerging Zoonoses – New Challenges", Uppsala, Sweden, October 7-8, 2004; 2005 International Meeting on the Design and Analysis of Diagnostic Test Evaluation Studies, Nairn, Scotland, UK, March 28-30, 2005; 2005 SVEPM annual conference, Nairn, Scotland, UK, March 31-April 1, 2005; 2006 SVEPM annual conference, Exeter, England, UK, March 29-31, 2006; 2006 ISVEE (International Symposium on Veterinary Epidemiology and Economics) XI Symposium, Cairns, Queensland, Australia, August 6-13, 2006; 2007 SVEPM annual conference, Espoo, Finland, March 28-30, 2007; 2007 ECVPH (European College of Veterinary Public Health) Annual Scientific Meeting 2007, Helsinki, Finland, September 20-21, 2007; 2009 SVEPM annual conference, London, U.K., April 1-3, 2009; 2010 Nordic Committee for Scientific Cooperation, 24th NKVet Symposium: "Databases in veterinary medicine – Validation, harmonisation and application", Copenhagen, Denmark, April 19-20, 2010; 2012 ISVEE XIII, International Symposium on Veterinary Epidemiology and Economics, Maastricht, The Netherlands, August 20-25, 2012; 2012 ECVPH Annual Scientific Meeting 2012, Maastricht, The Netherlands, August 24-25, 2012; 2012 16th Nordic Congress for Student Health, Helsinki, Finland, September 13-14, 2012; 2013 Innolla opiskelukykyä –seminaari (Gaining ability to study uning eagerness -seminar), Campus Conexus II project, Suomen ylioppilaskuntien liitto (National Union of University Students in Finland), Espoo, Dipoli, October 21, 2013; participation into the workshop "Aalto Design Factory and the key elements for life long learning."; 2013 Yliopisto-opetus suunnannäyttäjänä? - laatunäkökulmia yliopistokoulutukseen -seminaari (University teaching as trend setter? – quality aspects into university teaching -seminar), Yliopistojen opetusalan liitto (YLL) ja Suomen ylioppilaskuntien liiton (SYL) (Association for the education sector in the universities and National Union of University Students in Finland), Espoo, Dipoli, October 22, 2013; participation into the workshop "Good university teaching and studying."; 2014 SVEPM 2014, March 26 to 28, 2014, Dublin, Ireland; 2014 Interactive techniques in teaching (ITK), April 9-11, 2014, Hämeenlinna, Finland; 2014 10th ICED conference (International Consortium for Educational Development) under the theme "Educational development in changing world", June 16-18, 2014, Stockholm, Sweden; 2015 ITK, April 15-17, 2015, Hämeenlinna, Finland

## PROFESSIONAL LICENSES

1982 Licensed to practice veterinary medicine in Finland (April 15, 1982)  
 1982 Licensed to practice meat inspection in Finland (June 23, 1982)  
 1984 Licensed to practice food hygiene in Finland (October 12, 1984)  
 2002 Certified Specialist for Infectious Animal Diseases (November 15, 2002)  
 2011 Statutory Teachers' Competence in University Pedagogics (Teacher's certificate) (August 15, 2011)

## APPOINTMENTS

August 2007 onwards: University lecturer in infectious disease epidemiology - including analytical epidemiology and coordination of the Finnish specialization program for infectious animal diseases, Faculty of Veterinary Medicine, University of Helsinki, Finland, permanent position  
 August 2002 - 2007: University lecturer in infectious disease epidemiology - including analytical epidemiology and coordination of the Finnish specialization program for infectious animal diseases, Faculty of Veterinary Medicine, University of Helsinki, Finland, 5 year position  
 April - July 2002: Veterinarian (epidemiology), National Veterinary and Food Research Institute, Department of Risk Assessment, Helsinki, Finland  
 Nov 1998 - March 02: Expert (veterinary immunologicals), National Agency of Medicines, Helsinki, Finland  
 October 1998-Feb 02: Lecturer (general epidemiology), Faculty of Veterinary Medicine, University of Helsinki, Finland  
 July 1997 onwards: Mother (children born 1997 and 1999; nursing, caring, educating, social skills training, personal management service, problem solving, time management, creative activities; ca. 4 years at home as a full-time-mother between June 1997 and March 2002)  
 Aug 1997-March 02: Veterinarian (vaccines and epidemiology), National Veterinary and Food Research Institute, Department of Virology and Epidemiology and Biotechnology Unit, Helsinki, Finland (on maternity leave July 97 - Aug 98 and March 99 - March 02)  
 Aug 96-June 97: Acting assistant professor, Section of Microbiology and Epidemiology, Faculty of Veterinary Medicine, University of Helsinki, Finland  
 April 1988-June 97: Head of the Regional Laboratory (management, pathology, bacteriology), National Veterinary and Food Research Institute (National Veterinary Institute up to December 31, 1992), Regional Laboratory in Seinäjoki, Finland (on study leave Sept 92 -Aug 94 and June 95 - Aug 96, on leave of absence Aug 96 - June 97)  
 Oct 87-March 88: Acting laboratory veterinarian (pathology), National Veterinary Institute, Regional laboratory in Seinäjoki, Finland

July-Aug 1986: Acting large animal veterinarian, Liperi, Finland  
 June 1986: Acting laboratory veterinarian (pathology), National Veterinary Institute, Regional Laboratory in Seinäjoki, Finland  
 Sept 85-May 86: Acting Head of the Regional Laboratory (management, pathology), National Veterinary Institute, Regional Laboratory in Seinäjoki, Finland  
 May-Aug 1985: Acting laboratory veterinarian, National Veterinary Institute, Department of Serobacteriology, Helsinki, Finland  
 Apr-May 1985: Acting large animal veterinarian, Ilomantsi, Liperi, Tuupovaara and Lieksa, Finland  
 Sept 84-March 85: Acting laboratory veterinarian, National Veterinary Institute, Department of Serobacteriology, Helsinki, Finland  
 June-Aug 1984: Acting large animal veterinarian, Ilomantsi, Liperi and Tuupovaara, Finland  
 Dec 83-May 84: Acting laboratory veterinarian, National Veterinary Institute, Department of Serobacteriology, Helsinki, Finland  
 Aug 1983: Acting meat inspector veterinarian, Hämeenlinna, Finland  
 July 1983: Acting public health veterinarian, Hämeenlinna, Finland  
 March-May 1983: Acting large animal veterinarian, Liperi, Heinola and Hamina, Finland  
 Sep 82-Jan 83: as above, Loppi, Finland  
 June-Aug 1982: as above, Loppi and Lieksa, Finland  
 April 1982: as above, Heinola, Finland  
 Dec 1981: as above, Sysmä, Finland  
 June-August 1981: as above, Kaustinen, Liperi and Suomussalmi, Finland  
 April 1981: as above, Liperi, Finland  
 Dec 1980: as above, Sysmä, Finland  
 July-Aug 1980: as above, Muhos and Lieksa, Finland  
 June-Aug 1979: Technician, National Veterinary Institute, Department of Serobacteriology, Helsinki, Finland  
 June 1978 and 1977: AI technician, Artificial Insemination Association of the Northern Finland, Oulu, Finland

## TEACHING, COURSE AND CONFERENCE RESPONSIBILITIES

### TEACHING

CORNELL UNIVERSITY, ITHACA, USA

1. Advanced Methods in Epidemiology (VETCS 666): "Validity, precision, and confounding," 3 h, 10 graduate students, 1995
2. Advanced Methods in Epidemiology (VETCS 666): "Event time analysis = Survival analysis," 6 h, 10 graduate students, 1995
3. Introduction to Epidemiology (VETCS 664): "Questionnaires," 3 h, 10 graduate students, 1995

UNIVERSITY OF HELSINKI, FINLAND

Faculty of Veterinary Medicine, Section of Microbiology and epidemiology (in 1998-2001, Section of Animal Hygiene):

4. In Epidemiology "Computer exercises in epidemiology: Sample size, Measures of frequency, Sensitivity and specificity, Measures of association and potential impact, Bias, Critical review of 3 scientific papers," 4x17 h for 42 veterinary students (group size about 10 students), 1996
5. In Epidemiology "Epidemiology of pneumonia in cattle," 2 h, 42 veterinary students, 1996
6. In Immunology "Laboratory techniques in immunology; Specific immunologic characteristics in animals; Immunology of the fetus and the newborn; Vaccination and vaccines in animals; Host-parasite interactions in bacterial, fungal, viral and parasitic diseases; Hypersensitivity, autoimmune diseases and immunologic disorders in animals; Overview of immunology," 6x2 h for 50 veterinary students, 1996
7. In Immunology "Laboratory exercises in serology," 2x9 h for 50 veterinary students (group size 25 students), 1997
8. In Bacteriology: "Anaerobic bacteria; Primary culturing of bacterial samples," 2 h for 50 veterinary students, 1997
9. In Bacteriology: "Laboratory exercises concerning anaerobic bacteria and primary culturing of bacterial samples," 2x8 h for 50 veterinary students (group size 25 students), 1997
10. In Epidemiology: "Computer exercises in epidemiology: Sample size, Measures of frequency, Sensitivity and specificity, Measures of association and potential impact, Bias, Critical review of 3 scientific papers," 2x18 h for 42 veterinary students (group size about 20 students), 1997
- 11.-14. In Epidemiology: "General epidemiology: Introduction, Sampling and sample size, Measures of disease frequency, Outbreak investigation, Interpreting diagnostic tests in detection of disease, Study designs, Disease causation, Observational studies, Measures of association and effect, Validity and bias, Clinical trials, Confidence level and power, Ethics, Questionnaires," 21-23 h for about 50 veterinary students (additionally, the students completed 15-18 h of independent computer exercises for credit), 1998-2001
- 15.-18. Course in Analytical Epidemiology: "Introduction, Sampling and sample size, Measures of disease frequency, Interpreting diagnostic tests in detection of disease, Study designs, Disease causation, Observational studies, Measures of association and effect, Outbreak investigation, Validity and bias, Clinical trials, Confidence level and power, Ethics, Questionnaires," 21 h for 55 veterinary students (additionally, the students completed 15 h of independent computer exercises), 2002-2005 (4 times)
- 19.-28. In Infectious Epidemiology in Veterinary Medicine: "Basics for infectious epidemiology," about 6 h and organizing the entire course of 5 ECTS for 55 veterinary students btw 2002-2005, 2007-2008, for 110 students in 2006, for 60 students in 2009, for 70 students in 2010, and 2011 (10 times).
- 29.-34. Course in "Data Based Argumentation in Veterinary Epidemiology": similar to the Analytical Epidemiology course

(4 ECTS) but combined to biostatistics taught by Hannu Rita, for 110 veterinary students in 2006, for 55 in 2007 and 2008, for 60 in 2009, for 70 in 2010 and 2011 (6 times).

35. Assessment of learning practices and quality of teaching (5 ECTS) with Viivi Virtanen, Mirja Ruohoniemi, Nina Katajavuori, Sari Lindblom-Ylänne for 19 university teachers in 2011

36.-39. Infectious disease epidemiology (5 ECTS), organizing the course for 70 students in 2012-15 (4 times)

40.-43. Evidence based veterinary medicine (4 ECTS) teaching and organizing the course for 70 students in 2012-15 (4 times)

44. In the course "Quantitative research and statistical analysis in veterinary faculty" (10 ECTS) 4 times 3 hours on topics: study designs in epidemiologic studies and clinical trials, sample size, diagnostic tests, frequency, associations and effect measures in epidemiologic studies, causality, biases, standards for writing and publishing, in Jan 27, Feb 24, March 3 and March 10, 2015.

#### AS AN INVITED VISITING LECTURER

1. In the Royal Veterinary and Agricultural University, Denmark, Copenhagen for the NOVA (The Nordic Forestry, Veterinary and Agricultural University Network) Course "Clinical and Biomedical Research and Scientific Methods": "Observational study designs: descriptive studies, cross sectional studies, case control studies and cohort studies" 3 h, 20 graduate students, March 19, 2007.

2. In the Institute of Veterinary Medicine and Animal Sciences, Estonian University of Life Sciences, Estonia, Tartu for the Postgraduate course "Introduction into veterinary epidemiologic research - using STROBE principles": "Diagnostic test issues for postgraduates" 2 h, 26 graduate students, March 5, 2013

3. In the University of Nairobi, Kenya. Herd Health management course (under the North-South-South-collaboration together with Drs. E Mustonen, J Muthee, G Gitau, C Mulei, ED Karimuribo and SI Kimera) for 17 undergraduate students from Kenya, Tanzania and Finland, btw June 3 and 10, 2014

4. In the University of Helsinki, one 2 h interactive lecture in the course Pienryhmähjous farmasiassa (2 op) [How to supervise small groups in pharmacy (2 ECTS)], Sept 3, 2015

#### POST GRADUATE COURSE OR CONGRESS ORGANIZER

1. "The Nordic Course in Veterinary Epidemiology, Part 2" by Drs. Tim E Carpenter and Ian A Gardner, University of Helsinki, Faculty of Veterinary Medicine, Section of Microbiology, Suitia, Finland, June 9-19, 1997 (funding through NOVA University Network; co-organizer) – 40 participants

2. "Diagnostic test evaluation course" by Dr. Ian Gardner for postgraduate students and professionals, University of Helsinki, Faculty of Veterinary Medicine, Section of Microbiology and Epidemiology, Helsinki, Finland, December 4-5, 2002 (funding through Applied Biosciences (= ABS) -graduate school) – 70 participants

3. "Clinical trials course" by Dr. Ian Dohoo for postgraduate students and professionals, University of Helsinki, Faculty of Veterinary Medicine, Section of Microbiology and Epidemiology, Helsinki, Finland, June 1-2, 2003 (funding through Medical Companies Pfizer, Orion Diagnostica and Vetcare) – 70 participants

4.-5. "Infectious epidemiology course" 2.5 - 3 study wks by myself and several visiting lecturers for veterinary students, University of Helsinki, Faculty of Veterinary Medicine, Section of Microbiology and Epidemiology, Helsinki, Finland, September – November, 2003-2004, 60 participants

6.-7. "Epidemiology and control of animal disease derived zoonoses course" 2.5 study wks by several visiting lecturers for postgraduate students, University of Helsinki, Faculty of Veterinary Medicine, Section of Microbiology and Epidemiology, Helsinki, Finland, September – November, 2003-2004 (funding through ABS-graduate school), 10 participants

8.-9. "Drop-in course in statistics" by Dr. Tapani Lyttikäinen and myself for postgraduate students, University of Helsinki, Faculty of Veterinary Medicine, Section of Microbiology and Epidemiology, Helsinki, Finland, December 2003 and November 2005 (funding through ABS-graduate school), 15 participants

10. "Nordic postgraduate course in veterinary epidemiology, part 1" by Drs. Ian Dohoo and Wayne Martin for postgraduate students, NOVA University Network, Espoo, June 2005 (funding by NOVA) – 40 participants

11. "Multilevel modeling" by Drs. Ian Dohoo and Henryk Stryhn for postgraduate students, Mäntsälä, January 2006 (funding through ABS-graduate school) – 15 participants

12. "Nordic postgraduate course in veterinary epidemiology, part 2: Advanced methods" by Drs. Ian Dohoo and Wayne Martin for postgraduate students, NOVA University Network, Espoo, June 2006 (funding by NOVA) – 40 participants

13. NOSOVE Annual meeting with course "Surveys and monitoring systems – design questions, analysis and presentation of results, 2007" Espoo, SAS-Radisson Hotel by Drs. Marcus Doherr and Nils Toft, March 26-27, 2007 – 25 participants

14. "SVEPM annual conference, 2007" Espoo, Dipoli, March 28-30, 2007 – 260 participants using a budget of 87 000 euros (Anna-Maija Virtala as the main local organizer)

15. "Infectious Disease Modelling Short Course" by Profs. Yrjö T. Gröhn and Ynte H. Schukken for postgraduate students and professionals, hotel Arthur, Helsinki, Finland, January 7-9, 2010 - 18 participants

16. "Drop into Biostatistics for Researchers" by Prof Elja Arjas, Veterinary Faculty, January 18-29, 2010 - 18 participants

17. "EpiNOVA advanced course in GIS and spatial analysis using open source software" by Drs Javier Sánchez and Raphaël Vanderstichel, Mustiala, Tammela, June 4-13, 2012 - 11 participants

18. "Quantitative research and statistical analysis in veterinary faculty" [in Finnish] together with Dr Vesa Niskanen, 10 ECTS, btw January and May 2015 – about 40 participants

19. Research methods study groups for biostatistical and epidemiologic issues in study plans and analyses, Faculty of Veterinary Medicine, University of Helsinki together with statisticians Hannu Rita or Heli Rita, about 4 times per year for 1,5 h. Since Feb 2, 2003 until Sept 2015, 62 study groups, 629 participations by 208 participants, ongoing.

## TEACHING MATERIAL

1. Lecture notes for "Validity, precision, and confounding," Cornell University, NY, USA, 1995; 2. Lecture notes for "Event time analysis = Survival analysis," Cornell University, NY, USA, 1995; 3. Lecture notes for "Questionnaires," Cornell University, NY, USA, 1995; 4. Compute exercise notes for Veterinary Epidemiology course, University of Helsinki, Faculty of Veterinary Medicine, 1996 (revised 1998, 1999, 2000, 2001; 6x10 pages); 5. Lecture notes for Veterinary Immunology course, University of Helsinki, Faculty of Veterinary Medicine, Department of Microbiology and Epidemiology, 1997 (69 pages); 6. Lecture notes for General/analytical Epidemiology, University of Helsinki, Faculty of Veterinary Medicine, 1998 (revised annually until 2004; about 44 pages); 7. Lecture notes for Infectious Epidemiology in Veterinary Medicine, University of Helsinki, Faculty of Veterinary Medicine, 2003: revised annually (about 30-40 pages); 8. Video (DVD) Tuberculin testing of cattle in Osuuskunta Sisämaan Jalostus, Hollola, University of Helsinki, Faculty of Veterinary Medicine, 2003 (planning and direction together with Terhi Ali-Vehmas, recording Tero Tchokkinen): used in veterinary education 2004-; 9. Video (DVD) Tuberculin testing of a wild deer in Korkeasaari, Helsinki, University of Helsinki, Faculty of Veterinary Medicine, 2003 (planning and direction together with Terhi Ali-Vehmas, recording Tero Tchokkinen): used in veterinary education 2004-; 10. Use of Basic Support for Cooperative Work (BSCW) for running the epidemiology courses in the Faculty of Veterinary Medicine 2005-2007; 11. Lecture notes for APEA (Data based argumentation in veterinary medicine), University of Helsinki, Faculty of Veterinary Medicine, 2006; revised annually 2007-2011 (about 50 pages); 12. Use of Moodle for the course and learning management system and virtual learning environment in the epidemiology courses in the Faculty of Veterinary Medicine 2008-; 13. Lecture notes for EBVM (Evidence based veterinary medicine), University of Helsinki, Faculty of Veterinary Medicine, 2012- (about 100 pages), revised annually; 14. Production of computer exercises (for Evidence based veterinary medicine course) using internet based games, with Tommi Nikkanen from Department of Computer Sciences in University of Helsinki, 2014 -; 15. Production of outbreak investigation internet games (for Evidence based veterinary medicine course), with Evelliina Pakarinen, Tarja Holopainen and Jouko Niinimäki from Department of Computer Sciences and Joanna Koort and Heli I Koskinen from Faculty of Veterinary Medicine in University of Helsinki, 2015-; 16. Production of bacterial identification internet games (for microbiology course), main response persons being Silja Åvall-Jääskeläinen and Joanna Koort, 2015-;

## COMPLETED STUDENT SUPERVISION

PhD supervisor:

1 as main supervisor and 3 as co-supervisor

Specialization supervisor:

17 as main supervisor

Licentiate thesis supervisor:

19 as main supervisor and 12 as co-supervisor

Candidate thesis supervisor:

7 as main supervisor and 2 as co-supervisor

## WORK AS AN EXPERT

1. 1998 Comments on biostatistical methods in clinical trials (CVMP guideline), 1998 for the National Agency of Medicines (NAM) - confidential; 2. 1999 Evaluation of safety and efficacy of a coccidiosis vaccine for poultry, 1999 for NAM - confidential; 3. 2000 Evaluation of safety and efficacy of a canine parvovirus vaccine for dogs, 2000 for NAM - confidential; 4. Evaluation of safety and efficacy of a canine infectious tracheobronchitis vaccine for dogs, 2000 for NAM - confidential; 5. 2001 Evaluation of safety and efficacy of an atrophic rhinitis vaccine for swine, 2001 for NAM - confidential; 6. 2002 Evaluation of safety and efficacy of a rabies vaccine for dogs, cats, and horses, 2002 for NAM - confidential; 7. Expert opinion on the draft of the act for the control of classical swine fever, 2002 for the Ministry of Agriculture and Forestry in Finland, MAF; 8. 2003 Expert opinion on the draft for the act for the control of bovine viral diarrhoea, 2003 for MAF; 9. Expert opinion on the draft for the Finnish Zoonosis Strategy, 2003 for MAF; 10. 2004 Expert opinion on the draft for the change of the act 655/2003 concerning eimeriosis, 2004 for MAF; 11. Expert opinion on the draft for the act in connection to the directive 2002-99-EY about requirements concerning certain animal diseases in production, refining and delivery of animal derived food stuffs, 2004 for MAF; 12. Expert opinion on the report of the work group "Control of the Infectious Animal Diseases", 2004 for MAF; 13. Commenting the report of the risk assessment of the use of antimicrobial test positive raw milk as feed, 2004 for the National Veterinary and Food Research Institute, EELA; 14. 2005 Member of the expert group for the qualitative risk assessment of the spreading of the foot and mouth disease in the Finnish animal production, 2005 for EELA; 15. 2005 Member of the steering committee for the Makera project number 5211 "Pathogenic intestinal Brachyspira spp. bacteria in Finnish domestic animals, conducted 2002-2005 in EELA; 16. 2005 Member of the steering committee for the Makera project Dno 334/502/2002, Project number 310112 "The role of calf cryptosporidia, giardia and noroviruses as zoonotic agents", conducted 2002-2005 in EELA; 17. 2006 Expert opinion on the following drafts of the acts 572/1995; Ea 4 (animal disease inspections in common market) and 655/2003: Ea 8 (import inspections on fur animal feeds), 2006 for MAF; 18. 2007 Expert opinion on the draft of the act 386/2006 (prevention of avian influenza), 2007 for MAF; 19. 2008 Member of the steering committee for the Makera project Dno 4812/502/2005 "The occurrence of diffuse viral diseases of in the Finnish poultry production", conducted 2006-2008 in the Finnish Food Safety

Authority, Evira; 20. 2007Expert opinion on the draft (Eräiden Euroopan yhteisön ulkopuolisista maista tuotavien elävien eläinten sekä niiden alkioiden ja sukusolujen eläintautivaatimuksista) to replace the act 231/1997 (Eräiden kolmansista maista tuotavien eläinten sekä niiden alkioiden ja sukusolujen eläintautivaatimuksista) for Dean of the Veterinary Faculty; 21. 2010Member of the steering committee for the quantitative risk assessment project "The spread of Foot and mouth disease within Finland and emergency vaccination in case of an epidemic outbreak, 2008-2010 for Evira; 22-23. 2010Evaluator for two applications for the Postdoctoral Researcher (tutkijatohtori), September 2010 for the Helsinki University; 24. 2010Member of the Evaluation Committee at Anna Ohlson's public defence of her thesis for the doctor's degree (Bovine Coronavirus and Bovine Respiratory Syncytial Virus Infections in Dairy Herds Prospects for Control), October 8, 2010 for the Swedish University of Agricultural Sciences, Faculty of Veterinary Medicine and Animal Science; 25. 2010Member of the expert panel to evaluate Evira for the Ministry of Agriculture and Forestry via Net Effect Oy; 26. 2011Expert assessor for the position of Senior Lecturer in Epizootiology and Infectious Disease Control for the Swedish University of Agricultural Sciences, Faculty of Veterinary Medicine and Animal Science, five applicants, by January 15, 2011; 27. 2011Expert opinion on the draft for the MAF act (letter number 871/13/2011: Euroopan unionin ulkopuolisista maista tuotavien lemmikkieläinten, eläinperäisiä tuotteita sisältävien henkilökohtaisten lähetysten ja eläintautien leviämisen vaaraa aiheuttavien tavaroiden tuontitarkastuksesta) for the Dean of the Veterinary Faculty via Thomas Spillman; 28. 2011Member of the steering committee for the risk assessment project 2803/502/2008 "Controlling the risks for animal diseases while restructuring the domestic animal husbandry – Eläintautiriskien hallinta kotieläintalouden rakennemuutoksessa", 2008-2011 for Evira; 29. 2011Expert opinion on the draft of the Risk profile for the entry of African Swine Fever into Finland for Evira's Risk Assessment Research Unit; 30. 2013Expert opinion on the draft for the MAF act (letter number 729/13/2013: Luonnos asetukseksi Euroopan unionin ulkopuolelle vietäville eläimille ja eläimistä saaduille tuotteille asetettavista eläintautivaatimuksista ja tehtävistä tarkastuksista) for the Dean of the Veterinary Faculty; 31-42. 2013Expert opinion on the draft for the 12 MAF acts (letter number 667/13/2013: Lausuntopyyntö 12 ehdotetun eläintautilain nojalla annettavan asetuksen luonnoksesta) for the Dean of the Veterinary Faculty

#### SCIENTIFIC PROGRAMME COMMITTEE MEMBERSHIPS

1999 The Nordic Committee for Scientific Cooperation (NKVet): "National Disease Control in Farmed Animals", Stockholm, Sweden, October 1-2, 1999:

2010 The Nordic Committee for Scientific Cooperation (NKVet): 24th NKVet Symposium "Databases in veterinary medicine – Validation, harmonisation and application", Copenhagen, Denmark, April 19-20, 2010

#### REFEREE

The Finnish Veterinary Journal; Animal: An International Journal of Animal Bioscience (Section/Category: 4. Behaviour, welfare and health and Section/Category: 2b. Nutrition: Ruminants); Acta Veterinaria Scandinavica; European Research Area-Net Animal Health and Welfare (ANIHWA)

#### ADMINISTRATIVE WORK

2002->Member of the specialization committee of the faculty of veterinary medicine

2002->Leader of the steering group for the infectious disease specialization programme in the faculty of veterinary medicine

2002-2006 Member of the advisory board for the continuing education of veterinarians in the faculty of veterinary medicine

2004-2011 Board member in the Nordic Society for Veterinary Epidemiology

2006-2007 Committee member in the Society for Veterinary Epidemiology and Preventive Medicine (as a local conference organizer)

2006-2010 Board member in the Finnish Epidemiology Society

2007-2009 Debuty member in the executive team for the department of basic veterinary sciences of the faculty of veterinary medicine

2007-2010 Member of the NOVA team in the faculty of veterinary medicine

2008-2009 Member of the working group clarifying the specialization programme in the faculty of veterinary medicine

2010-2011 Member of the international affairs committee of the faculty of veterinary medicine

2010-2013 Debuty member of the teaching skills committee of the faculty of veterinary medicine

2014->Member of the teaching skills committee of the faculty of veterinary medicine