

Program Zoonoses 2019 - International Symposium on Zoonoses Research

Joint meeting of the National Research Platform for Zoonoses and the Research Network of Zoonotic Infectious Diseases



= contributions from the Research Network of Zoonotic Infectious Diseases

Wednesday, October 16, 2019

14:00 Registration Opens (Poster Mounting)

15:00 – 17:00 Plenary Session I: Keynotes (Room Ballsaal)

Language: English/ German
Chair: *Christian Drosten*

15:00 **Opening Remarks: Joint meeting of the German Research Platform for Zoonoses and the Research Network of Zoonotic Infectious Diseases**
Martin H. Groschup (Friedrich-Loeffler-Institute, Greifswald – Isle of Riems) & Christian Drosten (Charité Berlin)

Welcome Note of the Federal Government
Dietrich Rassow (Federal Ministry of Food and Agriculture)

15:30 **Keynote I: A massive West Nile virus epizootic in Germany, 2018/19**
Martin H. Groschup, Friedrich-Loeffler-Institute, Greifswald – Isle of Riems, Germany

16:15 **Keynote II: Arboviruses as Neglected Tropical Diseases – Dengue, Zika, Chikungunya**
Thomas Jänisch, Institute of Global Health, Heidelberg University Hospital, Germany

17:00 Coffee Break

17:20 – 18:50 Session 1: Innate and Adaptive Immune Response (Room Ballsaal)

Chairs: *Michael Mühlebach and Martin Blume*

17:20 **Carvacrol, the major component of oregano oil, alleviates *Campylobacter jejuni* induced acute enterocolitis in a clinical murine model for campylobacteriosis**
Markus M. Heimesaat, Soraya Mousavi, Ulrike Escher, Anna-Maria Schmidt, Stefan Bereswill

17:35 **A single amino acid position exchange in the nucleoprotein of the tick transmitted Thogotovirus leads to complete escape from human MxA restriction**
Jonas Fuchs, Laura Graf, Alexander Oschwald, Georg Koch

- 17:50 **Translational studies exploring the lack of immunity against rabies virus infection**
Corine Geurts van Kessel, Carmen Embregts, Thijs Kuiken, Marion Koopmans
- 18:05 **T-lymphocyte homing signatures in human Lassa fever**
Julia Port, David Wozniak, Elisa Pallasch, Yemisi Ighodalo, Stephan Günther, Lisa Oestereich, César Muñoz-Fontela
- 18:20 **Novel therapeutic approach to cure Lassa fever**
Lisa Oestereich, Sabrina Bockholt, Elisa Pallasch, Stephan Günther
- 18:35 ***Coxiella burnetii* escapes cellular self-defense of infected NK cells**
Svea Matthiesen, Kati Franzke, Rico Jahnke, Michael R. Knittler,
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17:20 – 18:50 Session 2: Public Health (Room Steglitz)

Chairs: *Susanne Kutzora and Stefan Brockmann*





- 17:20 **ts-mutants of porcine influenza viruses: Pathway to live-attenuated vaccines in pigs?**
Annika Graaf, Fabian Deutskens, Dinah Henritzi, Anja Petrov, Philipp Petric, Martin Schwemmler, Martin Beer, Timm Harder
- 17:35 **Sensibilisation of general practitioners towards imported arboviral infections in the light of established populations of *Aedes albopictus* in Baden-Württemberg 2019**
Hannah Höglund-Braun, Christiane Wagner-Wiening
- 17:50 **Tick-borne encephalitis virus isolated from natural foci causing TBE vaccine breakthroughs**
Gerhard Dobler, Lidia Chitimia-Dobler, Malena Bestehorn-Willmann
- 18:05 **Molecular epidemiology of hantavirus disease in Germany**
Mirko Faber, Detlev H. Krüger, Klaus Stark, Jörg Hofmann, **Sabrina Weiss**
- 18:20 **Prevention of zoonoses by using traditional and social media for health communication by local public health authorities (LPHA) in Germany**
Sebastian Kleele, Christina Princk, Marion Müller, Maren Mylius, Johannes Dreesman, Kerstin Dressel
- 18:35 **Impact of hygiene- and management measures on the ESBL- and AmpC-colonization of broiler chickens**
Caroline Robé, Katrin Daehre, Roswitha Merle, Sophie Fiedler, Christa Ewers, Sebastian Guenther, Uwe Roesler

18:50 Poster Viewing Session/ Welcome Reception

Thursday, October 17, 2019


08:30 Registration continued

09:00 – 10:30 Session 3: New and Re-Emerging Zoonotic Diseases (Room Ballsaal)
Chairs: *Asisa Volz and Christian Drosten*

- 09:00 **Genetic diversity of *Treponema pallidum* subsp. *pertenue* infecting wild non-human primates in Taï National Park (TNP), Cote d'Ivoire**
Benjamin Mubemba, Jan Gogarten , Ariane Dux , Markus Ulrich, Kamilla Pléh, Fabian Leendertz, Sebastien Calvignac-Spencer
- 09:15  **Development and characterization of small animal models for variegated squirrel bornavirus 1 (VSBV-1)**
Kore Schlottau, Daniel Nobach, Christiane Herden, Martin Beer, Donata Hoffmann
- 09:30  **Fatal human variegated squirrel bornavirus 1 encephalitis is characterized by immunopathological changes**
Dennis Tappe, Jonas Schmidt-Chanasit, Jessica Rauch, Christiane Herden
- 09:45  **Isolation and characterization of Puumala orthohantavirus from Germany**
Florian Binder, Marion Saathoff, Jona Freise, Rainer G. Ulrich
- 10:00  **In vivo evaluation of a MVA based ZikV antigen library in a mouse model for ZikV disease**
Jan Schwarz, Dominik Forster, Gerd Sutter, Asisa Volz
- 10:15 **New "omics"-insights into the genome evolution and virulence potential of the emerging group of marine *Brucella* species**
Dirk Hofreuter, Holger Brendebach, Sandro Andreotti, Kerstin Neubert, Boyke Bunk, Matthias Flor, Josephine Grützke, Cathrin Spröer, David Fretin, Jörg Overmann, Sascha Al Dahouk

09:00 – 10:30 Session 4: Diagnostics and NGS (Room Zehlendorf)
Chairs: *Victor Corman and Martin Beer*

- 09:00 **Fast differentiation of Enterobacteriaceae using Raman Spectroscopy**
Amir Nakar, Karina Weber, Sascha D. Braun, Ralf Ehricht, Petra Rösch, Jürgen Popp
- 09:15 **Influence of infection route on neuropathology of tick-borne encephalitis virus in a murine infection model**
Mathias Boelke, Christina Puff, Fanny Naccache, Frederic Gusmag, Katrin Liebig, Sonja T. Jesse, Andreas Beineke, Gerhard Dobler, Ab D.M.E. Osterhaus, Wolfgang Baumgärtner, Claudia Schulz and Stefanie C. Becker
- 09:30 **Rabies virus in Namibian Kudus – Exploring the Genetic Diversity of Lyssaviruses**
M. Sten Calvelage, Conrad Freuling, Thomas Müller, Martin Beer, Dirk Höper
- 09:45 **Concordance between genomic typing methods can simplify data exchange for surveillance and control of infectious diseases**
Stefanie Lüth, Carlus Deneke, Sylvia Kleta, Sascha Al Dahouk

10:00  **Genome-Wide Identification of Genomic Determinants for Host Restriction in *Campylobacter jejuni***
Lenard Epping, Rosario M. Piro, Marie-Theres Knüver, Maria Borowiak, Charlotte Huber, Andrea Thürmer, Burkhard Malorny, Kerstin Stingl, Angelika Fruth, Lothar H. Wieler, Torsten Semmler

10:15 **Identification of host-associated genomic determinants in *Escherichia coli***
Sumeet Kumar Tiwari, Boas Van der Putten, Trung Nguyen V., Martin Bootsma, Roberto La Ragione, Sebastien Matamoros, Hoa Ngo T., Christian Berens, Joy Leng, Julio Álvarez, Dominique Jolivet, Marta Ferrandis-Vila, Jenny Ritchie, Angelika Fruth, Stefan Schwarz, Lucas Domínguez, María Ugarte-Ruiz, Astrid Bethe, Lothar H. Wieler, Christian Menge, Amanda Fivian-Hughes, Constance Schultsz, Torsten Semmler


09:00 – 10:30 Session 5: Epidemiology and Ecology of zoonotic infections I (Room Steglitz)

Chairs: *Jonas Schmidt-Chanasit and Ard Nijhof*


09:00 **Are ESBL-producing *E. coli* spread in the environment by manure application, soil cultivation and wind erosion?**
Paul Siller, Katrin Dähre, Uwe Rösler

09:15 **Cross-Protection of Dengue Virus Infection against Congenital Zika Syndrome, Northeastern Brazil**
Celia Pedrosa, **Carlo Fischer**, Marie Feldmann, Eduardo Martins Netto, Beate M. Kümmerer, Jan Felix Drexler

09:30 **Tropical rainforest flies carrying pathogens form stable associations with social non-human primates**
Jan Frederik Gogarten, Ariane Düx, Benjamin Mubemba, Kamilla Pléh, Constanze Hoffmann, Alexander Mielke, Jonathan Müller-Tiburtius, Andreas Sachse, Roman Wittig, Sébastien Calvignac-Spencer, Fabian Leendertz

09:45  **Does cold winter really limit the dengue vector *Aedes aegypti* in Europe? – A meta analysis and experimental evaluation of the cold tolerance of *Ae. aegypti* versus *Ae. albopictus* eggs**
Isabelle Kramer, Christian Scherer, Aljoscha Kreß, Meghnath Dhimal, David A. Groneberg, Bodo Ahrens, Ulrich Kuch, Parbati Phuyal, Doris Klingelhöfer, Ruth Müller



10:00 **West Nile virus in Germany: vector competence of native *Culex pipiens* and *Aedes albopictus***
Cora Marielle Holicki, Ute Ziegler, Helge Kampen, Doreen Werner, Cornelia Silaghi, Martin H. Groschup, Ana Vasić

10:15  **Evaluation of the vector competence of ticks for *Coxiella burnetii* using an artificial feeding system**
Sophia Körner, Gustavo R. Makert, Katja Mertens-Scholz, Klaus Henning, Martin Pfeffer, Sebastian Ulbert

10:30 Coffee Break and Poster Viewing (even poster numbers)

11:00 – 12:30 Session 6: Epidemiology and Ecology of zoonotic infections II (Room Ballsaal)

Chairs: *Ruth Müller and Rainer Ulrich*

- 11:00 **Epidemiology of Leptospirosis in Uganda - Starting from Scratch**
Anou Dreyfus, Lordrick Alinaitwe, Kathryn Allan, Sabrina Rodriguez-Campos, Paul Torgerson, Jonathan W Dyal, David Boulware, Raewynne Pearson, Terence Odoch, Charles Kajura, Steven Kakooza, Katharine Pelican, Dominic Travis, Michael Mahero, Christina Faust, Edridah M Tukahebwa, Valentine Jaquier, Amanuel Tsegay, Lawrence Mugisha, Clovice Kankya
- 11:15  **A multitaxa study on virus diversity and abundance in habitats differing in their level of disturbance reveals virus-host-specific prevalence patterns**
Kyra Hermanns, Florian Zirkel, Sandra Junglen
- 11:30 **Anthroponotic transmission of *Cryptosporidium spp.* in rural sub Saharan Africa: a one health study**
Daniel Eibach, Ralf Krumkamp, Simone Caccio, Akim Adegnika, John Amuasi, John Lusingu, Raphael Rakotozandrindrainy, Jürgen May
- 11:45  **Tick-borne encephalitis: First results of intensified surveillance in Bavaria and Baden-Württemberg (TBENAGER)**
Teresa M. Kreusch, Merle M. Böhmer, Christiane Wagner-Wiening, Ole Wichmann, Wiebke Hellenbrand
- 12:00 **Citizen science³: surveillance of Usutu virus activity in Germany**
Renke Lühken, Daniel Cadar, Norbert Becker, Stefan Bosch, Lars Lachmann, Jonas Schmidt-Chanasit
- 12:15 **Cluster Analysis with German Antimicrobial Resistance (AMR) Data for Humans and Food-producing Animals**
Beneditta Suwono, Bernd-Alois Tenhagen, Tim Eckmanns, Heike Kaspar


11:00 – 12:30 Session 7: Novel Methods (Room Steglitz)


Chairs: *Imke Steffen and Sascha Al-Dahouk*

- 11:00 **An antique origin of measles**
Ariane Düx, Sebastian Lequime, Livia Patrono, Baptiste Prepoint, Markus Ulrich, Jasmin Schlotterbeck, Jan Gogarten, Kevin Merkel, Annette Mankertz, Navena Widulin, Fabian Leendertz, Thomas Schanlke, Philippe Lemey, Sébastien Calvignac-Spencer
- 11:15 **Rabies Virus Cell Tropism in 3D – comparison of attenuated, lab and field strains**
Madlin Potratz, Luca Zaeck, Stefan Finke

11:30 **Three-dimensional co-cultivation of cells from different species and tissue origin in a novel bioprinted array as a diagnostic tool for virus detection**
Robert Koban, Markus Neumann, Franziska Schwarz, Tobias Lam, Lutz Kloke, Heinz Ellerbrok

11:45 **Differential efficacy of novel antiviral substances against Cowpox virus (CPXV) in 3D and monolayer cell culture**
Markus Neumann, Robert Koban, Philopp Nelson, Heinz Ellerbrok

12:00  **A specialized thin agar method (STAM) to study electric signaling in bacterial biofilms**
Julia Assmann, Silvio Bürge, Christoph Schaudinn, Michael Laue, Birgit Walther

12:15  **An in vitro system to study heteroresistance and metabolic host interaction on mature tissue cysts of *Toxoplasma gondii***
Céline Christiansen, Jana Scholz, Frank Seeber, Michael Laue, Martin Blume

12:30 Lunch & Poster Viewing
12.30 - 13.30 even poster numbers
13.30 - 14.30 odd poster numbers

14:30 – 16:00 Plenary Session II (Keynotes) (Room Ballsaal)
Chair: *Martin H. Groschup*

14:30 **Keynote III:**
Animal tuberculosis: the challenge of controlling a global multi-host infection
Christian Gortázar Schmidt, Institute for Game and Wildlife Research, Universidad de Castilla, Spain

15:15 **Keynote IV:**
Situation of leishmaniosis in Europe from humans to wildlife
Laia Solana-Gallego, Department of Animal Medicine and Surgery, Autonomous University of Barcelona, Spain

16:00 Coffee Break

17:00 – 19:00 General Assembly National Research Platform for Zoonoses with the Election of Internal Advisory Board (Room Ballsaal)

Language: German

Chairs: *Stephan Ludwig, Martin H. Groschup, Christian Drosten*

Wahl des Internen Beirats
Bericht über das vergangene Jahr




19:00 – 20:00 Poster Viewing Session (odd poster numbers) + Casual Reception

20:00 Social Dinner (Room Ballsaal)


Friday, October 18, 2019

07:30 – 09:00 Young Scientist Breakfast

09:30 – 11:00 Session 8: Pathogen-Cell Interaction (Room Zehlendorf)

- 09:30  **Immunogenicity and fetoprotective capacity of recombinant MVA Virus expressing Zika Virus E and prM/M proteins in a pregnant mouse model**
Dominik Forster, Jan Hendrik Schwarz, Gerd Sutter, Asisa Volz
- 09:45  **Impact of polymorphisms in the MERS-coronavirus spike protein and its receptor DPP4 on viral entry into host cells**
Hannah Kleine-Weber, Simon Schröder, Nadine Krüger, Khaled R. Alkharsah, Marcel A. Müller, Christian Drosten, Stefan Pöhlmann, Markus Hoffmann
- 10:00 **A single amino acid substitution in the Ebola virus glycoprotein reduces the dependence of host cell entry on cellular cysteine proteases**
Markus Hoffmann, Svenja Kaufmann, Carina Fischer, Wiebke Maurer, Stefan Pöhlmann
- 10:15 **Enhanced replicative capacity and anti-immune activity of epidemic recombinant MERS-Coronavirus**
Simon Schroeder, Christian Drosten, Marcel Müller, Victor Corman, Doreen Muth, Ronald Dijkman, Thorsten Wolff, Christin Mache
- 10:30 **Structure of a functional cap-binding domain in Rift Valley fever virus L protein**
Nadja Gogrefe, Sophia Reindl, Stephan Günther, **Maria Rosenthal**, **Silke Olschewski**
- 10:45  **Single cell assay for DNA uptake in *Campylobacter jejuni* - a tool for monitoring the adaptive potential of the food-borne pathogen**
Julia Golz, Kerstin Stingl
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09:30 – 11:00 Session 9: New and Re-Emerging Zoonotic Diseases II (Room Steglitz)

- 09:30 **The cowpox virus reservoir – are host-species specific strains the key?**
Saskia Weber, Kathrin Jeske, Florian Pfaff, Rainer G. Ulrich, Martin Beer, Donata Hoffmann
- 09:45  **Phenotypes of MERS-CoV infections in human lung explant cultures**
Christin Mache, Simon Schröder, Diana Fatykhova, Andreas Hocke, Stefan Hippenstiel, Christian Drosten, Thorsten Wolff
- 10:00 **Establishment of a reverse genetics system for the cell-culture-adapted hepatitis E virus genotype 3c-strain 47832c**
Johannes Scholz, Alexander Falkenhagen, Christine Bächlein, Reimar Johné
- 10:15 **Identification of animal reservoirs of Fort Sherman virus, a New World zoonotic orthobunyavirus**
Edmilson F. de Oliveira Filho, Roberto Franke, Ianei Carneiro, Jan Felix Drexler, Carlo Fischer
- 10:30 **Mammalian hepatitis delta virus without hepadnavirus coinfection in the neotropical rodent *Proechimys semispinosus***


Sofia Paraskevopoulou, Fabian Pirzer, Julian Schmid, Victor Max Corman, Nora Goldmann, Simon Schroeder, Lina Theresa Gottula, Andrea Rasche, Doreen Muth, Jan Felix Drexler, Alexander Christoph Heni, Georg Joachim Eibner, Rachel A. Page, Terry C. Jones, Marcel Alexander Müller, Dieter Glebe, Simone Sommer, Christian Drosten


10:45 **Arenavirus persistence in *Mastomys natalensis*, the natural rodent reservoir of Lassa virus**
Chris Hoffmann, Elisa Pallasch, Sabrina Bockholt, David Wozniak, Jonas Müller, Lisa Oestereich, Stephan Günther


09:30 – 11:00 Session 10: Antimicrobial use and resistance (Room Ballsaal)

09:30  **Vitamin C alleviates *Campylobacter jejuni* induced acute enterocolitis in a clinical model for acute campylobacteriosis**
Stefan Bereswill

09:45 **Characteristics of a P1-/P7-like prophage mediating transmission of an incorporated transposon comprising a blaCTX-M-15 resistance gene**
Jens Andre Hammerl, Claudia Jäckel, Valerie Osieka, Silvia Schmogger, Claudia Szentiks, Annemarie Käsbohrer

10:00  **Impact of two antibiotic regimes on composition and diversity of gut microbiomes in horses with colic surgery – a comparative analysis**
Anne Kauter, Antina Lübke-Becker, Dania Kanapin, Sabita Stöckle, Lennard Epping, Torsten Semmler, Lothar H. Wieler, Heidrun Gehlen, Birgit Walther

10:15  **Bacterial adaptation to surfactant antimicrobials**
Olga Makarova, Phil Ferguson, Paul Johnston, A. James Mason, Jens Rolff, Uwe Roesler

10:30  **The mode of action of *T. gondii* tissue cyst inhibitors**
Deborah Maus, Elyzana Putrianti, Jens Pikkemaat, Martin Blume

10:45 **Antimicrobial usage in German cattle farms - which groups of active ingredients are used?**
Katharina Hommerich, Maria Hartmann, Svetlana Kasabova, Annemarie Käsbohrer, Lothar Kreienbrock

11:00 Coffee Break & Poster Viewing (all poster numbers)

11:30 – 12:15 Plenary Session III: Keynotes (Room Ballsaal)
Language: English
Chair: *Stephan Ludwig*

11:30 Keynote V: Human filarial infections – a group of NTDs with a zoonotic relative of increasing importance
Achim Hörauf, Bonn University Medical Center, Germany

12:15 Lunch & Poster Viewing (all poster numbers)

**13:15 – 15:00 Plenary Session III (continued): Keynotes
(Room Ballsaal)**

Language: English

Chair: *Stephan Ludwig*

13:15

Keynote VI:

Nipah Virus: An Emerging Zoonosis and Global Health Threat

Jonathan H. Epstein, EcoHealth Alliance, New York, USA

14:00

Poster Awards and Farewell

15:00

End of Meeting