DFG Priority Programme 1399

Host-Parasite Coevolution –
Rapid Reciprocal Adaptation and its Genetic Basis

Programme

Monday 30th

11:00  Welcome, coffee/tea

12:00  Welcome and Introduction: Joachim Kurtz

12:10  Bernd Sures
       University of Duisburg-Essen
       Introduction to Cluster 1:
       "Coevolutionary aspects of anguillicoloid swim
       bladder nematodes and their recently acquired eel
       hosts"

12:20  Bernd Sures
       University of Duisburg-Essen
       Host-parasite adaptation of invasive parasites
       – Cluster 1 (p. 13)

12:30  Horst Taraschewski
       University of Karlsruhe
       Experimental investigations on morphological and
       life history traits and their genetic basis in the
       invasive nematode Anguillicoloides crassus from
       native and alien populations
       – Cluster 1 (p. 14)

12:40  Klaus Knopf
       Leibniz-Institute of Freshwater
       Ecology and Inland Fisheries
       Immune response against the eel swim bladder
       nematode Anguillicoloides (syn. Anguillicola)
       crassus in the co-evolved and the recently acquired
       host
       – Cluster 1 (p.15)

12:50  Thorsten Reusch
       Leibniz-Institute of Marine
       Sciences Kiel
       Introduction to Cluster 2:
       „Evolutionary genetics of three-spined stickleback
       – parasite interactions“
<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker/Institution</th>
<th>Summary</th>
<th>Cluster/Page</th>
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<tr>
<td>13:00</td>
<td><strong>Thorsten Reusch</strong> Leibniz-Institute of Marine Sciences Kiel</td>
<td>Experimental resistance evolution and its genetic basis in the <em>Diplostomum-Gasterosteus</em> host-parasite system</td>
<td>Cluster 2  (p.16)</td>
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<td><strong>Erich Bornberg-Bauer</strong> University of Münster</td>
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<td><strong>Monika Stoll</strong> Leibniz-Institute for Arteriosclerosis Research Münster</td>
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<td>13:10</td>
<td><strong>Jörn Peter Scharsack</strong> University of Münster</td>
<td>Evolution of virulence in a specific host-parasite system, the three-spined stickleback and the tapeworm <em>Schistocephalus solidus</em></td>
<td>Cluster 2 (p. 17)</td>
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<td><strong>Martin Kalbe</strong> MPI for Evolutionary Biology Plön</td>
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<td>13:20</td>
<td><strong>Manfred Milinski</strong> MPI for Evolutionary Biology Plön</td>
<td>Experimental test of negative frequency-dependent selection by pathogens maintaining MHC polymorphism in sticklebacks (<em>Gasterosteus aculeatus</em>)</td>
<td>Cluster 2  (p. 18)</td>
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<td><strong>Christophe Eizaguirre</strong> MPI for Evolutionary Biology Plön</td>
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<td><strong>Tobias Lenz</strong> MPI for Evolutionary Biology Plön</td>
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<td>13:30</td>
<td><strong>Theo C. M. Bakker</strong> University of Bonn</td>
<td>Coevolution in simple and complex host-parasite systems</td>
<td>Cluster 2  (p. 19)</td>
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<td>13:40</td>
<td><em>Sandwich Break</em></td>
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<td><strong>Hinrich Schulenburg</strong> University of Kiel</td>
<td><em>Introduction to Cluster 3:</em> „Experimental evolution and natural variation of Bacillus-invertebrate interactions“</td>
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<td><strong>Joachim Kurtz</strong> University of Münster</td>
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<td>14:40</td>
<td><strong>Hinrich Schulenburg</strong> University of Kiel</td>
<td>Experimental coevolution between <em>C. elegans</em> and <em>B. thuringiensis</em></td>
<td>Cluster 3  (p. 20)</td>
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<td>14:50</td>
<td><strong>Rebecca Schulte</strong> University of Osnabrück</td>
<td>Intra-host interactions of <em>Bacillus thuringiensis</em> strains and their impact on experimental coevolution with <em>Caenorhabditis elegans</em></td>
<td>Cluster 3  (p. 21)</td>
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<td>15:00</td>
<td><strong>Ralf J. Sommer</strong> MPI for Developmental Biology Tübingen</td>
<td>Coevolution of host - pathogen interactions: Genetic and genomic analysis of nematode immunity and bacterial virulence using a <em>Pristionchus - Bacillus</em> system</td>
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<td><strong>Robbie Rae</strong> MPI for Developmental Biology Tübingen</td>
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<td>15:10</td>
<td>Sylvia Cremer</td>
<td>Natural and experimental coevolution between the invasive garden ant and its parasites</td>
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<td>Jürgen Heinze</td>
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<td>15:20</td>
<td>Joachim Kurtz</td>
<td>Coevolution between <em>Tribolium castaneum</em> and <em>Bacillus thuringiensis</em>: On the evolutionary significance of genetic specificity and specific immunity.</td>
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<td>University of Münster</td>
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<td>15:30</td>
<td>Thomas Roeder</td>
<td>Molecular determinants of host-parasite coevolution - the host perspective in <em>C. elegans</em>/<em>T. castaneum/B. thuringiensis</em> interactions</td>
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<td>15:40</td>
<td>Hinrich Schulenburg</td>
<td>Genomics analysis platform for the <em>Bacillus</em>-invertebrate cluster</td>
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<td>Philip Rosenstiel</td>
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<td>15:50</td>
<td><strong>Coffee Break</strong></td>
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<td>16:10</td>
<td>Gisep Rauch</td>
<td>Experimental host-parasite coevolution in a changing environment</td>
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<td>16:20</td>
<td>Uwe John</td>
<td>Experimental evolution of a naturally evolved host-parasite system</td>
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<td>AWI Bremerhaven</td>
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<td>16:30</td>
<td>Andreas Vilcinskas</td>
<td>Reciprocal genetic diversification and adaptation of host proteinase inhibitors and parasite-associated proteinases during coevolution of insects and entomopathogenic fungi</td>
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<td>University of Gießen</td>
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<td>16:40</td>
<td>Heiko Vogel</td>
<td>Functional and evolutionary analysis of a multi-domain defensin-like protein during coevolution of insects and their pathogens</td>
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<td>MPI for Chemical Ecology Jena</td>
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<td>16:50</td>
<td>Kerstin Voigt</td>
<td>Coevolution between entomoparasitic fungi (Enthomophthoromycotina) and their insect hosts</td>
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<td>17:00</td>
<td>Robin F. A. Moritz</td>
<td>Molecular basis of genome interaction of the honeybee <em>Apis mellifera</em> with an evolutionary old and novel introduced <em>Nosema</em> species</td>
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<td>University of Halle-Wittenberg</td>
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17:30  **Michael G. Lattorff**  
University of Halle-Wittenberg  
Molecular basis of genotype by genotype interactions of the bumble bee *Bombus terrestris* and its trypanosomatid parasite *Chritidia bombi* (p. 34)

17:40  **Heike Feldhaar**  
University of Osnabrück  
**Till Eggers**  
University of Osnabrück  
The role of nesting choice in the coevolution of ant hosts and their natural pathogens under natural and experimental conditions (p. 35)

17:50  **Stephan Hutter**  
University of Munich  
**Wolfgang Stephan**  
University of Munich  
Recent selection on immunity genes in *Drosophila* (p. 36)

18:00  **Martin Zimmer**  
University of Kiel  
Bacterial midgut symbionts of terrestrial isopods: evolutionary recent parasites of an ancient mutualism? (p. 37)

18:10  **Justyna Wolinska**  
University of Munich  
Red Queen dynamics in *Daphnia*, the role of variable environment (p. 38)

18:20  **Thomas Wilke**  
University of Gießen  
Testing the Red Queen in the intermediate *schistosomiasis* host *Oncomelania hupensis robertsoni* in China (p. 39)
Tuesday 31st

08:30  **Ger van Zandbergen**  
University of Ulm  
**Michael Duszenko**  
University of Tübingen

*Introduction to Cluster 4:*
„Host-parasite coevolution of programmed cell death“

08:40  **Ger van Zandbergen**  
University of Ulm

*Leishmania* - phagocyte coevolution of PCD  
– *Cluster 4* (p. 41)

08:50  **Michael Duszenko**  
University of Tübingen

Programmed cell death in African trypanosomes  
– *Cluster 4* (p. 42)

09:00  **Volker Theo Heussler**  
BNI for Tropical Medicine  
Hamburg

Host cell signalling and programmed cell death in *Plasmodium* liver stage parasites  
– *Cluster 4* (p. 43)

09:10  **Carsten Lüder**  
University of Göttingen

Programmed cell death in *Toxoplasma gondii* and its host: Evolutionary adaptations to regulate the host-parasite interaction  
– *Cluster 4* (p. 44)

09:20  **Jonathan C. Howard**  
University of Cologne

Virulence factors and resistance genes in the ecological relationship between *Toxoplasma gondii* and *Mus musculus* (p. 45)

09:30  **Walter Däubener**  
University of Düsseldorf

Host-specific antiparasitic effector mechanisms active against *Toxoplasma gondii* and its evolutionary close relative *Neospora canium* (p. 46)

09:40  **Coffee Break**

10:10  **Michael Lanzer**  
University of Heidelberg  
**Marek Cyrklaff**  
MPI for Biochemistry Planegg

Impaired trafficking and transfer of virulence factors to the surface of *P. falciparum*-infected erythrocytes containing the hemoglobin polymorphisms HbS and HbC (p. 47)

10:20  **Kai Matuschewski**  
University Medical Center  
Heidelberg

Natural genetics in rodent malaria parasites - adaptation of wild rodent *Plasmodium* species to laboratory mice and mosquitoes (p. 48)
10:30  Simone Sommer  
IZW Berlin  
Host adaptations on the molecular and transcriptional level driven by a fast evolving pathogen (p. 49)

10:40  Ursula Siebert  
University of Kiel  
Ralph Tiedemann  
University of Potsdam  
Coevolution between two marine top predators (Harbour porpoise *Phocoena phocoena*, Harbour seal *Phoca vitulina*) and their parasitic lung nematodes (p. 50)

10:50  Erich Bornberg-Bauer  
University of Münster  
Joachim Kurtz  
University of Münster  
Thorsten Reusch  
Leibniz-Institute for Marine Sciences Kiel  
Bioinformatics platform for the Priority Programme "Host-Parasite Coevolution" and cross-species analysis of molecular signatures of host-parasite coevolution (p. 52)

11:00  Joachim Kurtz  
University of Münster  
Host-parasite coevolution: programme coordination and meta-analysis of host-parasite coevolution (p. 53)