



## 14<sup>th</sup> EUROPNEUMO

European Meeting on the Molecular Biology of the Pneumococcus  
at the University of Greifswald, Germany – June 11-14<sup>th</sup> 2019

### Venue

University of Greifswald, Greifswald, Germany  
Campus Loefflerstrasse  
Lecture Hall  
Loefflerstrasse/ Ernst-Lohmeyer-Platz 6

### Conference Website

[www.uni-greifswald.de/europneumo2019](http://www.uni-greifswald.de/europneumo2019)

Tuesday, 11 June 2019		
15:00 – 19:00		Registration is open
16:30 – 16:45	Sven Hammerschmidt, University of Greifswald, Germany	Welcome and Introduction
<b>Topic: Host-Microbe Interactions (A) Chairs: Simone Bergmann &amp; Sven Hammerschmidt</b>		
16:45 – 17:00	Karina Hentrich, Karolinska Institutet Stockholm, Sweden	Pneumococcal host adaptation to human sialic acid profiles mediates increased bacterial adhesion and immune evasion
17:00 – 17:15	David Carreno, University of Leicester, UK	Pneumococcal replication within splenic macrophages as the source of bacteraemia during invasive disease
17:15 – 17:30	Stephanie Begg, University of Melbourne/ University of Adelaide, Australia	Glutathione is essential for <i>Streptococcus pneumoniae</i> copper resistance at the host-pathogen interface
17:30 – 17:45	Christopher McDevitt, University of Melbourne, Australia	Dietary zinc and the control of <i>Streptococcus pneumoniae</i> infection
17:45 – 18:00	Justin Thornton, Mississippi State University, USA	Expression of Pneumococcal Surface Proteins in a Staphylococcal Expression System for Host Cell Receptor Identification by Far-Western Blot

18:00 – 18:15	Rebecca K. Shears, University of Liverpool, UK	Exposure to diesel exhaust particles increases susceptibility to pneumococcal disease
18:15 – 18:30	Laura Jacques, University of Liverpool, UK	Rapid autolysis and release of highly haemolytic pneumolysin promote <i>Streptococcus pneumoniae</i> serotype 1 tissue invasiveness
18:30 – 18:45	Coffee break	
<b>PL01:</b>		
18:45 – 19:45	<b>Jingren Zhang,</b> Tsinghua University, Beijing, China	Reversible site-specific recombinations in the genome of <i>Streptococcus pneumoniae</i>
<b>19:45</b>	<b>Welcome Reception</b>	

### Wednesday, 12 June 2019

<b>PL02:</b>		
09:00 – 09:30	<b>James Paton,</b> University of Adelaide, Australia	How pneumococci make career choices
<b>Topic: Virulence Chairs: Aras Kadioglu &amp; Birgitta Henriques-Normark</b>		
09:30 – 09:45	Vikrant Minhas, University of Adelaide, Australia	Sickly sweet - A single nucleotide polymorphism affecting utilisation of the sugar raffinose dictates pneumococcal disease progression
09:45 – 10:00	Emma Wall, University College London, UK	Over-expression of Elongation Factor Tu of <i>Streptococcus pneumoniae</i> in CSF is associated with non-survival from pneumococcal meningitis
10:00 – 10:15	Kimberley McLean, University of Adelaide, Adelaide, Australia	Autoinducer 2 and Galactose: How Quorum Sensing Dictates Sugar Metabolism in <i>Streptococcus pneumoniae</i>
10:15 – 10:30	Ulrike Binsker, New York University School of Medicine, USA	Immune exclusion by naturally-acquired secretory IgA to the pneumococcal type-1 pilus
10:30 – 11:00	Coffee break	
<b>Topic: Gene expression and Regulation Chairs: N. Luisa Hiller &amp; Leiv Sigve Håvarstein</b>		
11:00 – 11:15	Anita Stamsås Gro, Norwegian University of Life Sciences, As, Norway	Evidence for that the pneumococcal CozE-homolog CelP affects functionality of penicillin binding protein 1a
11:15 – 11:30	Suzanne Dawid, University of Michigan, Ann Arbor, MI USA	Contribution of C39 type transporters to blp and com activation and description of a new rgg/SHP regulon

11:30 – 11:45	Surya D. Aggarwal, Carnegie Mellon University, Pittsburgh, PA, USA	Cell Wall Modification Protein MurM Regulates the Stress Response Pathway in <i>Streptococcus pneumoniae</i>
11:45 – 12:00	Ed Swiatlo, Southeast Louisiana VA Medical Center, New Orleans, USA	Polyamine synthesis effects capsule expression by reduction of precursors in <i>Streptococcus pneumoniae</i> TIGR4
12:00 – 12:15	Lance Keller, University of Lausanne, Switzerland	Synthetic Gene Regulatory Networks in <i>Streptococcus pneumoniae</i> for Controlled Heterogeneous Gene Expression
12:15 – 12:30	Alan Basset, Boston Children's Hospital, Harvard Medical School, USA	Competence-induced modification of the bacterial chain length in pneumococci
12:30 – 13:30	Lunch	
<b>Poster Session 1 (even numbers)</b>		
13:30 – 15:30	Poster Session and Coffee	
15:45	Departure to the Ozeaneum Stralsund and Conference Dinner in Stralsund (Bus Shuttle)	
23:00	Return 1	
24:00	Return 2	

## Thursday, 13 June 2019

### PL03:

09:00 – 09:30	<b>David Dockrell,</b> University of Edinburgh, UK	Mitochondria as effectors of innate immune responses to pneumococci in the lung
<b>Topic: Host-Microbe Interactions (B) Chairs Marco R. Oggioni &amp; Claudia Trappetti</b>		
09:30 – 09:45	Carlos J. Orihuela, University of Alabama, Birmingham, USA	Deadly synergism: Influenza augments pneumolysin-mediated cell death through oxidative stress
09:45 – 10:00	Vicky Sender, Karolinska Institutet, Stockholm, Sweden	Pneumococcal adaptation and growth in the influenza modulated lower respiratory tract
10:00 – 10:15	Jacqueline Kimmey, UC San Diego, USA	Host cathelicidin alters innate immune sensing of bacterial signals
10:15 – 10:30	Anirban Banerjee, IIT Bombay, Mumbai, India	Ubiquitination of <i>Streptococcus pneumoniae</i> and its clearance through proteasomal pathway
10:30 – 11:00	Coffee break	

**Topic: Structural Biology, surface structures Chairs: Raquel Sá-Leão & Juan A. Hermoso**

11:00 – 11:15	Juan A. Hermoso, CSIC Madrid, Spain	Structural characterization of the catalytic mechanism of choline-binding protein LytB
11:15 – 11:30	Orietta Massidda, University of Trento, IT	Role of GpsB as a cell cycle regulator in <i>Streptococcus pneumoniae</i>
11:30 – 11:45	Stefan Ness, University of Applied Sciences Munich, Germany	High-resolution analytics of pneumococcal pili allow different phenotypical insights and identify a novel mechanism for RrgB-mediated host interaction
11:45 – 12:00	Carina Valente, ITQB NOVA, Oeiras, Portugal	Living on a surface: tools for the study of pneumococcal dual-strain biofilms
12:00 – 12:15	Leiv Sigve Håvarstein, Norwegian University of Life Sciences, Ås, Norway	Evidence that class A PBPs have an autonomous role in the construction of the pneumococcal cell wall
12:15 – 12:30	Martín Alcorlo, CSIC Madrid, Spain	Structure of the Large Extracellular Loop of FtsX and Its Interaction with the Essential Peptidoglycan Hydrolase PcsB in <i>Streptococcus pneumoniae</i>
12:30 – 13:30	Lunch	
<b>PL04:</b>		
13:30 – 14:00	<b>Christophe Grangeasse,</b> CNRS, Lyon, France	Coordination of chromosome segregation and capsule assembly during the cell division of <i>Streptococcus pneumoniae</i>
<b>Topic: Molecular Epidemiology Chairs: Mario Ramírez</b>		
14:00 – 14:15	Anne Wyllie, Yale School of Public Health, New Haven, Connecticut, USA	Over-Representation of Serotypes Causing Pneumococcal Disease in Adults
14:15 – 14:30	Andrea Gori, University College London, UK	Dynamics of metabolic, virulence and AMR gene profiles among colonising <i>S. pneumoniae</i> after PCV13 introduction in Blantyre, Malawi
14:30 – 14:45	Catarina Silva-Costa, University of Lisbon, Portugal	Serotypes 3, 8 and 10A Dominate among Pediatric Invasive Pneumococcal Infections in Portugal (2015-2018)
14:45 – 15:00	Sherin Pojar, Liverpool School of Tropical Medicine, Liverpool, UK	Bacterial chain length is a determinant of colonization efficacy in an experimental human pneumococcal challenge model
<b>Poster Session 2 (odd numbers)</b>		
15:00 – 17:00	Poster Session and Coffee	
<b>Topic: Vaccines Chairs: Cecile van Els &amp; Jeremy S. Brown</b>		

17:00 – 17:15	Shannon David, University of Adelaide, Australia	A novel co-vaccination strategy to induce serotype independent protection against pneumococcal infections
17:15 – 17:30	Lucille van Beek, Radboudumc, Nijmegen,NL	Identification of protective antigens by exploring the natural niche of <i>Streptococcus pneumoniae</i>
17:30 – 17:45	Giuseppe Ercoli, University College of London, UK	The influence of B cell depletion therapies on the susceptibility to <i>Streptococcus pneumoniae</i> infections
17:45 – 18:00	Franziska Voß, University of Greifswald, Germany	Lipidation of pneumococcal proteins DacB and PnrA confers intrinsic immunogenicity and modulates the type of immune response
18:00 – 18:15	Joseph Campo, Antigen Discovery, Inc, Irvine, CA, USA	Protein antibody markers of pneumococcal carriage in support of protein and whole cell vaccine trial design using panproteomic antibody screening
18:15 – 18:30	Martijn D.B. van de Garde, National Institute for Public Health and the Environment, NL	Shifts in antibody responses against pneumococcal proteins throughout life do not explain susceptibility to pneumococcus at old age
18:45	Dragon Boat Race	

## Friday, 14 June 2019

### PL05:

<b>08:30 – 09:00</b>	<b>N. Luisa Hiller</b> Pittsburg, USA	Living on the Edge: The Interface between Pneumococcus and the Human Host
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### Topic: Genetics & Genomics Chairs: Jan-Willem Veening & Angela Brueggemann

09:00 – 09:15	Reza Rezaei Javan, University of Oxford, UK	Genus-wide analyses of the genomic diversity and population structure of streptococcal prophages
09:15 – 09:30	Elisa Ramos-Sevillano University College London, UK	A satellite prophage is involved in pneumococcal pneumonia and sepsis in a murine infection model
09:30 – 09:45	Melissa J. Jansen van Rensburg, Imperial College London, UK	The PubMLST Pneumococcal Genome Library
09:45 – 10:00	Angharad Ellen Green, University of Liverpool, UK	Identification of niche-specific virulence factors via experimental evolution of <i>Streptococcus pneumoniae</i>

10:00 – 10:15	Alexandra Tikhomirova, University of Adelaide, Australia	Specific environmental and niche parameters facilitate <i>S. pneumoniae</i> genomic adaptation and determine its cell type
10:15 – 10:30	Claudia Hirschfeld, University of Greifswald, Germany	Proteomic investigation of the pneumococcal kinase and phosphatase couple StkP/PhpP
10:30 – 10:45	Melanie Hamon, Institute Pasteur, Paris, France	Epigenomic modifications induced by <i>Streptococcus pneumoniae</i>
10:45 – 11:15	Coffee break	
<b>PL06:</b>		
11:15 – 11:45	<b>Nathalie Campo,</b> Toulouse, France	Control of cell division during pneumococcal natural transformation
<b>Topic: Host-Microbe Interactions (C) Chairs: Franziska Voß &amp; Marien de Jonge</b>		
11:45 – 12:00	Michael Connor, Institute Pasteur, Paris, France	Pneumococcus serotype 6B fine tunes host inflammatory responses during colonization
12:00 – 12:15	Emma Wall, University College London, UK	<i>Streptococcus pneumoniae</i> prioritises genes involved in the avoidance of opsonophagocytotic killing in the CSF of adults with pneumococcal meningitis
12:15 – 12:30	Manfred Rohde, Helmholtz Centre for Infection Research, Braunschweig, Germany	Scanning mode: The future of electron microscopy in pneumococcal research
12:30 – 12:40	Sven Hammerschmidt, University of Greifswald, Germany	Farewell
12:30	Flying Lunch	

## Poster presentations

Number	Topic	Presenting Author	Title
1	Host-microbe interactions	Julia D. Boehme, Otto-von-Guericke University Magdeburg, Germany	Bacterial-strain dependency in secondary pneumococcal pneumonia in the post-influenza lung – a role for alveolar type II epithelial cells?
2	Gene expression and regulation	Hasan Yesilkaya, University of Leicester, UK	Mechanistic and Phenotypic Characterisation of Rgg/SHP Quorum Sensing System in <i>Streptococcus pneumoniae</i>
3	Structural biology, surface structures	Stefan Ness, University of Applied Sciences Munich, Germany	Covalent SpyCatcher/SnoopCatcher based labeling of genetically tagged pneumococcal pilus 1/2 backbone subunits as novel tool to study pilus phenotypes
4	Host-microbe interactions	Ed Swiatlo, Southeast Louisiana VA Medical Center, New Orleans, USA	Polyamine synthesis is required for <i>Streptococcus pneumoniae</i> TIGR4 responses to oxidative, nitrosative, and acid stress
5	Genetics and genomics	Santiago Cardona, University of Antioquia, Medellín, Colombia	Detection of Pneumococcal Typical Autolysin Gene Alleles from Nonsterile Site Samples: Improving the <i>lytA</i> -based <i>S. pneumoniae</i> Identification in Adults
6	Molecular epidemiology	María Alejandra Palacio, University of Antioquia, Medellín, Colombia	Carriage, Serotype Distribution, and Antimicrobial Resistance of <i>S. pneumoniae</i> among Children from EPS-SURA: A Health Insurance Company in Colombia
7	Structural biology, surface structures	Mohammed Abdullah, University of Greifswald, Germany	PnrA is the substrate-binding protein of a pneumococcal nucleoside transporter
8	Structural biology, surface structures	Franziska Waldow, Leibniz Lung Center, Borstel, Germany	Structural analysis of the lipoteichoic acids isolated from two choline-independent <i>Streptococcus pneumoniae</i> strains
9	Host-microbe interactions	Thomas Sura, University of Greifswald, Germany	Ubiquitin signaling in bacterial infection
10	Molecular epidemiology	Richael Odarkor Mills, University of Greifswald, Germany	Increase of serotype 23B in pneumococcal carriage among children vaccinated with PCV-13 in Cape Coast, Ghana
11	Host-microbe interactions	Pierre-Alexander Mücke, University of Greifswald, Germany	Proteomic adaptation of <i>Streptococcus pneumoniae</i> to the natural human antimicrobial peptide LL-37

12	Genetics and genomics	Ruairidh Wilson, University of Sheffield, UK	Investigating the relationship between peptidoglycan modifications and cell wall biosynthesis in <i>Streptococcus pneumoniae</i>
13	Virulence	Larry S. McDaniel, University of Mississippi Medical Center, Jackson, MS, USA	Transformation of Nonencapsulated <i>Streptococcus pneumoniae</i> During Systemic Infection
14	Gene expression and regulation	Niamatullah Kakar, University of Greifswald, Germany	ArcT function as a carboxypeptidase in <i>Streptococcus pneumoniae</i>
15	Host-microbe interactions	Jolien Seinen, University of Greifswald, Germany	Variable antimicrobial activity in sputum from Intensive Care Unit (ICU) patients
16	Antibacterials action	Laura Thompson, University of Liverpool, UK	A novel <i>Streptococcus pneumoniae</i> derived peptide enhances neutrophil phagocytic ability in a paediatric patient cohort with sepsis
17	Host-microbe interactions	Elizabeth Chan, University College London, UK	Human respiratory tract epithelial cells upregulate the interferon stimulated gene CXCL10 in response to pneumococcal microinvasion
18	Virulence	Lavanya Mane, The Francis Crick Institute, London, UK	Metabolomic analyses of <i>Streptococcus pneumoniae</i> reveal novel metabolic routes that may facilitate niche adaptation
19	Gene expression and regulation	Stephanie Hirschmann, University of Greifswald, Germany	Impact of the two-component regulatory system 09 on the pathophysiology of <i>Streptococcus pneumoniae</i>
20	Genetics and genomics	Shreyas Joshi, Yale School of Public Health, New Haven, CT, USA	Genetic and capsular factors associated with growth characteristics and response to environmental variation
21	Host-microbe interactions	Sigrun Thorsdottir, Karolinska Institutet & Karolinska University Hospital, Stockholm, Sweden	The interplay between pneumococci and microglia during bacterial meningitis
22	Genetics and genomics	Donald A. Morrison, University of Illinois, Chicago, IL, USA	Bacterial Genetic Transformation by Cell-Cell Interactions in Cell Pairs Isolated in Aqueous Droplets
23	Gene expression and regulation	Haley Echlin, St. Jude Children's Research Hospital, Memphis, TN, USA	Conserved and Disparate Metabolic Regulation by SpxR Amongst Diverse Pneumococcal strains

24	Vaccines	Stephanie Perniciaro, University Hospital RWTH Aachen, Germany	Which Serotypes Will Punch Back After Third-Generation Pneumococcal Conjugate Vaccination in Germany?
25	Host-microbe interactions	Anuj Pathak, Karolinska Institutet & Karolinska University Hospital, Stockholm, Sweden	Growth and defence strategies affect pneumococcal disease pattern: septicæmia versus pneumonia
26	Host-microbe interactions	Fabian Uddén, Lund University, Malmö, Sweden	An impaired opsonic antibody response is frequently associated with invasive pneumococcal disease
27	Host-microbe interactions	Ryan Hames, University of Leicester, UK	A novel ex vivo organotypic slice culture model allows the study of intracellular <i>S. pneumoniae</i> replication
28	Antibacterials action	Erin B. Brazel, University of Adelaide, Australia	Overcoming antimicrobial resistance – exploiting zinc intoxication to improve antibiotic efficacy
29	Virulence	Lucy Hathaway, University of Bern, Switzerland	Pneumococcal growth and capsule size in human cerebrospinal fluid depends on serotype
30	Host-microbe interactions	Gabriella Szylar, University College London, UK	Regulatory T cells can modulate macrophage inflammatory responses to <i>Streptococcus pneumoniae</i> <i>in vitro</i> and are present in normal human lung
31	Antibacterials action	Paddy Gibson, University of Lausanne, Switzerland	A role for the two-component regulatory system CiaRH in amoxicillin heteroresistance in <i>Streptococcus pneumoniae</i>
32	Genetics and genomics	Yongkui Chen, University of Leicester, UK	Differential gene expression due to promoter methylation in <i>Streptococcus pneumoniae</i>
33	Host-microbe interactions	Zydrune Jasiunaite, GSK Siena, Italy	Phagocytosis of Pathogens by CD206 and CD169 Positive Alveolar Macrophages
34	Host-microbe interactions	Carlos J. Orihuela, University of Alabama, Birmingham, USA	Capsule promotes intracellular survival during <i>Streptococcus pneumoniae</i> vascular endothelium crossing
35	Host-microbe interactions	Sebastian Skorka, University of Greifswald, Germany	Pneumococcal and influenza A viral co-infections in <i>in vivo</i> and <i>in vitro</i> model systems
36	Vaccines	Zoe Laan, University of Adelaide, Australia	Gamma-irradiated pneumococci are replication incompetent but retain metabolic activities

37	Host-microbe interactions	Carlos J. Orihuela, University of Alabama, Birmingham, USA	Necroptosis inhibition prevents long-term cardiac damage following invasive pneumococcal disease
38	Host-microbe interactions	Megan De Ste Croix, University of Leicester, UK	Presence of pneumococci in alveolar macrophages in the absence of disease - a potential pneumococcal reservoir
39	Host-microbe interactions	Simone Bergmann, Technische Universität Braunschweig, Germany	Functional Perspectives of the Interaction between <i>Streptococcus pneumoniae</i> and Von Willebrand Factor
40	Genetics and genomics	Juan Carlos Sanz, CIBERESP, Madrid, Spain	Direct identification of <i>Streptococcus pneumoniae</i> serotypes in cultures negative samples by a PCR-reverse-hybridization technique
41	Vaccines	Eliane Namie Miyaji, Instituto Butantan, Sao Paulo, Brazil	Efficacy of a protein vaccine and a conjugate vaccine against co-colonization with vaccine-type and non-vaccine type pneumococci in mice
42	Genetics and genomics	Priyanka Nannapaneni, Karolinska Institutet, Stockholm, Sweden	Comparative Genomics of the Emerging Pathogen <i>S. pseudopneumoniae</i>
43	Molecular epidemiology	Anne Wyllie, Yale School of Public Health, New Haven, Connecticut, USA	High levels of pneumococcal detection in saliva from older adults in the USA
44	Molecular epidemiology	Ekaterina Brzhozovskaya, Scientific Centre of Children's Health, Moscow, Russia	Serotypes and genotypes of non-PCV13, multiple drug-resistant pediatric nasopharyngeal <i>Streptococcus pneumoniae</i> isolated in Russia, 2010 – 2017
45	Molecular epidemiology	Hans-Christian Slotved, Statens Serum Institut, Copenhagen, Denmark	Molecular characterization of the <i>Streptococcus pneumoniae</i> serotype 8 in Denmark
46	Molecular epidemiology	Catarina Silva-Costa, Universidade de Lisboa, Portugal	3 years after PCV13 introduction in the national immunization plan serotype 3 is still the main cause of pediatric complicated pneumonia in Portugal
47	Genetics and genomics	Sofia Félix, Universidade NOVA de Lisboa, Portugal	Within-host evolution of <i>Streptococcus pneumoniae</i> during the transition from carriage to disease
48	Genetics and genomics	Melissa J. Jansen van Rensburg, Imperial College London, UK	From epidemiology to evolution: development of a pneumococcal core-genome multilocus sequence typing (cgMLST) scheme

49	Genetics and genomics	Madeleine Butler, Imperial College London, UK	Genomic studies in an Icelandic dataset reveal complexity in bacteriocin prevalence and distribution
50	Host-microbe interactions	Dina Raafat, University Medicine Greifswald, Germany	Infection array - Developing an immunological tool to detect antibody signatures of major pneumonia-related pathogens
51	Host-microbe interactions	Willem Miellet, National Institute of Public Health and the Environment, Bilthoven, The Netherlands	Effect of Influenza-Like-Illness on <i>Streptococcus pneumoniae</i> Carriage in Community-dwelling Older Adults
52	Host-microbe interactions	Marco R. Oggioni, University of Leicester, UK	The clinical trial "Tissue Models for Invasive Disease" an opportunity to step up research on human invasive pneumococcal disease
53	Host-microbe interactions	Joseph J. Wanford, University of Leicester, UK	Pneumococci are efficiently killed by and stochastically replication competent within human splenic macrophages in <i>ex vivo</i> perfused organs
54	Structural biology, surface structures	Du Shanshan, Leibniz Institute for Natural Product Research and Infection Biology, Jena, Germany	<i>Streptococcus pneumoniae</i> surface protein PspC act as guard against host complement system
55	Structural biology, surface structures	Yingqi Hou, University College London, UK	Detailed evaluation of <i>Streptococcus pneumoniae</i> adhesion to host surfaces using atomic force microscopy
56	Gene expression and regulation	Patrick Rosendahl Andreassen, University of Southern Denmark, Odense, Denmark	A pneumococcal two-component system in touch with eukaryotic glycan structures
57	Vaccines	Giuseppe Ercoli, University College of London, UK	Development of an innovative vaccine against pneumococcus coupling a new protein array screening with PGCT biological conjugation
58	Host-microbe interactions	Anjali Anil, Indian Institute of Technology Bombay, Mumbai, India	Dual role of pyruvate oxidase in pneumococcal intracellular life
59	Host-microbe interactions	Jason Rosch, St Jude Children's Research Hospital Memphis, TN, USA	Pneumococcal Mediated Synergy of Influenza Transmission

60	Structural biology, surface structures	Katarzyna Wiaroslawa Piechowiak, Norwegian University of Life Sciences, Ås, Norway	Evidence that class A PBPs have an autonomous role in the construction of the pneumococcal cell wall
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