

Prof. Dr. Katharina Anna Christina Schaufler, PhD

Christian-Albrecht University Kiel & University Medical Center Schleswig-Holstein and
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19.02.1986 in Nürtingen

POSITIONS

Since 05/2021	Professor for Medical Microbiology, Institute of Infection Medicine, Christian Albrecht University Kiel & University Medical Center Schleswig-Holstein
Since 11/2020	Junior Research Group Leader “DISPATch_MRGN”, Institute of Pharmacy, University of Greifswald
01/2019 – 10/2020	Junior Professor for Pharmaceutical Microbiology, Institute of Pharmacy, University of Greifswald
09/2018 – 12/2018	Postdoctoral fellow, Pharmaceutical Biology, Institute of Pharmacy, University of Greifswald
02/2017 – 07/2018	Postdoctoral fellow, Massachusetts Eye and Ear Infirmary, Harvard Medical School, Boston, USA Supervisor: Michael S. Gilmore, MD PhD
08/2016 – 09/2016	Intern (scientific management), Young Academy Berlin, Germany
05/2012 – 07/2016	Graduate student and research assistant, Centre for Infection Medicine, Institute of Microbiology and Epizootics, Freie Universität Berlin, Germany Supervisor: Lothar H. Wieler, DVM PhD

DEGREES & EDUCATION

11/2019	Veterinary specialist for Microbiology
12/2016	PhD (<i>summa cum laude</i>) Supervisor: Lothar H. Wieler, DVM PhD Title: ‘Functional plasmid analysis of ESBL-producing <i>Escherichia coli</i> of pandemic sequence types ST131 and ST648’
06/2016	Dr. med. vet. (<i>summa cum laude</i>) Supervisor: Lothar H. Wieler, DVM PhD Title: ‘Molecular analysis of ESBL-producing <i>Escherichia coli</i> from different habitats discloses insights into phylogeny, clonal relationships and transmission scenarios’
03/2012	Veterinary State Examination, License to Practice Veterinary Medicine
09/2008 – 06/2009	Veterinary medicine studies Universidad Complutense de Madrid, Spain
10/2006 – 03/2012	Veterinary medicine studies Justus-Liebig-Universität Giessen, Germany

HONORS & AWARDS

02/2021	Paper of the Month (last author) awarded by the German Association for Hygiene and Microbiology (DGHM)
10/2020	Young Researcher Award awarded by the German Society of Veterinary Medicine (DVG)
01/2020 – 12/2021	American Society for Microbiology (ASM) young ambassador to Germany
04/2019 – 01/2021	Member of the Mentoring Program offered by the University of Greifswald
02/2017 – 12/2018	Feodor Lynen-Research & Return Fellowship awarded by the Alexander von Humboldt-Foundation (AvH)
05/2013 – 12/2016	Member of the Graduate Program 'Biomedical Sciences' offered by the Free University Berlin
09/2016	Dissertation Prize awarded by the DGHM
08/2014 – 03/2016	Member of the Berlin-Hyderabad Research Training School on Infectious Diseases and Genetic-Functional Epidemiology
12/2012 – 06/2015	Doctoral Fellowship awarded by the Sonnenfeld-Foundation & Dahlem Research School
07/2015	Travel Grant awarded by the DAAD (German Academic Exchange Service)
05/2014	Poster Prize DVG
10/2013	Conference Grant awarded by the program committee of the European Society for Microbiology and Infectious Diseases (ESCMID)
03/2013	Conference Grant awarded by the Academy for Animal Health (Aft)

SELECTED THIRD PARTY-FUNDED PROJECTS

- Federal Ministry of Education and Research (2021): Antibiotics and resistant bacteria in the Baltic Sea
- Helmholtz Center for Infection Research & University of Greifswald: One Health Seed Grants (2020): Decolonization of antibiotic-resistant bacteria from the gut environment of animals using combined pre- and probiotic interventions
- Helmholtz Center for Infection Research & University of Greifswald: One Health Seed Grants (2020): Sormas goes One Health: Water-based outbreak prediction in peri-urban Africa
- Helmholtz Center for Infection Research & University of Greifswald: One Health Seed Grants (2020): Subclinical bovine mastitis: Significance of the teat canal microbiome and its interrelation with constituents of the human microbiota
- Federal Ministry of Education and Research (2020): Junior Research Group: Disarming pathogens as a different strategy to fight antimicrobial-resistant Gram-negatives
- Federal Ministry of Education and Research (2020): Holistic system for the rapid establishment of an antibiogram for nosocomial infections

PUBLICATIONS

- Weber LP, Dreyer S, Heppelmann M, **Schaufler K**, Homeier-Bachmann T, Bachmann L. Prevalence and Risk Factors for ESBL/AmpC-*E. coli* in Pre-Weaned Dairy Calves on Dairy Farms in Germany. *Microorganisms*. 2021. 9(10):2135.
- Adnan F, Jalil A, Ahmed T, Rahman A, Dawood N, Haider G, Siddiqui MF, Rostock L, Guenther S, **Schaufler K**. TRAP transporter TakP: a key player in the resistance against selenite-induced oxidative stress in *Rhodobacter sphaeroides*. *Microbiol Res*. 2021. 252:126828.
- Eger E, Heiden SE, Becker K, Rau A, Geisenhainer K, Idelevich EA, **Schaufler K**. Hypervirulent *Klebsiella pneumoniae* Sequence Type 420 with a Chromosomally Inserted Virulence Plasmid. *Int J Mol Sci*. 2021. 22(17):9196.
- Buchmann D, Schultze N, Borchardt J, Böttcher I, **Schaufler K**, Guenther S. Synergistic antimicrobial activities of epigallocatechin gallate, myricetin, daidzein, gallic acid, epicatechin, 3-hydroxy-6-methoxyflavone and genistein combined with antibiotics against ESKAPE pathogens. *J Appl Microbiol*. 2021. [Epub ahead of print].
- Heiden SE, Sydow K, Schaefer S, Klempien I, Balau V, Bauer P, Hübner N-O, **Schaufler K**. Nearly Identical Plasmids Encoding VIM-1 and Mercury Resistance in Enterobacteriaceae from North-Eastern Germany. *Microorganisms*. 2021. 9(7):1345.
- Seeger J, Guenther S, **Schaufler K**, Heiden SE, Michelet R, Kloft C. Novel Pharmacokinetic/Pharmacodynamic Parameters Quantify the Exposure–Effect Relationship of Levofloxacin against Fluoroquinolone-Resistant *Escherichia coli*. *Antibiotics*. 2021. 10(6):615.
- Eger E, Heiden SE, Korolew K, Bayingana C, Ndoli JM, Sendegeya A, Gahutu JB, Kurz MSE, Mockenhaupt FP, Müller J, Simm S and **Schaufler K**. Circulation of Extended-Spectrum Beta-Lactamase-Producing *Escherichia coli* of Pandemic Sequence Types 131, 648, and 410 Among Hospitalized Patients, Caregivers, and the Community in Rwanda. *Front. Microbiol*. 2021. 12:662575.
- Homeier-Bachmann T, Heiden SE, Lübcke PK, Bachmann L, Bohnert JA, Zimmermann D, **Schaufler K**. Antibiotic-Resistant *Enterobacteriaceae* in Wastewater of Abattoirs. *Antibiotics*. 2021. 10(5):568.
- Schulze C, Stamer LLM, Huss SK, **Schaufler K**, Guenther S, Schultze N. Establishment of a quantification method for β -glucans and their immune activity potential for quality control of β -glucan containing products. *Carbohydr Res*. 2021. 504:108327 [Epub ahead of print].
- Hornschuh M, Zwicker P, Kramer A, **Schaufler K**, Heiden SE, Bohnert JA, Becker K, Hübner NO. Extensively drug-resistant *Klebsiella pneumoniae* ST307 outbreak strain from north-eastern Germany does not show increased tolerance to quaternary ammonium compounds and chlorhexidine. *J Hosp Infect*. 2021. 113:52-58.
- Khan MM, Kolenda R, Schierack P, Weinreich J, Rödiger S, Schierack J, Stubbe M, Lkhagvasuren D, Guenther S, **Schaufler K**. Investigation of Commensal *Escherichia coli* Populations of Cormorant Hatchlings in the Absence of Anthropogenic Impacts in Remote Areas of West Mongolia. *Microorganisms*. 2021. 9(2):372.
- Heiden SE, Hübner NO, Bohnert JA, Heidecke CD, Kramer A, Balau V, Gierer W, Schaefer S, Eckmanns T, Gatermann S, Eger E, Guenther S, Becker K, **Schaufler K**. A *Klebsiella pneumoniae* ST307 outbreak clone from Germany demonstrates features of extensive drug resistance, hypermucoviscosity, and enhanced iron acquisition. *Genome Med*. 2020. 12(1):113.

- Esubalew ST, Tadesse S, Shibeshi AB, Engidawork E, **Schaufler K**, Guenther S, Asres K. Screening of Twenty-one Ethiopian Medicinal Plants for their Antiproliferative Activity against Human Acute Myeloid Leukemia (MV4-11) Cell Line. *Ethiopian Pharmaceutical Journal*. 2019. 35:143-148.
- Schierack P, Heiden SE, Khan MM, Nikolaus L, Kolenda R, Stubbe M, Lkhagvasuren D, Rödiger S, Guenther S, **Schaufler K**. Genomic and Phenotypic Analysis of an ESBL-Producing *E. coli* ST1159 Clonal Lineage From Wild Birds in Mongolia. *Front Microbiol*. 2020. 11:1699.
- Barth SA, Weber M, **Schaufler K**, Berens C, Geue L, Menge C. Metabolic Traits of Bovine Shiga Toxin-Producing *Escherichia coli* (STEC) Strains with Different Colonization Properties. *Toxins (Basel)*. 2020. 12(6):E414.
- Prehn F, Timmermann E, Kettlitz M, **Schaufler K**, Guenther S, Hahn V. Inactivation of airborne bacteria by plasma treatment and ionic wind for indoor air cleaning. *Plasma Process Polym*. 2020. e2000027.
- Heiden SE, Kurz MSE, Bohnert J, Bayingana C, Ndoli JM, Sendegeya A, Gahutu JB, Eger E, Mockenhaupt FP, **Schaufler K**. Flies from a tertiary hospital in Rwanda carry multidrug-resistant Gram-negative pathogens including extended-spectrum beta-lactamase-producing *E. coli* sequence type 131. *Antimicrob Resist Infect Control*. 2020. 9(1):34.
- Haller S, Kramer R, Becker K, Bohnert JA, Eckmanns T, Hans JB, Hecht J, Heidecke CD, Hübner NO, Kramer A, Klaper K, Littmann M, Marlinghaus L, Neumann B, Pfeifer Y, Pfennigwerth N, Rogge S, **Schaufler K**, Thürmer A, Werner G, Gatermann S. Extensively drug-resistant *Klebsiella pneumoniae* ST307 outbreak, north-eastern Germany, June to October 2019. *Euro Surveill*. 2019. 24(50):1900734.
- **Schaufler K**, Semmler T, Wieler LH, Trott DJ, Pitout J, Peirano G, Bonnedahl J, Dolejska M, Literak I, Fuchs S, Ahmed N, Grobbel M, Torres C, McNally A, Pickard D, Ewers C, Croucher NJ, Corander J, Guenther S. Genomic and functional analysis of emerging virulent and multi-drug resistant *E. coli* lineage ST648. *Antimicrob Agents Chemother*. 2019. 63(6):e00243-19.
- Ranjan A, Scholz J, Semmler T, Wieler LH, Ewers C, Müller S, Pickard DJ, Schierack P, Tedin K, Ahmed N, **Schaufler K**, Guenther S. ESBL-plasmid carriage in *E. coli* enhances in vitro bacterial competition fitness and serum resistance in some strains of pandemic sequence types without overall fitness cost. *Gut Pathog*. 2018. 10:24.
- **Schaufler K**, Nowak K, Dux A, Semmler T, Villa L, Kourouma L, Bangoura K, Wieler LH, Leendertz FH, Guenther S. Clinically Relevant ESBL-Producing *K. pneumoniae* ST307 and *E. coli* ST38 in an Urban West African Rat Population. *Front Microbiol*. 2018. 9:150.
- Lebreton F, Valentino MD, **Schaufler K**, Earl AM, Cattoir V, Gilmore MS. Transferable vancomycin resistance in clade B commensal-type *Enterococcus faecium*. *J Antimicrob Chemother*. 2018. 73(6):1479-1486.
- Mohsin M, Raza S, **Schaufler K**, Roschanski N, Sarwar F, Semmler T, Schierack P, Guenther S. High Prevalence of CTX-M-15-Type ESBL-Producing *E. coli* from Migratory Avian Species in Pakistan. *Front Microbiol*. 2017. 8:2476.
- Guenther S, Semmler T, Stubbe A, Stubbe M, Wieler LH, **Schaufler K**. Chromosomally encoded ESBL genes in *Escherichia coli* ST38 from Mongolian wild birds. *J Antimicrob Chemother*. 2017. 72(5):1310-1313.
- Shubin M, **Schaufler K**, Tedin K, Vehkala M, Corander J. Identifying Multiple Potential Metabolic Cycles in Time-Series from Biolog Experiments. *PLoS One*. 2016. 11(9):e0162276.
- McNally A, Oren Y, Kelly D, Pascoe B, Dunn S, Sreecharan T, Vehkala M, Välimäki N, Prentice MB, Ashour A, Avram O, Pupko T, Dobrindt U, Literak I, Guenther S, **Schaufler K**, Wieler LH, Zhiyong Z, Sheppard SK, McInerney JO, Corander J. Combined Analysis of

Variation in Core, Accessory and Regulatory Genome Regions Provides a Super-Resolution View into the Evolution of Bacterial Populations. *PLoS Genet.* 2016. 12(9):e1006280.

- Mohsin M, Raza S, Roschanski N, **Schaufler K**, Guenther S. First description of plasmid-mediated colistin-resistant extended-spectrum β -lactamase-producing *Escherichia coli* in a wild migratory bird from Asia. *Int J Antimicrob Agents.* 2016. 48(4):463-4.
- **Schaufler K**, Semmler T, Pickard DJ, de Toro M, de la Cruz F, Wieler LH, Ewers C, Guenther S. Carriage of Extended-Spectrum Beta-Lactamase-Plasmids Does Not Reduce Fitness but Enhances Virulence in Some Strains of Pandemic *E. coli* Lineages. *Front Microbiol.* 2016. 7:336.
- Barreto Miranda I, Ignatius R, Pfüller R, Friedrich-Jänicke B, Steiner F, Paland M, Dieckmann S, **Schaufler K**, Wieler LH, Guenther S, Mockenhaupt FP. High carriage rate of ESBL-producing Enterobacteriaceae at presentation and follow-up among travellers with gastrointestinal complaints returning from India and Southeast Asia. *J Travel Med.* 2016. 23(2):tav024.
- **Schaufler K**, Semmler T, Wieler LH, Wöhrmann M, Baddam R, Ahmed N, Müller K, Kola A, Fruth A, Ewers C, Guenther S. Clonal spread and interspecies transmission of clinically relevant ESBL-producing *Escherichia coli* of ST410—another successful pandemic clone? *FEMS Microbiol Ecol.* 2016. 92(1).
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- **Schaufler K**, Bethe A, Lübke-Becker A, Ewers C, Kohn B, Wieler LH, Guenther S. Putative connection between zoonotic multiresistant extended-spectrum beta-lactamase (ESBL)-producing *Escherichia coli* in dog feces from a veterinary campus and clinical isolates from dogs. *Infect Ecol Epidemiol.* 2015. 5:25334.
- Ewers C, Bethe A, Stamm I, Grobbel M, Kopp PA, Guerra B, Stubbe M, Doi Y, Zong Z, Kola A, **Schaufler K**, Semmler T, Fruth A, Wieler LH, Guenther S. CTX-M-15-D-ST648 *Escherichia coli* from companion animals and horses: another pandemic clone combining multiresistance and extraintestinal virulence? *J Antimicrob Chemother.* 2014. 69(5):1224-30.
- **Schaufler K**, Wieler LH, Semmler T, Ewers C, Guenther S. ESBL-plasmids carrying toxin-antitoxin systems can be "cured" of wild-type *Escherichia coli* using a heat technique. *Gut Pathog.* 2013. 5(1):34.
- Guenther S, Wuttke J, Bethe A, Vojtech J, **Schaufler K**, Semmler T, Ulrich RG, Wieler LH, Ewers C. Is fecal carriage of extended-spectrum- β -lactamase-producing *Escherichia coli* in urban rats a risk for public health? *Antimicrob Agents Chemother.* 2013. 57(5):2424-5.