

## Stephan Schmitz-Esser

Associate Professor, Department of Animal Science, Iowa State University  
3222 NSRIC, 1029 North University Boulevard, Ames, IA, 50011, USA  
Email: [sse@iastate.edu](mailto:sse@iastate.edu) Office phone: 515-294-2739

### EMPLOYMENT

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- Since 12-2015 **Associate Professor**  
Department of Animal Science, Iowa State University, Ames, IA  
70% Research, 30% Teaching
- 2014 – 2015 **Group leader**  
Institute for Milk Hygiene, Milk Technology and Food Science, University of Veterinary  
Medicine Vienna, Austria
- 2010 – 2014 **Postdoctoral Associate, main focus:**  
Microbiome characterizations of farm animals; Ecology of food-borne pathogens:  
Persistence of *Listeria monocytogenes* in food production environments; host cell  
interaction mechanisms of *Amoebophilus asiaticus* and of *Cardinium hertigii*.  
Institute for Milk Hygiene, Milk Technology and Food Science, University of Veterinary  
Medicine Vienna
- 2004- 2010 **Postdoctoral Associate, main focus:**  
Nucleotide transport proteins in intracellular bacteria, genome sequencing and  
analyses of *Amoebophilus asiaticus* and *Cardinium hertigii*.  
Division of Microbial Ecology, University of Vienna

### EDUCATION

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- 2001-2004 Division of Microbial Ecology, University of Vienna (Ecology): PhD, 2004  
*Title: "Molecular interaction between a chlamydia-related endosymbiont and its  
Acanthamoeba host"*
- 1996-2001 Technische Universität München (Germany) Biology, Diploma, 2001.  
*Main subject: Microbiology*

### AWARDS

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- 2018 Elected member of Gamma Sigma Delta (The Honor Society of Agriculture)
- 2014 Hygiene-Prize of the Austrian Society for Hygiene, Microbiology and Preventive  
Medicine (ÖGHMP).  
*This prize is awarded yearly to one scientist in Austria for the best publication in the  
fields of Environmental, Water, Hospital, Veterinary or Food Hygiene. (Awarded for:  
Mueller et al., 2013 PloS One: "Tn6188 - a novel transposon in Listeria  
monocytogenes responsible for tolerance to benzalkonium chloride")*

### PUBLICATIONS IN PEER-REVIEWED JOURNALS

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Total number of papers in peer-reviewed journals: 73  
Total number of citations: 3156 (based on Google Scholar), average citations per paper: 30  
h-index: 28; average journal impact factor of publications: 5.2

*An asterisk (\*) indicates trainees from my program since joining ISU in 2015. A pound sign (#) next to  
my name indicates that I served as the corresponding author.*

1. Koester LR\*, Poole DH, Serão NVL, **Schmitz-Esser S#**. 2020. Beef cattle that respond differently to fescue toxicosis have distinct gastrointestinal tract microbiota. ***PLoS One***. 15(7):e0229192. (Approximate percentage contribution ~25%).  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript. Author LRK is a trainee in SSE's program.*
2. Anast JM\*, **Schmitz-Esser S#**. 2020. The transcriptome of *Listeria monocytogenes* during co-cultivation with cheese rind bacteria suggests adaptation by induction of ethanolamine and 1,2-propanediol catabolism pathway genes. ***PLoS One***. 15(7):e0233945. (Approximate percentage contribution ~40%).  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments. Author JMA is a trainee in SSE's program.*
3. Fries-Craft K, Anast JM\*, **Schmitz-Esser S**, Bobeck EA. 2020. Host immunity and the colon microbiota of mice infected with *Citrobacter rodentium* are beneficially modulated by lipid-soluble extract from late-cutting alfalfa in the early stages of infection. ***PLoS One***. 15(7):e0236106. (Approximate percentage contribution ~15%).  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript. Co-author JMA is a trainee in SSE's program.*
4. Wickramasinghe HKJP, Anast JM\*, **Schmitz-Esser S**, Serão NVL, Appuhamy JADRN. 2020. Beginning to offer drinking water at birth increases the species richness and the abundance of *Faecalibacterium* and *Bifidobacterium* in the gut of preweaned dairy calves. ***J Dairy Sci***. 103(5):4262-4274. (Approximate percentage contribution ~15%).  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript. Co-author JMA is a trainee in SSE's program.*
5. Sanglard LP, **Schmitz-Esser S**, Gray KA, Linhares DCL, Yeoman CJ, Dekkers JCM, Niederwerder MC, Serão NVL. 2020. Vaginal microbiota diverges in sows with low and high reproductive performance after porcine reproductive and respiratory syndrome vaccination. ***Sci Rep***. 10(1):3046. (Approximate percentage contribution ~15%).  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
6. Cortes BW\*, Naditz AL\*, Anast JM\*, **Schmitz-Esser S#**. 2020. Transcriptome sequencing of *Listeria monocytogenes* reveals major gene expression changes in response to lactic acid stress exposure but a less pronounced response to oxidative stress. ***Front Microbiol***. 10:3110. (Approximate percentage contribution ~25%).  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments. Authors BWC, ALN, JMA are trainees in SSE's program.*
7. Sanglard LP, **Schmitz-Esser S**, Gray KA, Linhares DCL, Yeoman CJ, Dekkers JCM, Niederwerder MC, Serão NVL. 2020. Investigating the relationship between vaginal microbiota and host genetics and their impact on immune response and farrowing traits in commercial gilts. ***J Anim Breed Genet***. 137 (1), 84-102. (Approximate percentage contribution ~15%).  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
8. Stouthamer CM, Kelly SE, Mann E, **Schmitz-Esser S**, Hunter MS. 2019. Development of a Multi-Locus Sequence Typing system helps reveal the evolution of *Cardinium hertigii*, a reproductive manipulator symbiont of insects. ***BMC Microbiol***. 19, 266. (Approximate percentage contribution ~10%).  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
9. Klein-Jöbstl D, Quijada NM, Dzieciol M, Feldbacher B, Wagner M, Drillich M, **Schmitz-Esser S**, Mann E. 2019. Microbiota of newborn calves and their mothers reveals possible transfer

- routes for newborn calves' gastrointestinal microbiota. *PLoS One*. 14(8):e0220554. (Approximate percentage contribution ~10%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
10. Zwirzitz B, Pinior B, Metzler-Zebeli B, Handler M, Gense K, Knecht C, Ladinig A, Dzieciol M, Wetzels SU, Wagner M, **Schmitz-Esser S**, Mann E. 2019. Microbiota of the gut-lymph node axis: Depletion of mucosa-associated Segmented Filamentous Bacteria and enrichment of *Methanobrevibacter* by Colistin Sulfate and Linco-Spectin in pigs. *Front Microbiol*. 10:599. (Approximate percentage contribution ~5%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
  11. Sant'Anna FM, Wetzels SU, Cicco SHS, Figueiredo RC, Sales GA, Figueiredo NC, Nunes CA, **Schmitz-Esser S**, Mann E, Wagner M, Souza MR. 2019. Microbial shifts in Minas artisanal cheeses from the Serra do Salitre region of Minas Gerais, Brazil throughout ripening time. *Food Microbiol*. 82:349-362. (Approximate percentage contribution ~5%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
  12. Anast JM\*, Dzieciol M, Schultz DL\*, Wagner M, Mann E, **Schmitz-Esser S**. 2019. *Brevibacterium* from Austrian hard cheese harbor a putative histamine catabolism pathway and a plasmid for adaptation to the cheese environment. *Sci Rep*. 9(1):6164. (Approximate percentage contribution ~25%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments. Authors JMA and DLS are trainees in SSE's program.
  13. Naditz AL\*, Dzieciol M, Wagner M, **Schmitz-Esser S**. 2019. Plasmids contribute to food processing environment-associated stress survival in three *Listeria monocytogenes* ST121, ST8, and ST5 strains. *Int J Food Microbiol*. 299:39-46. (Approximate percentage contribution ~25%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments. Author ALN was trainee in SSE's program.
  14. Lyte M, Daniels KM, **Schmitz-Esser S**. 2019. Fluoxetine-induced alteration of murine gut microbial community structure: evidence for a microbial endocrinology-based mechanism of action responsible for fluoxetine-induced side effects. *PeerJ*. 7:e6199. doi: 10.7717/peerj.6199. (Approximate percentage contribution ~35%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
  15. Li Q, **Schmitz-Esser S**, Loving CL, Gabler NK, Gould SA, Patience JF. 2019. Exogenous carbohydrases added to a starter diet reduced markers of systemic immune activation and decreased *Lactobacillus* in weaned pigs. *J Anim Sci*. 97(3):1242-1253 (Approximate percentage contribution ~5%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
  16. Patzke K, Prananingrum P, Klemens PAW, Trentmann O, Martins Rodrigues C, Keller I, Fernie AR, Geigenberger P, Bölter B, Lehmann M, **Schmitz-Esser S**, Pommerrenig B, Haferkamp I, Neuhaus HE. 2019. The plastidic sugar transporter pSuT influences flowering and affects cold responses. *Plant Physiol*. 179(2):569-587. (Approximate percentage contribution ~5%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
  17. Zhang W, Liu W, Hou R, Zhang L, **Schmitz-Esser S**, Sun H, Xie J, Zhang Y, Wang C, Li L, Yue B, Huang H, Wang H, Shen F, Zhang Z. 2018. Age-associated microbiome shows the giant panda lives on hemicelluloses, not on cellulose. *ISME J*. (5):1319-1328.

- (Approximate percentage contribution ~10%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
18. Muhterem-Uyar M, Ciolacu L, Wagner KH, Wagner M, **Schmitz-Esser S**, Stessl B. 2018. New aspects on *Listeria monocytogenes* ST5-ECVI predominance in a heavily contaminated cheese processing environment. **Front Microbiol.** 9:64.  
(Approximate percentage contribution ~15%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
  19. Mann E, Wetzels SU, Wagner M, Zebeli Q, **Schmitz-Esser S#**. 2018. Metatranscriptome sequencing reveals insights into the gene expression and functional potential of rumen wall bacteria. **Front Microbiol.** 9:43.  
(Approximate percentage contribution ~25%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.
  20. Quijada NM, Mann E, Wagner M, Rodríguez-Lázaro D, Hernández M, **Schmitz-Esser S#**. 2018. Autochthonous facility-specific microbiota dominates washed-rind Austrian hard cheese surfaces and its production environment. **Int J Food Microbiol.** 267:54-61.  
(Approximate percentage contribution ~25%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.
  21. **Schmitz-Esser S#**, Dzieciol M, Nischler E, Schornsteiner E, Bereuter O, Mann E, Wagner M. 2017. Abundance and potential contribution of Gram-negative cheese rind bacteria from Austrian artisanal hard cheeses. **Int J Food Microbiol.** 266:95-103.  
(Approximate percentage contribution ~35%)  
SSE funded the project, was responsible for study design, data collection, writing the manuscript and responding to reviewer comments.
  22. Mann E, Stouthamer CM, Kelly SE, Dzieciol M, Hunter MS, **Schmitz-Esser S#**. 2017. Transcriptome sequencing reveals novel candidate genes for *Cardinium hertigii*-caused Cytoplasmic Incompatibility and host-cell interaction. **mSystems.** 2(6). pii: e00141-17.  
(Approximate percentage contribution ~25%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.
  23. Siegerstetter SC, **Schmitz-Esser S**, Magowan E, Wetzels SU, Zebeli Q, Lawlor PG, O'Connell NE, Metzler-Zebeli BU. 2017. Intestinal microbiota profiles associated with low and high residual feed intake in chickens across two geographical locations. **PLoS One.** 12(11):e0187766.  
(Approximate percentage contribution ~10%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
  24. König L, Siegl A, Penz T, Haider S, Wentrup C, Polzin J, Mann E, **Schmitz-Esser S**, Domman D, Horn M. 2017. Biphasic metabolism and host interaction of a chlamydial symbiont. **mSystems.** 2(3). pii: e00202-16.  
(Approximate percentage contribution ~5%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
  25. Rychli K, Wagner EM, Ciolacu L, Zaiser A, Tasara T, Wagner M, **Schmitz-Esser S#**. 2017. Comparative genomics of human and non-human *Listeria monocytogenes* sequence type 121 strains. **PLoS One.** 12(5):e0176857.  
(Approximate percentage contribution ~20%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.
  26. Wetzels SU, Mann E, Pourazad P, Kumar M, Pinior B, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S**, Zebeli Q. 2017. Epimural bacterial community structure in the rumen of Holstein cows

- with different responses to a long-term subacute ruminal acidosis diet challenge. *J Dairy Sci.* 100:1829–1844.  
*(Approximate percentage contribution ~10%)*  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
27. Chu L, Gruber A, Ast M, **Schmitz-Esser S**, Altensell J, Neuhaus HE, Kroth PG, Haferkamp I. 2017. Shuttling of (deoxy-) purine nucleotides between compartments of the diatom *Phaeodactylum tricornutum*. *New Phytol.* 213(1):193-205.  
*(Approximate percentage contribution ~5%)*  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
28. Awad WA, Mann E, Dzieciol M, Hess C, **Schmitz-Esser S**, Wagner M, Hess M. 2016. Age-related differences in the luminal and mucosa-associated gut microbiome of broiler chickens and shifts associated with *Campylobacter jejuni* infection. *Front Cell Infect Microbiol.* 6:154.  
*(Approximate percentage contribution ~5%)*  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
29. Schön K, Schornsteiner E, Dzieciol M, Wagner M, Müller M, **Schmitz-Esser S#**. 2016. Microbial communities in dairy processing environment floor-drains are dominated by product-associated bacteria and yeasts. *Food Control.* 70, 210-215.  
*(Approximate percentage contribution ~15%)*  
*SSE partially funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
30. Müller A, Walochnik J, Wagner M, **Schmitz-Esser S#**. 2016. A clinical *Acanthamoeba* isolate harboring two distinct bacterial endosymbionts. *Eur J Protistol.* 56:21-25.  
*(Approximate percentage contribution ~25%)*  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
31. Wetzels SU, Mann E, Metzler-Zebeli BU, Pourazad P, Kumar M, Klevenhusen F, Pinior B, Wagner M, Zebeli Q, **Schmitz-Esser S#**. 2016. Epimural indicator phylotypes of transiently-induced subacute ruminal acidosis in dairy cattle. *Front Microbiol.* 7:274.  
*(Approximate percentage contribution ~15%)*  
*SSE partially funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
32. Mann E, Wetzels SU, Pinior B, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S#**. 2016. Psychrophile spoilers dominate the bacterial microbiome in musculature samples of slaughter pigs. *Meat Sci.* 117:36-40.  
*(Approximate percentage contribution ~15%)*  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
33. Burgess CM, Gianotti A, Gruzdev N, Holah J, Knøchel S, Lehner A, Margas E, **Schmitz-Esser S**, Sela Saldinger S, Tresse O. 2016. The response of foodborne pathogens to osmotic and desiccation stresses in the food chain. *Int J Food Microbiol.* 221:37-53.  
*(Approximate percentage contribution ~10%)*  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
34. Dzieciol M, Schornsteiner E, Muhterem-Uyar M, Stessl B, Wagner M, **Schmitz-Esser S#**. 2016. Bacterial diversity of floor drain biofilms and drain waters in a *Listeria monocytogenes* contaminated food processing environment. *Int J Food Microbiol.* 223:33-40.  
*(Approximate percentage contribution ~15%)*  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*

**The following publications were published before appointment at ISU**

35. Mann E, Pinior B, Wetzels SU, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S#**. 2015. The metabolically active bacterial microbiome of tonsils and mandibular lymph nodes of slaughter pigs. ***Front Microbiol.*** 6:1362.  
(Approximate percentage contribution ~15%)  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
36. Rychli K, Grunert T, Ciolacu L, Zaiser A, Razzazi-Fazeli E, **Schmitz-Esser S**, Ehling-Schulz M, Wagner M. 2015. Exoproteome analysis reveals higher abundance of proteins linked to alkaline stress in persistent *Listeria monocytogenes* strains. ***Int J Food Microbiol.*** 218:17-26.  
(Approximate percentage contribution ~5%)  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
37. Metzler-Zebeli BU, **Schmitz-Esser S**, Mann E, Grüll D, Molnar T, Zebeli Q. 2015. Adaptation of the cecal bacterial microbiome of growing pigs in response to resistant starch type 4. ***Appl Environ Microbiol.*** 81(24):8489-8499.  
(Approximate percentage contribution ~5%)  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
38. Mann E, Dzieciol M, Pinior B, Neubauer V, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S#**. 2015. High diversity of viable bacteria isolated from lymph nodes of slaughter pigs and its possible impacts for food safety. ***J Appl Microbiol.*** 119(5):1420-1432.  
(Approximate percentage contribution ~15%)  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
39. **Schmitz-Esser S#**, Müller A, Wagner M. 2015. Genomes of sequence type 121 *Listeria monocytogenes* strains harbor highly conserved plasmids and prophages. ***Front Microbiol.*** 6:380.  
(Approximate percentage contribution ~50%)  
*SSE funded the project, was responsible study design, data collection, writing the manuscript and responding to reviewer comments.*
40. Hund A, Dzieciol M, **Schmitz-Esser S**, Wittek T. 2015. Characterization of mucosa-associated bacterial communities in abomasal ulcers by pyrosequencing. ***Vet Microbiol.*** 177(1-2):132-41.  
(Approximate percentage contribution ~15%)  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
41. Metzler-Zebeli BU, Mann E, Ertl R, **Schmitz-Esser S**, Wagner M, Klein D, Ritzmann M, Zebeli Q. 2015. Dietary calcium concentration and cereals differentially affect mineral balance and tight junction proteins expression in jejunum of weaned pigs. ***Br J Nutr.*** 113(7):1019-31.  
(Approximate percentage contribution ~5%)  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
42. Wetzels SU, Mann E, Metzler-Zebeli BU, Wagner M, Klevenhusen F, Zebeli Q, **Schmitz-Esser S#**. 2015. Pyrosequencing reveals shifts in the bacterial epimural community relative to dietary concentrate amount in goats. ***J Dairy Sci.*** 98(8):5572-87.  
(Approximate percentage contribution ~10%)  
*SSE partially funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
43. Klein-Jöbstl D, Schornsteiner E, Mann E, Wagner M, Drillich M, **Schmitz-Esser S**. 2014. Pyrosequencing reveals diverse fecal microbiota in Simmental calves during early development. ***Front Microbiol.*** 5:622.  
(Approximate percentage contribution ~10%)

- SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
44. Eichinger I., **Schmitz-Esser S.**, Schmid M., Fisher CR, Bright M. 2014. Symbiont-driven sulfur crystal formation in a thiotrophic symbiosis from deep-sea hydrocarbon seeps. **Environ Microbiol Rep.** 6:364-372.  
(Approximate percentage contribution ~5%)  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
  45. Müller A, Rychli K, Zaiser A, Wieser C, Wagner M, **Schmitz-Esser S#.** 2014. The *Listeria monocytogenes* transposon Tn6188 provides increased tolerance to various quaternary ammonium compounds and ethidium bromide. **FEMS Microbiol Lett.** 361(2):166-73.  
(Approximate percentage contribution ~20%)  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
  46. Schornsteiner E, Mann E, Bereuter O, Wagner M, **Schmitz-Esser S#.** 2014. Cultivation-independent analysis of microbial communities on Austrian raw milk hard cheese rinds. **Int J Food Microbiol.** 180:88-97.  
(Approximate percentage contribution ~25%)  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
  47. Casey A, Fox EM, **Schmitz-Esser S**, Coffey A, McAuliffe O, Jordan K. 2014. Transcriptome analysis of *Listeria monocytogenes* exposed to biocide stress reveals a multi-system response involving cell wall synthesis, sugar uptake, and motility. **Front Microbiol.** 5:68.  
(Approximate percentage contribution ~5%)  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
  48. Rychli K, Müller A, Zaiser A, Schoder D, Allerberger F, Wagner M, **Schmitz-Esser S#.** 2014. Genome sequencing of *Listeria monocytogenes* "Quargel" listeriosis outbreak strains reveals two different strains with distinct in vitro virulence potential. **PLoS One.** 9:e89964.  
(Approximate percentage contribution ~15%)  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
  49. Mann E, **Schmitz-Esser S**, Zebeli Q, Wagner M, Ritzmann M, Metzler-Zebeli BU. 2014. Mucosa-associated bacterial microbiome of the gastrointestinal tract of weaned pigs and dynamics linked to dietary calcium-phosphorus. **PLoS One.** 9:e86950.  
(Approximate percentage contribution ~10%)  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
  50. Mann E, Dzieciol M, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S.** 2014. Microbiomes of unreactive and pathologically altered ileocecal lymph nodes of slaughter pigs. **Appl Environ Microbiol.** 80:193-203.  
(Approximate percentage contribution ~15%)  
*SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.*
  51. Metzler-Zebeli BU, Mann E, **Schmitz-Esser S**, Wagner M, Ritzmann M, Zebeli Q. 2013. Changing dietary calcium-phosphorus level and cereal source selectively alters abundance of bacteria and metabolites in the upper gastrointestinal tracts of weaned pigs. **Appl Environ Microbiol.** 79:7264-7272.  
(Approximate percentage contribution ~5%)  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*

52. Müller A, Rychli K, Muhterem-Uyar M, Zaiser A, Stessl B, Guinane CM, Cotter PD, Wagner M, **Schmitz-Esser S**. 2013. Tn6188 - a novel transposon in *Listeria monocytogenes* responsible for tolerance to benzalkonium chloride. *PLoS One*. 8:e76835.  
(Approximate percentage contribution ~20%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.
53. Metzler-Zebeli BU, **Schmitz-Esser S**, Klevenhusen F, Podstatzky-Lichtenstein L, Wagner M, Zebeli Q. 2013. Grain-rich diets differently alter ruminal and colonic abundance of microbial populations and lipopolysaccharide in goats. *Anaerobe*. 20:65-73.  
(Approximate percentage contribution ~5%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
54. Haferkamp I, Penz T, Geier M, Ast M, Mushak T, Horn M, **Schmitz-Esser S**. 2013. The endosymbiont *Amoebophilus asiaticus* encodes an S-adenosylmethionine carrier that compensates for its missing methylation cycle. *J Bacteriol*. 195(14):3183-92.  
(Approximate percentage contribution ~15%)  
SSE partially funded the project, contributed to study design, data collection, writing the manuscript and responding to reviewer comments.
55. Penz T<sup>§</sup>, **Schmitz-Esser S**<sup>§</sup>, Kelly SE, Cass BN, Müller A, Woyke T, Malfatti SA, Hunter MS, Horn M. 2012. Comparative genomics suggests an independent origin of cytoplasmic incompatibility in *Cardinium hertigii*. *PLoS Genet.*, 8(10):e1003012. <sup>§</sup>contributed equally  
(Approximate percentage contribution ~15%)  
SSE partially funded the project, contributed to study design, data collection, writing the manuscript and responding to reviewer comments.
56. Haferkamp I, **Schmitz-Esser S**. 2012. The plant mitochondrial carrier family: functional and evolutionary aspects. *Front Plant Sci*. 3:2.  
(Approximate percentage contribution ~20%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
57. **Schmitz-Esser S**, Penz T, Spang A, Horn M. 2011. A bacterial genome in transition - an exceptional enrichment of IS elements but lack of evidence for recent transposition in the symbiont *Amoebophilus asiaticus*. *BMC Evol Biol*. 11:270.  
(Approximate percentage contribution ~25%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.
58. Toenshoff ER, Penz T, Narzt T, Collingro A, **Schmitz-Esser S**, Pfeiffer S, Klepal W, Wagner M, Weinmaier T, Rattei T, Horn M. 2011. Bacteriocyte-associated gammaproteobacterial symbionts of the *Adelges nordmannianae/piceae* complex (Hemiptera: Adelgidae). *ISME J*. 6:384-396.  
(Approximate percentage contribution ~5%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
59. Knab S, Mushak TM, **Schmitz-Esser S**, Horn M, Haferkamp I. 2011. Nucleotide parasitism by *Simkania negevensis* (Chlamydiae). *J Bacteriol*. 193:225-235.  
(Approximate percentage contribution ~10%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
60. Penz T, Horn M, **Schmitz-Esser S**. 2010. The genome of the amoeba symbiont "*Candidatus* *Amoebophilus asiaticus*" encodes an afp-like prophage possibly used for protein secretion. *Virulence*, 1(6):541-5.  
(Approximate percentage contribution ~50%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.

61. **Schmitz-Esser S#.**, Tischler P, Arnold R, Montanaro J, Wagner M, Rattei T, Horn M. 2010. The genome of the amoeba symbiont '*Candidatus Amoebophilus asiaticus*' reveals common mechanisms for host cell interaction among amoeba-associated bacteria. *J Bacteriol.*, 192(4):1045-57.  
(Approximate percentage contribution ~50%)  
SSE funded the project, oversaw study design, data collection, writing the manuscript and responding to reviewer comments.
62. Ast M, Gruber A, **Schmitz-Esser S**, Neuhaus HE, Kroth PG, Horn M, Haferkamp I. 2009. Diatom plastids depend on nucleotide import from the cytosol. *Proc Natl Acad Sci USA*. 106:621-3626.  
(Approximate percentage contribution ~5%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
63. Rinke C, **Schmitz-Esser S**, Loy A, Horn M, Wagner M, Bright M. 2009. High genetic similarity between two geographically distinct strains of the sulfur-oxidizing symbiont '*Candidatus Thiobios zoothamnicoli*'. *FEMS Microbiol Ecol*. 67:229-241.  
(Approximate percentage contribution ~10%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
64. **Schmitz-Esser S**, Toenshoff ER, Haider S, Heinz E, Hoenninger VM, Wagner M, Horn M. 2008. Diversity of bacterial endosymbionts of environmental *Acanthamoeba* isolates. *Appl Environ Microbiol*. 74:5822-5831.  
(Approximate percentage contribution ~35%)  
SSE partially funded the project, contributed to study design, data collection, writing the manuscript and responding to reviewer comments.
65. **Schmitz-Esser S**, Haferkamp I, Knab S, Penz T, Ast M, Kohl C, Wagner M, Horn M. 2008. *Lawsonia intracellularis* encodes a functional rickettsia-like ATP/ADP translocase for host exploitation. *J Bacteriol*. 190:5746-52.  
(Approximate percentage contribution ~35%)  
SSE partially funded the project, contributed to study design, data collection, writing the manuscript and responding to reviewer comments.
66. Maixner F, Wagner M, Lückner S, Pelletier E, **Schmitz-Esser S**, Hace K, Spieck E, Konrat R, Le Paslier D, Daims H. 2008. Environmental genomics reveals a functional chlorite dismutase in the nitrite-oxidizing bacterium '*Candidatus Nitrospira defluvii*'. *Environ Microbiol*. 10:3043 - 3056.  
(Approximate percentage contribution ~5%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
67. Haferkamp I, **Schmitz-Esser S**, Wagner M, Neigel N, Horn M, Neuhaus HE. 2006. Tapping the nucleotide pool of the host: novel nucleotide carrier proteins of *Protochlamydia amoebophila*. *Mol Microbiol*. 60: 1534-1545.  
(Approximate percentage contribution ~20%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
68. Rinke C, **Schmitz-Esser S**, Stoecker K, Nussbaumer AD, Molnár DA, Vanura K, Wagner M, Horn M, Ott J, Bright M. 2006. '*Candidatus Thiobios zoothamnicoli*', an ectosymbiotic bacterium covering the giant marine ciliate *Zoothamnium niveum*. *Appl Environ Microbiol*. 72: 2014-21.  
(Approximate percentage contribution ~15%)  
SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.
69. Collingro A, Poppert S, Heinz E, **Schmitz-Esser S**, Essig A, Schweikert M, Wagner M, Horn M. 2005. Recovery of an environmental chlamydia strain from activated sludge by co-cultivation with *Acanthamoeba* sp. *Microbiology*, 151: 301-309.  
(Approximate percentage contribution ~5%)

- SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*
70. Horn M, Collingro A, **Schmitz-Esser S**, Beier CL, Purkhold U, Fartmann B, Brandt P, Nyakatura GJ, Droege M, Frishman D, Rattei T, Mewes HW, Wagner M. 2004. Illuminating the evolutionary history of chlamydiae. *Science*, 304:728-730.  
(Approximate percentage contribution ~5%)  
*SSE contributed to the analyses and intellectually, and contributed to writing the manuscript.*
  71. Haferkamp I, **Schmitz-Esser S**, Linka N, Urbany C, Collingro A, Wagner M, Horn M, Neuhaus HE. 2004. A candidate NAD<sup>+</sup> transporter in an intracellular bacterial symbiont related to chlamydiae. *Nature*, 432: 622-625.  
(Approximate percentage contribution ~15%)  
*SSE contributed intellectually and to analyses, and contributed to writing the manuscript.*
  72. **Schmitz-Esser S**, Linka N, Collingro A, Beier CL, Neuhaus HE, Wagner M, Horn M. 2004. ATP/ADP translocases: a common feature of obligate intracellular amoebal symbionts related to chlamydiae and rickettsiae. *J Bacteriol.* 186:683-691.  
(Approximate percentage contribution ~25%)  
*SSE contributed to study design, data collection, writing the manuscript and responding to reviewer comments.*
  73. Schmid M., **Schmitz-Esser S**, Jetten M, Wagner M. 2001. 16S-23S rDNA intergenic spacer and 23S rDNA of anaerobic ammonium-oxidizing bacteria: implications for phylogeny and in situ detection. *Environ Microbiol.* 3:450-459.  
(Approximate percentage contribution ~10%)  
*SSE was a collaborator on the project, contributed intellectually, and contributed to writing the manuscript.*

#### **BOOK CHAPTERS**

1. Schmitz-Esser S, Wagner M. Genome sequencing of *Listeria monocytogenes*. 2014. Methods Mol Biol. 1157:223-32. (Jordan K, Fox EM, Wagner M, ed.) Springer, New York.  
(Approximate percentage contribution ~70%)
2. Horn, M., A. Collingro, S. Schmitz-Esser, and M. Wagner. 2006. Environmental Chlamydia Genomics. In: Chlamydia: genomics and pathogenesis, pp. 25-44. (Bavoil PM, Wyrick PB, ed.). Horizon Scientific Press, Norfolk.  
(Approximate percentage contribution ~15%)
3. Schmid MC, Schmitz-Esser S, Jetten M, Wagner M. 2001. The rDNA operon of anaerobic ammonium oxidizing bacteria: Implications for phylogeny and in situ detection In: Der Stickstoff im Wasser/Abwasser, pp. 7-19. (Metzger J W, ed.). Oldenbourg Industrieverlag GmbH, München.  
(Approximate percentage contribution ~10%)

#### **OTHER PUBLICATIONS (non peer-reviewed)**

1. Koltjes, JE.; Poole, DH.; Schmitz-Esser, S; Zhao, J; Chewning, S; Hubbell, D III; and Serão, NVL. 2018 "Development of New Measurements and Tools to Mitigate Fescue Toxicosis in Beef Cattle" Animal Industry Report: AS 664, ASL R3229.
2. Meyer, M; Koester, LK; Schmitz-Esser, S; Bobeck, EA. 2018 „Determining Presence of Yolk Sac and Intestinal Bacterial Colonization in Pre-hatch Chicken Embryos“ Animal Industry Report: AS 664, ASL R3259.
3. Schmitz-Esser S, Gram L, Wagner M. 2015. "Complete genome sequence of the persistent *Listeria monocytogenes* strain R479a". Genome Announc. 2015 Mar 19;3(2).
4. Schmitz-Esser S. Book Review: „Cheese and Microbes by Catherine W. Donnelly“ The Quarterly Review of Biology, Vol. 90, No. 3 (September 2015), p. 346.

## PROVISIONAL PATENT APPLICATION

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1. Fries-Craft KA, Schmitz-Esser S, and Kraayenbrink EA. Provisional patent: ISURF # 04994 - 5th Cutting Chloroform Alfalfa Extract. Provisional patent applied for March 2020. KFC and EAK developed an alfalfa extract that improves immunity, alters immune cell profile, and alters microbiome (SSE).

## MEMBERSHIP IN PROFESSIONAL SOCIETIES

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- International Association for Food Protection (IAFP) since 2019
- American Dairy Science Association (ADSA) since 2017
- International Society for Microbial Ecology (ISME) since 2008
- American Society for Microbiology (ASM) since 2003

## FUNDED PROJECTS

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Summary total: \$ 7,306,283, as PI: \$ 2,221,187

### Since appointment at ISU

- **National Institutes of Health (NIH):** “Developing second generation SCID pig models: filling the gaps to improve translation of therapeutics in regenerative medicine”. **Role:** Co-Investigator (PI: Chris Tuggle, co-Investigators: J. Ross, J. Cunnick, A. Ahrens, S. Schmitz-Esser, M. Sauer, J. Dekkers). June 2020 to May 2024. \$3,001,759 (*Contribution: 7%*)
- **National Science Foundation (NSF):** Division of Integrative Organismal Systems Core Programs, Program Solicitation NSF 18-586: “Collaborative Research: The saboteur’s tools: mechanisms for host reproductive manipulation by the bacterial arthro-pod endosymbiont *Cardinium hertigii*”. **Role:** co-PI (co-Investigators: M. Hunter, M. Kleiner). June 15, 2020 to June 14, 2023. \$359,952 (*Contribution: 100%*)
- **Zoetis:** “Understanding Mastitis, Metritis, and Agalactica in sows”. **Role:** co-PI (PI: Jason Ross, co-P-Investigators: L. Baumgard, A. Keating, L. Greiner). \$135,000 (*Contribution: 20%*)
- **US Department of Agriculture:** Foundational (AFRI-1 Improving Food Safety Program Area Priority Code – A1331): “Illuminating the impact of plasmids to stress survival of *Listeria monocytogenes*”. **Role:** PI. June 1, 2019 to May 30, 2022. \$365,154 (*Contribution: 100%*)
- **Pancosma,** Geneva, Switzerland: “Ability of Sucram to mediate non-nutritive microbial endocrinology based signaling under normal and stress conditions in the rumen wall the pig GI tract”. **Role:** co-PI (PI: Mark Lyte). July 1, 2018 to June 30, 2020. \$306,000 (*Contribution: 50%*)
- **National Pork Board:** “An integrated approach to improve whole herd pig survivability”. **Role:** Co-Investigator. (PI: Jason Ross, co-Investigators: N. Gabler, A. Johnson, A. Keating, J. Patience, S. Schmitz-Esser; K. Stalder, L. Schulz, D. Linhares, C. Rademacher, K. Schwartz, S. Millman, A. Chipman). November 15, 2018 to November 14, 2023. \$1,999,772 (*Contribution: 7%*)
- **Iowa Sheep and Wool Promotion Board:** “Can vaginal microbiota predict fertility of ewes?” **Role:** co-PI (PI: Curtis Youngs). August 15, 2018 to May 15, 2020. \$4,250 (*Contribution: 50%*)
- **Egg Industry Center Research Grant Program:** “Characterizing intestinal health, bacterial communities, and their interaction between caged and cage-free housing in commercial layer”. **role:** co-PI (PI: Dawn Koltes). August 2018 to July 2019. \$37,396 (*Contribution: 25%*)
- **Iowa State University** Department of Animal Science (Internal): “Dissecting the beneficial influence of alfalfa on host microbiota and immune function”. **Role:** co-PI (PI: E. Bobeck). December 2017 to December 2018. \$25,000 (*Contribution: 50%*)
- **Pancosma,** Geneva, Switzerland: “Non-nutritive microbial signaling at the rumen wall” **role:** co-PI (PI: Mark Lyte). July 1, 2016 to June 30, 2018. \$260,000 (*Contribution: 50%*)

### Before appointment at ISU

- **Austrian Science Fund FWF, National Science Foundation NSF:** 2013 to 2016. Joint International project: “Genetic and cytogenetic bases of *Cardinium*-caused cytoplasmic incompatibility”. **Role:** co-PI (PI: M. Hunter). € 174,000 (approx. \$210,000) (*Contribution: 100%*)

- **University of Veterinary Medicine Vienna**, Austria 2010 to 2014. "Ecology of Food-borne pathogens". **Role:** PI. € 60,000 (approx. \$72,000) (*Contribution: 100%*)
- **Austrian Science Fund FWF:** 2010 to 2013: "Amoebophilus asiaticus mechanisms for host cell interaction". **Role:** PI € 302,000 (approx. \$365,000) (*Contribution: 100%*)
- **Austrian Science Fund FWF:** 2006 to 2008: "The evolution of symbiosis in the *Bacteroidetes*". **Role:** PI. € 136,000 (approx. \$165,000) (*Contribution: 100%*)

#### INVITED PRESENTATIONS (n=12)

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##### **Since appointment at ISU**

1. "The Rumen Wall Microbiota: Gatekeepers between the Rumen Content and the Host Tissue and their Potential Contributions to Rumen Wall Integrity and Animal Health and Performance" 66<sup>th</sup> International Congress of Meat Science and Technology and 73<sup>rd</sup> AMSA Reciprocal Meat Conference, August 2020 (*online conference*)
2. "Gut health and microbiota – where are we today?", 2019 Turkey & Broiler Health Management School, Ames, IA, May 2019
3. "Microbiome research in livestock" Purina Land O'Lakes, Gray Summit, MO, December 2018.
4. "Composition and in situ gene expression of rumen wall microbial communities", American Society for Animal Science (ASAS) Midwest Meeting, March 2018, Omaha, NE, USA. Journal of Animal Science, Vol: 96 Pages: 14-15 Supplement: 2 Meeting Abstract: 27
5. "Microbiome research in livestock" PMI Nutritional Additives, Ames, IA, January 2018.
6. "Microbiome research in farm animals" Kemin Industries, Des Moines, IA, July 2017.

##### **Before appointment at ISU**

7. "Tn6188 - a novel transposon in *Listeria monocytogenes* responsible for tolerance to benzalkonium chloride" Annual Meeting of the Austrian Society for Hygiene, Microbiology and Preventive Medicine (ÖGHMP). June 2014, Bad Ischl, Austria.
8. "Basics in microbial community analysis: methods and software" 2<sup>nd</sup> Annual Meeting of the EU project "PROMISE" and 1<sup>st</sup> Stakeholder Meeting with Irish food industry, November 2013, Dublin, Ireland.
9. "Persistence of *Listeria monocytogenes* – a genomic approach". March 2012, TEAGSC (The Agriculture and Food Development Authority), Moorepark Food Research Centre, Fermoy, Ireland.
10. "Bacterial symbionts of amoebae: Model systems for studying host cell interaction mechanisms of intracellular bacteria", Max Planck Institute for Marine Microbiology, February 2011, Bremen, Germany.
11. "Bacterial symbionts of amoebae: Model systems for studying host cell interaction mechanisms of intracellular bacteria" Vienna graduate school of population genetics: October 2010, Vienna, Austria.
12. "Nucleotide and other transport proteins in obligate intracellular bacteria - connecting host and symbiont metabolism", University of Kaiserslautern, July 2009, Kaiserslautern, Germany.

#### ORAL PRESENTATIONS (n=18)

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##### **Since appointment at ISU**

1. **Schmitz-Esser S**, Wetzels SU, Zebeli Q, Wagner M, Mann E. (2017) "Metatranscriptome sequencing reveals insights into the gene expression of the bovine epimural bacterial community". Annual Meeting of the American Dairy Science Association (ADSA), June 25-28 2017, Pittsburgh, PA.
2. **Schmitz-Esser S**, Nischler E, Dzieciol M, Mann E, Wagner M. (2017) "Genomics of *Advenella*, *Psychrobacter* and *Psychroflexus* strains from the surface of Austrian artisanal hard cheeses: insights into ripening and flavor generation". Annual Meeting of the American Dairy Science Association (ADSA), June 25-28 2017, Pittsburgh, PA.

3. **Schmitz-Esser S.** "Analyzing the contribution of the giant panda's microbiota to nitrogen metabolism and reproductive productivity". (2017) Annual Conference of the Chinese Committee of Breeding Techniques for Giant Pandas, November 6-9, 2017, Chengdu, China.
4. Mann E, Stouthamer CM, Kelly SE, Hunter MS, **Schmitz-Esser S.** (2016) "Transcriptome sequencing reveals insights into the genetic basis of *Cardinium hertigii*-caused cytoplasmic incompatibility". International Symposium on Microbial Ecology ISME 16, August 21-26, 2016, Montreal, Canada.

#### **Before appointment at ISU**

5. Dzieciol M, Schornsteiner E, Muhterem-Uyar M, Stessl B, Wagner M, **Schmitz-Esser S.** (2014) "Composition of the microbiome in water and biofilms of *L. monocytogenes* positive drains". Joint conference PROMISE and BacFood Net. November 17-19 2014, Vienna, Austria.
6. **Schmitz-Esser S,** Müller A, Pricope L; Zaiser A, Rychli K, Wagner M. (2013) "Comparative genome analyses of persistent *Listeria monocytogenes* strains". ISOPOL XVIII - International Symposium on Problems of Listeriosis; September 19-22 2013; Goa, India.
7. **Schmitz-Esser S,** Müller A, Muhterem-Uyar M, Zaiser A, Steßl B, Rychli K, Wagner M. (2013) "Tn6188 - a novel transposon in *Listeria monocytogenes* conferring tolerance to benzalkonium chloride". 54-55.-Joint annual meeting of the Association for General and Applied Microbiology (VAAM) and the Royal Dutch Society of Microbiology (KNVM). March 10-13, 2013; Bremen, Germany.
8. **Schmitz-Esser S,** Müller A, Pricope L, Zaiser A, Rychli K, Wagner M. (2012) "Comparative genome analyses of persistent *Listeria monocytogenes* strains". FoodMicro 2012; September 3-7, 2012; Istanbul, Turkey.
9. **Schmitz-Esser S,** Müller A, Allerberger F, Wagner M. (2012) "Comparative genome analyses of *Listeria monocytogenes* outbreak strains". 33<sup>rd</sup> Annual Meeting of the Austrian Society of Hygiene, Microbiology and Preventive Medicine (ÖGHMP); May 22-24, 2012; Salzburg, Austria.
10. **Schmitz-Esser S,** Penz T, Spang A, Wagner M, Horn M. (2010) "Identification and characterization of IS elements in the genome of the obligate intracellular amoeba symbiont '*Candidatus Amoebophilus asiaticus*'" 13<sup>th</sup> International Symposium on Microbial Ecology ISME13, August 2010, Seattle, WA, USA.
11. **Schmitz-Esser S,** Walcher M, Horn A, Horn M, Wagner M, Wagner M. (2010) "Interaction of *Listeria monocytogenes* with free-living amoebae". 32<sup>nd</sup> Annual Meeting of the Austrian Society of Hygiene, Microbiology and Preventive Medicine (ÖGHMP), Vienna, Austria, May 2010.
12. **Schmitz-Esser S,** Tischler P, Arnold R, Montanaro J, Wagner M, Rattei T, Horn M. (2009) „The genome of the amoeba symbiont '*Candidatus Amoebophilus asiaticus*' reveals common mechanisms for host cell interaction among amoeba-associated bacteria". 6<sup>th</sup> congress of the International Symbiosis Society (ISS), Madison, WI, USA, August 2009.
13. **Schmitz-Esser S,** Tischler P, Montanaro J, Wagner M, Rattei T, Horn M. (2008) "Whole genome analysis of the symbiont '*Candidatus Amoebophilus asiaticus*' reveals a unique adaptation to eukaryotic host cells". 12<sup>th</sup> International Symposium on Microbial Ecology ISME12, Cairns, Australia, August 2008.
14. **Schmitz-Esser S,** Tischler P, Montanaro J, Wagner M, Rattei T, Horn M. (2008) "Whole genome analysis of the symbiont '*Candidatus Amoebophilus asiaticus*' reveals a unique adaptation to eukaryotic host cells". 5<sup>th</sup> International Wolbachia Conference, Kolybari, Greece, June 2008.
15. **Schmitz-Esser S,** Haferkamp I, Wagner M, Neigel N, Horn M, Neuhaus HE. (2006) „Tapping the nucleotide pool of the host: novel nucleotide carrier proteins of *Protochlamydia amoebophila* UAE25". 4<sup>th</sup> German Chlamydia Workshop, Düsseldorf, Germany, March 2006.
16. **Schmitz-Esser S,** Haferkamp I, Linka N, Collingro A, Urbany C, Wagner M, Neuhaus HE, Horn M. (2004) „Characterization of nucleotide transport proteins of the environmental chlamydia UAE25". 5<sup>th</sup> Meeting of the European society for chlamydia research (ESCR), Budapest, Hungary, September 2004.
17. **Schmitz-Esser S,** Heuer D, Collingro A, Szczepek AJ, Wagner M, Horn M. (2004) „Molecular mechanisms of interaction between chlamydia-related symbionts and their amoebal hosts". 2<sup>nd</sup> German Chlamydia Workshop, Berlin, Germany, March 2004.

18. **Schmitz-Esser S**, Heuer D, Collingro A, Szczepek AJ, Meyer TF, Wagner M, Horn M. (2003) „Characterization of an ATP/ADP translocase and a chlamydial virulence factor in the environmental chlamydia isolate UWE25”. 1<sup>st</sup> German Chlamydia Workshop, Berlin, Germany, Mar 2003.

**ABSTRACTS AND MEETING PAPERS (n=81) (this list is non-redundant with the lists above)**

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**Since appointment at ISU**

1. Anast JM, **Schmitz-Esser S**. (2019) “Transcriptome sequencing of *Listeria monocytogenes* during co-cultivation with cheese rind bacteria reveals a possible contribution of the non-coding RNA rli47 to competitive fitness and global stress response”, International Symposium on Problems of Listeria and Listeriosis (ISOPOL) 2019. Toronto, Canada, September 24-27 2019.
2. Anast JM, **Schmitz-Esser S**. (2019) “Transcriptome sequencing of *Listeria monocytogenes* during co-cultivation with cheese rind bacteria”, Technical presentation, IAFP (International Association for Food Protection) Annual meeting. Louisville, KY, July 21-24 2019.
3. Kiefer ZE, Chipman AL, Studer JM, Koester LR, Showman L, Keating AF, **Schmitz-Esser S**, Ross JW (2019). “Identification of putative factors associated with pelvic organ prolapse in sows during late gestation”. 52<sup>nd</sup> Annual Meeting Society for the Study of Reproduction, San Jose, CA. July 18-21.
4. Koester LR, Allen HK, Bravo D, Rasmussen S, Lyte M, **Schmitz-Esser S**. (2019) „Evidence for stratification of rumen wall microbial communities revealed by 16S rRNA based amplicon sequencing”. Journal of Animal Science, Vol: 97 Pages: 226-226 Supplement: 2 Meeting Abstract: PSII-16
5. Sanglard LP, **Schmitz-Esser S**, Gray KA, Linhares DCL, Yeoman CJ, Dekkers JCM, Niederwerder MC, Serão NVL. (2019) “Relationship between host-genetics and the vaginal microbiome in commercial gilts”. Journal of Animal Science, Vol: 97 Pages: 43-44 Supplement: 3 Meeting Abstract: 219
6. Fries-Craft K, Anast JM, **Schmitz-Esser S**, Bobeck EA. (2019) “Responses to alfalfa supplementation in mice”. Journal of Animal Science, Vol: 97 Pages: 45-45 Supplement: 2 Meeting Abstract: 77
7. Li QY, Gabler NK, Burrough ER, Loving CL, **Schmitz-Esser S**, Patience JF, Peng XY (2019). “Young Scholar Presentation: Can exogenous carbohydrase supplementation to higher-fiber diets improve gut function, microbiota, and growth performance of weaned pigs?”. Journal of Animal Science. Volume: 97 Pages: 76-76 Supplement: 2 Meeting Abstract: 130
8. Dzieciol M, **Schmitz-Esser S**, Glanz L, Zwirzitz B, Wagner M, Wetzels SU, Mann, E (2019). „Fungal community in Austrian Vorarlberger Bergkäse during ripening”. 1541-1541.-FEMS (Federation of European Microbiological Societies), 8<sup>th</sup> Congress of European Microbiologists, July 9-11, Glasgow, United Kingdom.
9. Chipman A, Rademacher CJ, Johnson C, Stalder KJ, Johnson AK, Keating AF, Patience JF, Gabler NK, Linhares D, Schwartz K, Millman ST, Studer J, Kiefer Z, **Schmitz-Esser S**, Silva G, Ross JW (2018) “Pelvic Organ Prolapse: An industry-wide collaboration to identify putative contributing factors”. Minneapolis, MN. September 15-18.
10. Wagner M, Wetzels SU, Zebeli Q, Metzler-Zebeli B, **Schmitz-Esser S**, Mann E (2018). “Insights into the microbiota composition and metatranscriptome at the gut-body interface”. -69<sup>th</sup> Annual Meeting of the European Federation of Animal Science (EAAP 2018), August 27-31, 2018, Dubrovnik, Croatia.
11. Zwirzitz B, Pinior B, Metzler-Zebeli B, Handler M, Gense K, Knecht C, Ladinig A, Dzieciol M, Wetzels SU, Wagner M, **Schmitz-Esser S**, Mann E (2018). „Microbiota of the gut-lymph node axis: Depletion of mucosa-associated segmented filamentous bacteria and enrichment of Methanobrevibacter by Colistin sulfate and Linco-Spectin in pigs” -10<sup>th</sup> ÖGMBT Annual Meeting - Ten years life, science & molecules, September 17-20, 2018, Wien, Austria.
12. Zwirzitz B, Pinior B, Metzler-Zebeli B, Handler M, Gense K, Knecht C, Ladinig A, Dzieciol M, Wetzels SU, Wagner M, **Schmitz-Esser S**, Mann E (2018). „Effects of in-feed antibiotics on fecal, ileal, and ileocecal lymph node-associated microbiota in pigs”. -17<sup>th</sup> International Symposium on Microbial Ecology, August 12-17, Leipzig, Germany.

13. Wetzels SU, Mann E, Zebeli Q, Wagner M, **Schmitz-Esser S** (2018). „The metatranscriptome of the bovine rumen wall bacterial community”. 17<sup>th</sup> International Symposium on Microbial Ecology (ISME), August 13-17, 2018, Leipzig, Germany.
14. Koester LR, Poole DH, Serao NVL, **Schmitz-Esser S**. (2018) „Effect of Genetic Response to Endophyte-Infected Fescue on Beef Cattle Gastrointestinal Tract Microbiota“. Journal of Animal Science, Vol: 96 Pages: 12-13 Supplement: 2 Meeting Abstract: 23
15. Li QY, **Schmitz-Esser S**, Patience JF. (2018) “Impact of Fiber-Degrading Enzymes on Microbial Composition and NSP Metabolites in Nursery Pigs Fed a Higher Fiber Diet”. Journal of Animal Science, Vol: 96 Pages: 161-162 Supplement: 2 Meeting Abstract: 300
16. Koester LR, Allen HK, Bravo D, Rasmussen S, Lyte M, **Schmitz-Esser S**. (2018) “Evidence for stratification of rumen wall microbial communities revealed by 16S rRNA based amplicon sequencing“. Journal of Animal Science, Vol: 96 Pages: 207-207 Supplement: 2 Meeting Abstract: 385
17. Naditz AL, Dhar D, **Schmitz-Esser S** (2018). “Elucidating the contribution of *Listeria monocytogenes* plasmids to survival in dairy foods and production facilities“. J. Dairy Sci. Vol. 101, Suppl. 2 Dairy Foods III: Microbiology and Health. Abstract: 397.
18. Anast JM, **Schmitz-Esser S** (2018). "Genome analysis of *Brevibacterium* strains isolated from Austrian hard cheese rinds reveals two novel *Brevibacterium* species and putative histamine catabolism pathway genes". ASM North Central Branch Meeting, Mankato, MN.
19. Quijada NM, Mann E, Wagner M, Rodríguez-Lázaro D, Hernández M, **Schmitz-Esser S** (2018). “Austrian hard cheese production: the impact of autochthonous facility-specific microbiota”. FoodMicro 2018 - 26<sup>th</sup> International ICFMH Conference, September 3-6, 2018, Berlin, Germany.
20. Wetzels SU, Dzieciol M, Wagner M, **Schmitz-Esser S**, Mann E (2017). “Survey of the metabolically active bacterial microbiome of lymph nodes in slaughter pigs, confirmed by cultivation of viable bacteria and amplicon pyrosequencing” -FEMS 7<sup>th</sup> Congress of European Microbiologists (Federation of European Microbiological Society), July 9-13, 2017, Valencia, Spain.
21. Wetzels SU, Mann E, Zebeli Q, Wagner M, **Schmitz-Esser S** (2017). “Metatranscriptome sequencing reveals shifts in the bovine epimural bacterial community composition which are compensated on a functional level”. FEMS 7<sup>th</sup> Congress of European Microbiologists (Federation of European Microbiological Society), July 9-13, 2017, Valencia, Spain.
22. Wetzels SU, Mann E, Wagner M, Zebeli Q, **Schmitz-Esser S** (2017). “The metatranscriptome of the bovine ruminal epimural bacteria”. 6<sup>th</sup> Symposium "Animal Gut Health": Microbiome - The Hidden Player with Great Potentials for Improving Health and Performance, December 6, 2017, Vienna, Austria.
23. Wetzels SU, Petri RM, Pourazad P, Qumar M, Metzler-Zebeli B, Wagner M, **Schmitz-Esser S**, Zebeli Q (2017). “Recovery of the bovine epimural bacterial microbiome from either a continuous or a transient SARA challenge”. 71<sup>st</sup> Conference of the Society of Nutrition Physiology, March 14-16, 2017, Göttingen, Germany.
24. Wetzels SU, Petri RM, Pourazad P, Qumar M, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S**, Zebeli Q (2017). “Illumina MiSeq sequencing reveals effects of a continuous and a transient SARA challenge, followed by a long recovery period, on the bovine epimural bacterial microbiome”. - 71<sup>st</sup> Conference, Society of Nutrition Physiology, March 14-16, 2017, Göttingen, Germany.
25. Wetzels SU, Petri RM, Pourazad P, Qumar M, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S**, Zebeli, Q (2016): “Illumina MiSeq sequencing reveals effects of a continuous and a transient SARA challenge on the bovine epimural bacterial microbiome 6<sup>th</sup> Symposium "Animal Gut Health": Empowering Rumen and Gut Health to improve Health and Productivity on Farm Animals, December 12-12, 2016, Vienna, Austria.
26. Nischler E, Dzieciol M, Mann E, Wagner M, **Schmitz-Esser S** (2016). “Whole genome sequencing and qPCR analysis of *Advenella*, *Psychrobacter* and *Psychroflexus* phylotypes for Austrian raw milk hard cheese rinds during ripening”. 68<sup>th</sup> Annual Meeting of the Germany Society for Hygiene and Microbiology, September, 11-14, 2016, Ulm, Germany.
27. Wetzels SU, Mann E, Pinior B, Metzler-Zebeli B, Wagner M, **Schmitz-Esser S** (2016). “Psychrophile spoilers dominate the bacterial microbiome in musculature samples of slaughter pigs”. 35.

Jahrestagung der Österreichischen Gesellschaft für Hygiene, Mikrobiologie und Präventivmedizin, May 30 - June 2, Zell am See, Austria.

28. Wetzels SU, Mann E, Pourazad P, Kumar M, Piniör B, Metzler-Zebeli B, Wagner M, Klevenhusen F, Zebeli Q, **Schmitz-Esser S** (2016). "Dynamic microbial changes in the rumen of dairy cows during a long-term subacute ruminal acidosis challenge". -35. Jahrestagung der Österreichischen Gesellschaft für Hygiene, Mikrobiologie und Präventivmedizin, May 30 - June 2, Zell Am See, Austria.
29. Rychli K, Müller A, Harter E, Wagner EM, Zaiser A, Wagner M, **Schmitz-Esser S** (2016). "*Listeria monocytogenes* of sequence type 121 harbor specific adaptations supporting persistence in food production plants". EMBO Conference: Problems of Listeriosis ISOPOL XIX, June 14-17, Paris, France.
30. Hund A, Dzieciol M, **Schmitz-Esser S**, Wittek T (2016): "Bacterial Communities Associated With Healthy Abomasal Mucosa And Ulcers In Cattle". 452--World Buiatrics Congress, July, 3-8, 2016, Dublin, Ireland. IN: Doherty, M [Ed.]: Proceedings of the World Buiatrics Congress 2016, (ISBN: 978-1-5262-0432-5 )

#### **Before appointment at ISU**

31. Mann E, Piniör B, Wetzels SU, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S** (2015). "RNA-based amplicon sequencing for investigating the living part of the bacterial microbiome in porcine lymphatic tissues". 5<sup>th</sup> Symposium of Animal Gut Health, November 12, Vienna, Austria.
32. **Schmitz-Esser S**, Dzieciol M, Hund A, Wittek T (2015). "Characterization of mucosa-associated bacterial communities in abomasal ulcers of calves by pyrosequencing". 5<sup>th</sup> Symposium of Animal Gut Health, November 12, 2015, Vienna, Austria.
33. Wetzels SU, Mann E, Pourazad P, Kumar M, Piniör B, Metzler-Zebeli BU, Wagner M, Klevenhusen F, Zebeli Q, **Schmitz-Esser S** (2015). "Dynamic microbial changes in the rumen of dairy cows during a long-term subacute ruminal acidosis". 5<sup>th</sup> Symposium of Animal Gut Health, November 12, Vienna, Austria. 2015.
34. Mann E, Piniör B, Wetzels SU, Metzler-Zebeli B, Wagner M, **Schmitz-Esser S** (2015). „Metabolisch aktive Bakterien in lymphatischen Organen vom Schwein und Potential zur Kontamination von Schweinefleisch“. 56. Arbeitstagung des Arbeitsgebietes Lebensmittelhygiene, Garmisch-Partenkirchen, Germany, September 29 - October 2.
35. Rychli K, Müller A, Ciolacu L, Zaiser A, Wagner M, **Schmitz-Esser S** (2015). "*Listeria monocytogenes* of sequence type 121 harbor specific adaptations supporting persistence in food production plants". FEMS Microbiology Congress 2015, June 7-11, Maastricht, The Netherlands.
36. Mann E, Stouthamer CM, Kelly SE, Hunter MS, **Schmitz-Esser S** (2015). "Genetic basis of cytoplasmic incompatibility (CI) caused by *Cardinium* - transcriptional profiling of a CI-inducing *Cardinium* in male and female parasitoid wasps". -6<sup>th</sup> Congress of European Microbiologists (FEMS), June 7-11, Maastricht, The Netherlands.
37. Mann E, Wagner M, **Schmitz-Esser S** (2015). "Metabolically active bacteria in lymphatic tissues of pigs". 6<sup>th</sup> Congress of European Microbiologists (FEMS), June 7-11, Maastricht, The Netherlands.
38. Muhterem-Uyar M, Wagner M, **Schmitz-Esser S**, Stessl B (2015). "Key features for the adaption and survival of *Listeria monocytogenes* in the food processing environment". 6<sup>th</sup> Congress of European Microbiologists (FEMS), June 7-11, Maastricht, The Netherlands
39. Stessl B, Simmer L, Muhterem-Uyar M, Muri-Klinger S, **Schmitz-Esser S**, Wagner M (2015). "Hygiene barriers in food processing facilities may serve as "trojan horses" for *L. monocytogenes*". 6<sup>th</sup> Congress of European Microbiologists (FEMS), June 7-11, Maastricht, The Netherlands.
40. Stouthamer CM, **Schmitz-Esser S**, Mann E, Hunter M (2015). "Comparative genomics of *Cardinium*: Ascertainning genes underlying symbiont-induced reproductive manipulations". Congress of the Entomological Society of America (ESA), November 15-18, 2015, Minneapolis, MN, USA.
41. Wetzels SU, Mann E, Metzler-Zebeli BU, Wagner M, Klevenhusen F, **Schmitz-Esser S**, Zebeli Q (2015). "Effects of feeding different energy supply on microbiota attached to the rumen wall in goats". 69<sup>th</sup> Conference, Society of Nutrition Physiology, March 10-12, Göttingen, Germany.

42. Metzler-Zebeli BU, **Schmitz-Esser S**, Mann E, Zebeli Q (2015). "Alterations in the cecal bacterial metagenome in response to resistant starch type 4 in growing pigs". 69<sup>th</sup> Conference, Society of Nutrition Physiology, March 10-12, Göttingen, Germany.
43. Mann E, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S** (2014). "Lymphatic tissues of pigs - evidence for metabolically active bacteria and a prediction of their metagenomic capacity". 4<sup>th</sup> Symposium of Animal Gut Health, November 17, 2014, Vienna, Austria.
44. Metzler-Zebeli BU, **Schmitz-Esser S**, Mann E, Zebeli Q (2014). "Does RS4-type resistant starch has prebiotic properties in pigs?" 4<sup>th</sup> Symposium on Animal Gut Health, Nov 17, 2014, Vienna, Austria
45. Muhterem-Uyar M, Wagner M, **Schmitz-Esser S**, Stessl B (2014). "Evolution of *L. monocytogenes* persistence in a food processing environment". -Joint PROMISE and BACFOODNET - International Conference in Vienna, November 17-19, Vienna, Austria.
46. Mann E, Penz T, Siegl A, König L, Horn M, **Schmitz-Esser S** (2014). "Life-cycle dependent transcriptional responses associated with host adaption of *Amoebophilus asiaticus*". -15<sup>th</sup> International Symposium on Microbial Ecology (ISME), August 24-29, Seoul, South Korea.
47. Mann E, Wagner M, **Schmitz-Esser S** (2014). "Metabolically active bacteria in lymphatic tissues of pigs and its spread during slaughter". 15<sup>th</sup> International Symposium on Microbial Ecology (ISME), August 24-29, Seoul, South Korea.
48. **Schmitz-Esser S**, Mann E, Stouthamer CM, Kelly SE, Hunter MS (2014). "Genetic basis of *Cardinium*-caused cytoplasmic incompatibility". 15<sup>th</sup> International Symposium on Microbial Ecology (ISME), August 24-29, Seoul, South Korea.
49. Mann E, Stouthamer CM, Kelly SE, Hunter MS, **Schmitz-Esser S** (2014). "Genetic basis of *Cardinium*-caused cytoplasmic incompatibility". 8<sup>th</sup> International *Wolbachia* Conference, June 6-11, 2014, Igls, Austria.
50. Rychli K, Müller A, Zaiser A, Stessl B, Wagner M, **Schmitz-Esser S** (2014). "Tn6188 - a novel transposon in *Listeria monocytogenes* responsible for tolerance to various quaternary ammonium compounds". FoodMicro, September 1-4, Nantes, France.
51. Schornsteiner E, Mann E, Wagner M, **Schmitz-Esser S** (2014). "Analysis of cheese rind microbial community structure of Austrian alpine hard cheese reveals facility specific and ripening time-dependent dynamics". 24<sup>th</sup> ICFMH Symposium - FoodMicro 2014, September 1-4, Nantes, France.
52. Wetzels SU, Mann E, Metzler-Zebeli BU, Klevenhusen F, Wagner M, Zebeli Q, **Schmitz-Esser S** (2014). "Pyrosequencing reveals shifts in the rumen mucosa-associated bacterial community in goats fed different levels of energy supply". Rowett-INRA 2014 Gut Microbiology: from sequence to function, June 16-19, Aberdeen, Scotland, UK.
53. Dzieciol M, Hund A, Wagner M, Wittek T, **Schmitz-Esser S** (2014). "Comparative study of the microbiome of the abomasum in cattle with or without abomasal ulcers". 4<sup>th</sup> Joint Conference of the German Society for Hygiene and Microbiology (DGHM) and the Association for General and Applied Microbiology (VAAM), Dresden, Germany, October 5-8, 2014. Biospektrum (Sonderausgabe) 145.
54. Muhterem-Uyar M, Wagner M, **Schmitz-Esser S**, Stessl B (2014). "Key features for the adaption and survival of *L. monocytogenes* in the food processing environment". 55<sup>th</sup> Congress of the Section Food Hygiene of the German Veterinarian Association (DVG), September 23-26, Garmisch-Partenkirchen, Germany.
55. Wetzels SU, Mann E, Metzler-Zebeli BU, Wagner M, Klevenhusen F, Zebeli Q, **Schmitz-Esser S** (2014). "Pyrosequencing reveals shifts in the caprine bacterial epimural community relative to dietary energy supply". 4<sup>th</sup> Symposium of Animal Gut Health, November 17, 2014, Vienna, Austria.
56. Klein-Jöbstl D, Drillich M, Schornsteiner E, Wagner M, **Schmitz-Esser S** (2013). "Calves' intestinal tract microbiota during early development". 15<sup>th</sup> International Conference on Production Diseases in Farm Animals, June 24-28, Uppsala, Sweden.
57. Mann E, Dzieciol M, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S** (2013). „Erstmalige Beschreibung des Kernmikrobioms ileocaecaler Lymphknoten bei Schlachtschweinen und Verschiebungen im Mikrobiom assoziiert mit pathologischen Lymphknotenveränderungen“. 54. Arbeitstagung des Arbeitsgebietes Lebensmittelhygiene, Garmisch-Partenkirchen, Germany, September 24-27, 2013. Amtstierärztlicher Dienst und Lebensmittelkontrolle (Sonderausg. 2013)

58. Mann E, Dzieciol M, Metzler-Zebeli BU, Wagner M, **Schmitz-Esser S** (2013). "Microbiome of unreactive and pathologically altered ileocaecal lymph nodes of slaughter pigs". 3<sup>rd</sup> Symposium of Animal Gut Health, November 11, Vienna, Austria.
59. Mann E, **Schmitz-Esser S**, Zebeli Q, Wagner M, Ritzmann M, Metzler-Zebeli B (2013). "Deep sequencing reveals promotion of gastric lactobacilli in weaned pigs by increased dietary calcium-phosphorus levels". Annual conference of the Association for General and Applied Microbiology, Bremen, Germany, March 10-13. Biospektrum (Sonderausgabe) 145-145.
60. Dzieciol M, Mann E, Metzler-Zebeli B, Wagner M, **Schmitz-Esser S** (2013). "Core microbiome of healthy and morphologically altered ileocaecal lymph nodes of slaughter pigs determined by 16S rRNA gene pyrosequencing". Jahrestagung der Vereinigung für Allgemeine und Angewandte Mikrobiologie (VAAM), Bremen, GERMANY, Germany, March 10-13. Biospektrum (Sonderausgabe) 147-147.
61. Mann E, **Schmitz-Esser S**, Zebeli Q, Wagner M, Ritzmann M, Metzler-Zebeli BU (2013). "Pyrosequencing reveals shifts in gut mucosa-associated bacteria linked to dietary calcium-phosphorus in weaned pigs". International Workshop on Nutrition and Intestinal Microbiota-host interaction in the pig, October 24-25, Berlin, Germany. (ISBN: 978-3-00-043962-9 )
62. Metzler-Zebeli BU, Mann E, **Schmitz-Esser S**, Wagner M, Ritzmann M, Zebeli Q (2013). „Alterations in gastro-intestinal bacterial microbiota and fermentation end-products in weaned pigs fed different dietary cereals and CaP levels (Getreideart und der Ca und P-Gehalt der Ration verändern die bakterielle Mikrobiota und Fermentationsendprodukte im Magen-Darm-Trakt beim Absetzferkel)“. 67. Tagung der Gesellschaft für Ernährungsphysiologie/Proceedings of the Society of Nutrition Physiology, March 19-21, Göttingen, Germany.
63. Metzler-Zebeli BU, **Schmitz-Esser S**, Mann E, Wagner M, Ritzmann M, Zebeli Q (2013). „Evaluation of effects among dietary cereals and calcium-phosphorus level on nutrient digestibility and serum parameters in weaned pigs (Evaluierung der Effekte von Getreide und Kalzium-Phosphor-Gehalten in der Ration auf Verdaulichkeit und Serumparameter beim Absetzferkel)“. 67. Tagung der Gesellschaft für Ernährungsphysiologie/Proceedings of the Society of Nutrition Physiology, March 19-21, Göttingen, Germany.
64. Rychli K, Zaiser A, Allerberger F, Schoder D, Wagner M, **Schmitz-Esser S** (2013). "Genome sequencing and virulence analysis of *Listeria monocytogenes* outbreak strains". ISOPOL XVIII - International Symposium on Problems of Listeriosis, September 19-22, Goa, India.
65. **Schmitz-Esser S**, Müller A, Pricope L, Zaiser A, Rychli K, Wagner M (2013). "Comparative genome analyses of persistent *Listeria monocytogenes* strains". ISOPOL XVIII - International Symposium on Problems of Listeriosis, September 19-22, Goa, India.
66. **Schmitz-Esser S**, Schornsteiner E, Muhterem-Uyar M, Stessl B, Wagner M (2013). "Community analysis of *Listeria monocytogenes* -contaminated floor drains by Roche/454 16S rRNA amplicon pyrosequencing". ISOPOL XVIII - International Symposium on Problems of Listeriosis, September 19-22, Goa, India.
67. Schornsteiner E, Muhterem-Uyar M, Stessl B, Wagner M, **Schmitz-Esser S** (2013). „Analyse der mikrobiellen Gemeinschaften in *Listeria monocytogenes* kontaminierten Gullys milchverarbeitender Betriebe mittels Roche/454 16S rRNA Pyrosequenzierung“. 54. Arbeitstagung des Arbeitsgebietes Lebensmittelhygiene, Garmisch-Partenkirchen, Germany, September 24-27. Amtstierärztlicher Dienst und Lebensmittelkontrolle (Sonderausg. 2013)
68. Mann E, **Schmitz-Esser S**, Wagner M, Zebeli Q, Metzler-Zebeli B (2012). "Metagenomic insights into mucosa-associated bacterial community in the gastrointestinal tract of pigs fed cereal based diets with different calcium-phosphorus levels". 2<sup>nd</sup> Symposium of Animal Gut Health, November 12, Vienna, Austria.
69. Rychli K, **Schmitz-Esser S**, Zaiser A, Allerberger F, Schoder D, Wagner M (2012). "Genome sequencing and virulence analysis of *Listeria monocytogenes* outbreak strains". FoodMicro International ICFMH Symposium 2012, September 3-7, Istanbul, Turkey.
70. **Schmitz-Esser S**, Müller AM, Pricope L, Zaiser A, Rychli K, Wagner M (2012). "Comparative genome and proteome analyses of persistent *Listeria monocytogenes* strains". FoodMicro, SEP 3-7, Istanbul, Turkey.

71. Müller A, Wagner M, Walochnik J, **Schmitz-Esser S** (2012). "Interaction of *Listeria monocytogenes* with free-living amoebae". 64<sup>th</sup> Annual Meeting of the German-Society-for-Hygiene-and-Microbiology (DGHM), Hamburg, Germany, September 30 - October 3, Int J Med Microbiol (302), S1 59-59.
72. **Schmitz-Esser S**, Müller A, Allerberger F, Wagner M (2012). "Comparative genome analyses of *Listeria monocytogenes* outbreak strains". 33<sup>rd</sup> Annual Meeting of the Austrian Society of Hygiene, Microbiology and Preventive Medicine (ÖGHMP), May 22-24, 2012, Salzburg, Austria.
73. Müller A, Wagner M, Walochnik J, **Schmitz-Esser S** (2012). "Interaction of *Listeria monocytogenes* with free-living amoebae". Annual Conference of the Association for General and Applied Microbiology (VAAM), March 18 - 21, Tübingen, Germany.
74. Müller A, Wagner M, Walochnik J, **Schmitz-Esser S** (2011). "Interaction of *Listeria monocytogenes* with free-living amoebae". Österreichische Gesellschaft für Tropenmedizin und Parasitologie, November 17 - 19, Vienna, Austria.
75. **Schmitz-Esser S**, Walcher M, Horn A, Horn M, Wagner M (2010). "Interaction of *Listeria monocytogenes* with free-living amoebae". 32<sup>nd</sup> Annual Meeting of the Austrian Society for Hygiene, Microbiology and Preventive Medicine, May 17-20, Vienna, Austria.
76. Penz T, Spang A, Tischler P, Arnold R, Wagner M, Rattei T, **Schmitz-Esser S**, Horn M. (2009). „The genome of the amoeba symbiont ‘*Candidatus Amoebophilus asiaticus*’ shows massive proliferation of IS elements, but no signs of recent transpositional activity”. 6<sup>th</sup> congress of the International Symbiosis Society (ISS), Madison, WI, USA, Aug 2009.
77. **Schmitz-Esser S**, Tischler P, Rattei T, Montanaro J, Wagner M, Horn M. (2008) "The evolution of symbiosis in the phylum *Bacteroidetes* –whole genome analysis of the amoeba symbiont ‘*Candidatus Amoebophilus asiaticus*’". Annual Conference of the Association for General and Applied Microbiology (VAAM), March 9 - 11, Frankfurt, Germany.
78. **Schmitz-Esser S**, Kelly SE, Montanaro J, Wagner M, Hunter MS, Horn M. (2007). "The evolution of symbiosis in the phylum *Bacteroidetes* –whole genome analysis of the symbionts ‘*Candidatus Amoebophilus asiaticus*’ and ‘*Candidatus Cardinium hertigii*’". 10<sup>th</sup> International Colloquium on Endocytobiology and Symbiosis, Gmunden, Austria, September 10-13.
79. **Schmitz-Esser S**, Toenshoff ER, Haider S, Heinz E, Hoenninger VM, Wagner M, Horn M. (2006). "Diversity of bacterial endosymbionts of novel environmental *Acanthamoeba* isolates". 5<sup>th</sup> congress of the International Symbiosis Society (ISS), Vienna, Austria, August 4-10.
80. **Schmitz-Esser S**, Haider S, Toenshoff ER, Heinz E, Hoenninger VM, Stoecker K, Wagner M, Horn M. (2005). "Diversity of bacterial endosymbionts of novel environmental *Acanthamoeba* isolates". 2<sup>nd</sup> Joint Conference of the German Society for Hygiene and Microbiology (DGHM) and the Association for General and Applied Microbiology (VAAM), Göttingen, Germany, September 25-28.
81. **Schmitz-Esser S**, Beier CL, Horn M, Wagner M. (2002). „EDGE - The Environmental Chlamydiae genome project". 54<sup>th</sup> Meeting of the German Society of Hygiene and Microbiology (DGHM). October 6-10, Heidelberg, Germany.

## TRAINING AND MENTORING

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### Supervision of graduate students at Iowa State University

#### Current graduate students

Student	Degree/Date	Major	Role
Koester, Lucas	PhD, expected 2021	Microbiology	Co-Supervisor
Anast, Justin	PhD, expected 2021	Microbiology	Supervisor
Cortes, Bienvenido	PhD, expected 2022	Microbiology	Supervisor
Anderson, Chiron	PhD, expected 2023	Microbiology	Supervisor
Schultz, Dylan	PhD, expected 2025	Microbiology	Supervisor

## Degrees completed

### *Since appointment at ISU*

- **Naditz, Anna, PhD**, Dec. 2019, Microbiology. Thesis: “A Comparative Analysis of *Listeria monocytogenes* Plasmids: Presence, Contribution to Stress and Conservation”. Present position: Corporate Microbiologist Rose Acre Farms, Seymour, IN.

### *Before appointment at ISU. An asterisk (\*) indicates trainees for whom I served as co-advisor.*

- **Pacher, Nicola, BSc**, September 2015. Thesis: “Investigating the contribution of plasmids to stress survival in *Listeria monocytogenes*”. Present position: University of Natural Resources and Life Sciences, Vienna, Austria.
- **Ertl, Daniel, MSc**, August 2015 (Biomedicine and Biotechnology). Thesis: “Comparison of biofilms from different *Listeria monocytogenes* strains and examination of various influencing factors from co-cultured bacteria”. Present position: Radatz GmbH, Vienna, Austria.
- **Müller, Anneliese, PhD**, January 2015 (Life Sciences). Thesis: “Elucidating novel mechanisms of survival of *Listeria monocytogenes* in food production and –processing environments”. Present position: Biomin, Tulln, Austria.
- **Schorsteiner, Elisa\*, Dr. med. Vet.** December 2014 (Veterinary Medicine). Thesis: „Molecular characterization of bacterial communities on “Vorarlberger Berkäse” during its ripening time“. Present position: Pfizer, Austria.
- **Mann, Evelyne\*, PhD**, January 2014 (Veterinary Medicine). Thesis: “Characterization of microbial communities in the gastrointestinal tract and in ileocaecal lymph nodes of pigs”. Present position: Group leader, University of Veterinary Medicine, Vienna, Austria.
- **Vizvari, Fruzsina, Diploma**, October 2013 (Veterinary Medicine). Thesis: “Identification and Characterization of the rumen wall-associated microbiota in the cow in dependence of different nitrogen content in the feed”. Present position: Tierordination Hetzendorf, Vienna, Austria.
- **Zangana, Abdoulla\*, MSc**, January 2012 (Molecular Microbiology and Immune Biology). Thesis: “Charakterisierung der mikrobiellen Flora des Pansenepithels beim Rind in Abhängigkeit von unterschiedlicher Fütterung”. Present position: University of Veterinary Medicine, Vienna, Austria.
- **Wetzels, Stefanie, Diploma**, January 2012 (Veterinary Medicine). Thesis: „Langfristige Effekte unterschiedlicher Energieversorgung auf die pansenassoziierte Mikrobiota bei der wachsenden Ziege “. Present position: Scientist, University of Veterinary Medicine, Vienna, Austria.

### **Hosting of international students and scholars**

- Joel Bayo, graduate student from Uganda (September to October 2019) stayed in my lab to learn microbiome analyses.
- Dr. Bao Yi, Associate Professor, State Key Laboratory of Animal Nutrition, Beijing, China (March 2018 to January 2019) stayed in my lab to learn microbiome analyses.
- Narciso Quijada, Instituto Tecnológico Agrario de Castilla y León (ITACyL), Spain, PhD student, (June to August 2018) to work on rumen wall metatranscriptomics and sheep microbiota.

## Member of graduate student POS committees at ISU

### *In progress*

- |   |                                    |
|---|------------------------------------|
| 1. Lee, Conard, PhD, Microbiology.                                    | Major Professor: Larry Halverson   |
| 2. Redweik, Graham, PhD, Microbiology.                                | Major Professor: Melha Mellata     |
| 3. Jantzi, Abigail, PhD, Animal Science.                              | Major Professor: James Koltes      |
| 4. Wiersema, Maddison, M. S., Animal Science.                         | Major Professor: Dawn Koltes       |
| 5. Villageliu, Daniel, PhD, Microbiology.                             | Major Professor: Mark Lyte         |
| 6. Kiefer, Zoe, M. S., Animal Science.                                | Major Professor: Jason Ross        |
| 7. Maki, Joel, PhD, Microbiology.                                     | Major Professor: Torey Looft       |
| 8. Grimsley, Malissa, M. S., Microbiology.                            | Major Professor: Alexandra Scupham |
| 9. Bera, Abesh, PhD, Microbiology.                                    | Major Professor: Mohan Gupta       |
| 10. Contreras-Ramos, Moises, PhD, Chemical and Biological Engineering | Major Professor: Tom Mansell       |
| 11. McGuire, Bailey, PhD, Toxicology                                  | Major Professor: Aileen Keating    |

### *Completed*

1. Backes, Nicholas, PhD, Microbiology. Graduation: July 2020. Major Professor: Gregory Phillips
2. Fries-Craft, Krysten, M.S., Animal Science. Graduation: July 2019. Major Professor: Elizabeth Bobeck
3. Wickramasinghe, Janaka, M. S., Animal Science. Graduation: June 2019. Major Professor: Ranga Appuhamy

## Undergraduate student research assistants at ISU (n=10)

- Dylan Schultz
- Alysha Harless
- Olivia Cool
- Leonora James
- Scott Starr
- Braden Weiser
- Madison Durflinger
- Faith Seggerman
- Kathryn Klages
- Ashlyn Bellman

## TEACHING EXPERIENCE

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### Iowa State University

- **Micro 440** (4 credits). Fall 2019, Spring 2020. This is the major lab class for microbiology seniors. I am responsible for one five-week module of this class. Co-instructors: Larry Halverson, Greg Phillips.
- **Micro 556** (1 credit). Spring 2020. "Microbial Ecology and Environmental Monitoring". This is part of the required classes for the ISU microbiology graduate students.
- **Micro 604** (1 credit). Fall 2019. This is the required seminar class for ISU microbiology graduate students.
- **ANS 658** (1 credit). Spring 2019. "Seminar Animal Breeding and Genetics". Coordinator of the required seminar for the Animal Breeding and Genetics graduate students.
- **Micro 450** (2 credits). Spring 2017 to Spring 2019. This is the capstone seminar class for microbiology seniors.

### Guest lectures at ISU:

- **AN S 520** Special topics in ruminant nutrition: Spring 2020.
- **FSHN 517** Gut Microbiome: Implications for health and disease: Fall 2017 to Fall 2019.

- **Preparing Future Faculty (PFF) program:** Fall 2019. I served on a panel on “Expectations at International Institutions”
- **ANS 501** Survey of Animal Disciplines: Fall 2017 to Fall 2019.
- **ANS 210** Career preparation in Animal Science: Fall 2018.
- **FSHN 489** Issues in Food safety: Spring 2017 and 2018.

#### **University of Veterinary Medicine Vienna, Austria**

- Lab course (3 credits) “Quality assurance and risk assessment of food products”. Spring 2012 to Spring 2015. This is a lab class within the Veterinary Medicine Curriculum which focuses on chemical and microbiological analyses of milk and dairy products.

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#### **PROFESSIONAL SERVICE**

##### **Departmental service**

1. Chair of Preliminary Evaluation committee Dr. Nick Serão (2020)
2. Member of Preliminary Evaluation committee Dr. James Koltes (2020)
3. Supervisory committee Microbiology Undergraduate Program (2016 to present)

##### **University service**

1. Interdepartmental Microbiology Graduate Program, Chair: (2020 – present)
2. Interdepartmental Microbiology Graduate Program, Associate Chair (summer 2018 – summer 2020)
3. Admissions committee Interdepartmental Microbiology Graduate Program, Chair (summer 2017 - summer 2018)

##### **Scientific community service**

- 2019: Served as external reviewer for the PhD thesis Narciso Quijada, graduate student from the Instituto Tecnológico Agrario de Castilla y León (ITACyL), Spain.
- Participation in workshop “Genome to Phenome: Improving Animal Health, Production, and Well-Being – A New USDA Blueprint for Animal Genome Research 2018–2027”. Beltsville, MD, November 2017.

##### **Invited reviewer for scientific journals (IF denotes 2019 journal impact factor)**

- Microbiome (IF 11.6), Comprehensive Reviews in Food Science and Food Safety (IF 9.9), ISME Journal (IF 9.2), Cell Reports (IF 8.1), Gut Microbes (IF 7.7), mBio (IF 6.8), mSystems (IF 6.6), Bioinformatics (IF 5.6), Environmental Microbiology (IF: 4.9), International Journal of Food Microbiology (IF 4.2), Food Microbiology (IF 4.2), Journal of Animal Science and Biotechnology (IF 4.2), Frontiers in Microbiology (IF 4.2), Applied and Environmental Microbiology (IF 4.0), Scientific Reports (IF 4.0), FEMS Microbiology Ecology (IF 3.7), BMC Genomics (IF 3.6), Applied Microbiology and Biotechnology (IF 3.5), British Journal of Nutrition (IF 3.3), Journal of Dairy Science (IF 3.3), BMC Microbiology (IF 3.0), PLoS One (IF 2.8).

##### **Ad-hoc reviewer for granting agencies**

- 2020: Fund for Scientific Research – FNRS, Belgium
- 2017, 2019: BARD - The US-Israel Agricultural Research & Development Fund
- 2018: BCRC – Beef Cattle Research Council, Canada
- 2016: Federal Ministry of Education and Research (BMBF), Germany
- 2016: National Science Center (NCN), Poland

**Synergistic and interdisciplinary activities**

- Co-organizer, Joint Conference PROMISE and BacFood Net: Persistent lifestyles of food-borne pathogens and its consequence. Austrian Agency for Health and Food Safety, Vienna, Austria, November 2014 (Attendance approximately 120)
- 2012 – 2014: Task leader COST Action FA1202 “A European Network for Mitigating Bacterial Colonisation and Persistence on Foods and Food Processing Environments”
- Co-organizer, International Workshop on New Techniques in Microbial Ecology (INTIME-7), Lackenhof, Austria, August 2009 (Attendance approximately 80).