JSMC Jena School for Microbial Communication
Graduate School of Excellence

Lena Gauthier

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Title PhD Project:
Optimization of super-resolution microscopy for the determination of optimal therapeutic treatment conditions for viral and bacterial co-infections

Main Research Interests

- Influenza A virus (IAV) and *Staphylococcus aureus* co-infection of the lung
- Exploration of different treatment conditions for IAV and *S. aureus* co-infections, e.g. combinatory antiviral and antibiotic therapies
- Alveolus-on-the-chip as model
- Application of super-resolution microscopy in order to determine effects of antiviral and/or antibiotic therapies

Methodological Experiences

- IAV and *S. aureus* co-infection in cell culture and the alveolus-on-chip model
- Viral/bacterial titration, EC_{50} determination
- Fluorescence microscopy, super-resolution microscopy
- DNA/RNA extraction, gel electrophoresis, cloning, genotyping, PCR, qPCR, iPCR, linker-PCR, Southern blot, ChIP
- Expression and purification of recombinant proteins, protein extraction, Western Blot, ELISA
- Phage display
- CRISPR/Cas9 applications

Curriculum Vitae

01/2020 – present **PhD student**
Department “Biophysical Imaging”, Leibniz Institute of Photonic Technology &
Section “Experimental Virology”, Jena University Hospital

03/2018 – 10/2019 **Research Associate**
Department of Genetics, Friedrich Schiller University Jena

04/2019 – 07/2019
Basic certificate *“Grundlagen der Hochschuldidaktik”*
Servicestelle LehreLernen, Friedrich Schiller University Jena

10/2017 – 02/2018 **Lectureship on “Current issues of Developmental Genetics”**
Faculty of Biological Sciences, Friedrich Schiller University Jena

10/2014 – 07/2017 **M.Sc. Biochemistry** at Friedrich Schiller University Jena
Degree: Master of Science (1,3)

05/2016 – 07/2017
Master thesis
“Functional analysis of the ncRNA:DNA triplex at the *Kras* gene promoter"
Center for Molecular Biomedicine, Friedrich Schiller University, Research group “Epigenetics of Aging”, Supervision by Dr. Holger Bierhoff

09/2014 – 12/2015
Research assistant
Department of Genetics, Friedrich Schiller University Jena

10/2010 – 09/2014 **B.Sc. Biochemistry** at Free University Berlin
Degree: Bachelor of Science (1,2)

08/2013 – 10/2013
DAAD RISE Worldwide scholarship
“Substrate specificity of three DsbA-like proteins from *Salmonella enterica* serovar Typhimurium”
La Trobe Institute for Molecular Science, La Trobe University Melbourne, Australia, Research Group “Bacterial virulence factors: structure and function”, Supervision by Prof. Dr. Begoña Heras

04/2013 – 07/2013
Bachelor thesis
"Effekte eines neuen Hemmstoffs von AKAP-Lbc auf die Zellproliferation"
Max Delbrück Center for Molecular Medicine Berlin-Buch, Research group „Anchored Signalling“, Supervision by PD Dr. Enno Klußmann