

PAULA SCHULTHEISS

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EDUCATION AND RESEARCH EXPERIENCE

Columbia University in the City of New York, New York, US Ph.D. candidate, <i>Biomedical Engineering</i> (GPA 3.9/4.0) Graduate research assistance, Microscale Biocomplexity lab (Advisor: Dr. Lance Kam)	Expected Spring 2025
RWTH Aachen University, Aachen, Germany Master of Science, <i>Molecular and Applied Biotechnology</i> (GPA 1.1/1.0, 'mit Auszeichnung') Master thesis "Development of endothelialized channels for the advancement of a cardiac microphysiological system used as a drug screening platform", Biomaterials & Tissue Engineering lab, UC Berkeley (Mark 1.0) (Advisor: Dr. Kevin Healy) <ul style="list-style-type: none">Developed a differentiation approach to derive vessel-specific venous or arterial endothelial cells from human induced pluripotent stem cellsDeveloped a parallel-plate flow chamber to investigate cell behavior under fluid flow with linearly increasing wall shear stress (WSS); Investigated the influence of the substrate, extracellular matrix coating, seeding density and cell source on endothelial cell adhesionAdvanced a cardiac microphysiological system (MPS) by integrating endothelial cells under fluid flow	August 2020
University of California, Berkeley, US Master of Engineering, <i>Bioengineering and Biomedical Engineering</i> (GPA 4.0/4.0) Capstone project "Brain cell rejuvenation by electromagnetic field therapy", <i>Project management and scientific lead</i> (Advisor: Dr. Syed Hossainy, Dr. Irina Conboy, Dr. Michael Conboy) <ul style="list-style-type: none">Developed a novel, non-invasive therapy solution for reducing the infarct growth after a thrombectomyTested the growth rate and ROS production of human neurons and rat neural progenitor cells after hypoxia and electromagnetic field exposureMEng Alumni Award for the Most Innovative Project	May 2019
RWTH Aachen University, Aachen, Germany Bachelor of Science, <i>Molecular and Applied Biotechnology</i> (GPA 1.4/1.0) Bachelor thesis „Site-directed mutagenesis and flow cytometrical epitope analysis of the apical membrane antigen 1“ at Fraunhofer Institute for Molecular Biology and Applied Ecology IME, Aachen (Mark 1.1) <ul style="list-style-type: none">Developed a novel system combining site-directed mutagenesis, mammalian surface display and indirect immunostaining with flow cytometry for fine-mapping antibody-antigen interactionsIdentified several amino acids of the antigen to help develop a therapeutic application of the antibody	Sept. 2017
Technical University of Munich, Munich, Germany Bachelor of Science, <i>Bioprocess Engineering</i> (GPA 1.3/1.0)	Oct. 2014 - Sept. 2015

SKILLS

- Mammalian cell and stem cell culture, site-directed mutagenesis, polymerase chain reaction (PCR), digital droplet PCR (ddPCR), reverse transcription PCR (RT-PCR) barcode sequencing, pyrosequencing, immunostaining, flow cytometry (FACS), immunoblotting, fermentation techniques
- Microfabrication, microfluidics, rheology
- Finite element modeling (FEM), AutoCAD, Python, Matlab, R

WORK EXPERIENCE AND INTERSHIPS

Aachen Chemical Engineering Institute of the RWTH Aachen University, Department for Biochemical Engineering, <i>Scientific internship</i> <ul style="list-style-type: none">Comparing and optimizing growth rate and productivity of fed-batch vs. batch processes in microtiter plates	Jun. 2019- Aug. 2019
Helmholtz-Institute for Biomedical Engineering of the RWTH Aachen University, Department for Stem Cell Biology and Cellular Engineering, <i>Scientific internship</i> <ul style="list-style-type: none">Developed epigenetic ageing signatures for humans and mice based on DNA methylation patterns based only on six CpGs for human respectively only three CpGs for mice	Apr. 2018 - Jun. 2018

Fraunhofer Institute for Molecular Biology and Applied Ecology IME , Aachen, <i>Research assistant</i>	Jun. 2017 - Jun. 2018
Medigene AG , Munich, Germany, <i>Scientific internship</i>	Feb. 2015 - Mar. 2015
<ul style="list-style-type: none"> Worked with engineered lymphocyte receptors, therapeutic antibodies, cellular tools and technologies 	
Institute of Neurobiology Free University of Berlin , <i>Student internship</i>	Jan. 2012

AWARDS

Otto Bayer Scholarship by the Bayer Foundation (September 2019), MEng Alumni Award for Most Innovative Project (May 2019), Medical Engineering Award by "Stiftung Familie Klee" (June 2018), Admission to the Dean's List of RWTH Aachen University (December 2016, January 2018), Stipendiary of the German Academic Scholarship Foundation (since April 2017)

EXTRACURRICULAR ACTIVITIES

Vaccination administration at New York Presbyterian (NYP) , <i>Volunteer</i>	Since Jan. 2021
Columbia's Graduate Organization of Biomedical Engineers (GoBME) , <i>International students chair</i>	Since Dec. 2020
Women in Science at Columbia (WISC) , <i>Digital chair</i>	Since Sept. 2020
Rasche Transformation GmbH , <i>Co-Founder and Head of Marketing</i>	Since Dec. 2018
Berlin Philharmonics , <i>Solo stage performance</i>	April 2013
<ul style="list-style-type: none"> Performing under the direction of Sir Simon Rattle in Benjamin Britten's „Noahs Flood“ as Mrs. Sem 	
Deutsche Oper Berlin , <i>Member of the children's chorus</i>	Sept. 2008 - April 2014
<ul style="list-style-type: none"> Performing over 700 shows: Carmen, Tosca, Parsifal, La Bohème, Frau ohne Schatten, Turandot, Nussknacker, Hänsel und Gretel, Otello, Das schlaue Fuchslein, and others 	