
Résumé

Prof. Dr. Marc Erhardt

Humboldt-Universität zu Berlin

Philippstr. 13, 10115 Berlin

✉ marc.erhardt@hu-berlin.de

☎ +49 30 2093 49780

🌐 www.baktphys.hu-berlin.de

🐦 Salmo_Lab



Academic career

- 2017– present Associate professor (W2) for Bacterial Physiology – Humboldt-Universität zu Berlin
- 2013– 2017 Principal investigator of an independent junior research group – Helmholtz Centre for Infection Research, Braunschweig
- 2011– 2013 Postdoctoral researcher – Université de Fribourg, Switzerland

Awards, major grants and prizes

- 2021– 2026 *Max Planck Fellow* at the Max Planck Unit for the Science of Pathogens
- 2020– 2025 European Research Council (ERC) Consolidator Grant *BacNanoMachine*
- 2018 Forschungspreis of the German Association for General and Applied Microbiology (VAAM)
- 2013– 2017 Helmholtz Young Investigator Grant
- 2012– 2013 Marie Curie International Incoming fellowship
- 2012 Elisabeth-Gateff-Prize of the German Genetics Society
- 2011 EMBO Long-Term fellowship [declined]
- 2007– 2010 Boehringer Ingelheim Fonds Ph.D. fellowship
- 2010 DeLill Nasser Award of the Genetics Society of America
- 2005– 2007 Studienstiftung des Deutschen Volkes scholarship

Education and PhD

- 2007– 2011 PhD student – Heidelberg University, Germany; University of Konstanz, Germany; University of Utah, USA; Université de Fribourg, Switzerland
- 2011 PhD thesis – University of Konstanz, Germany [SUMMA CUM LAUDE]
- 2002– 2006 Studies of Biology – Ulm University and University of Konstanz, Germany

Five selected publications (54 total)

ORCID: 0000-0001-6292-619X

1. S Hüsing, M Halte [...] M Erhardt, TT Renault. *Control of membrane barrier during bacterial type-III protein secretion*. **Nature Communications** (2021) vol. 12, 3999
2. M Santiveri, A Roa-Eguiara, C Kühne, N Wadhwa, HC Berg, M Erhardt, NMI Taylor. *Structure and function of stator units of the bacterial flagellar motor*. **Cell** (2020) vol. 183, 244-257.e16
3. J Horstmann, M Lunelli [...] M Kolbe, M Erhardt. *Methylation of Salmonella Typhimurium flagella promotes bacterial adhesion and host cell invasion*. **Nature Communications** (2020) vol. 11, 2013
4. I Spöring, VA Martinez [...] Y Dufour, M Erhardt. *Hook length of the bacterial flagellum is optimized for maximal stability of the flagellar bundle*. **PLOS Biology** (2018) 16:(9) e2006989
5. TT Renault, AO Abraham [...] T Minamino, M Erhardt. *Bacterial flagella grow through an injection-diffusion mechanism*. **eLife** (2017) 10.7554/eLife.23136

CURRICULUM VITAE

Marc Erhardt, Prof. Dr.
(*26.08.1981, married, two children)

Humboldt-Universität zu Berlin
Institute of Biology – Bacterial Physiology
Philippstr. 13 - Haus 22
10115 Berlin
Germany
☎ +49 30 2093 49780
✉ marc.erhardt@hu-berlin.de

🌐 www.baktphys.hu-berlin.de
🐦 Salmo_Lab

Private address:
Bahnhofstr. 3c
13127 Berlin
☎ +49 30 6295 3745
☎ +49 172 376 4980
✉ marc.erhardt@gmail.com

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1 Curriculum vitae

1.1 Academic career

- 2017–present **Humboldt-Universität zu Berlin, Germany**
Associate professor (W2) for Bacterial Physiology
- 2021 **Universität Hohenheim, Germany**
Full professorship (W3) offer at the Institute for Biology
DECLINED
- 2013–2017 **Helmholtz Centre for Infection Research, Braunschweig, Germany**
Principal investigator of an independent junior research group
FUNDED BY A 5-YEAR HELMHOLTZ YOUNG INVESTIGATOR GRANT
- 2011–2013 **Département de Médecine, University of Fribourg, Switzerland**
Postdoctoral researcher
FUNDED BY A MARIE CURIE INTERNATIONAL INCOMING FELLOWSHIP
- 2007–2011 **Zentrum für Molekulare Biologie (ZMBH), Heidelberg University and University of Konstanz, Germany; University of Utah, USA; University of Fribourg, Switzerland**
PhD student
FUNDED BY A PHD FELLOWSHIP OF THE BOEHRINGER INGELHEIM FONDS
- 2006 **University of Utah, USA**
Undergraduate researcher
FUNDED BY A RESEARCH ABROAD FELLOWSHIP OF THE STUDIENS-TIFTUNG DES DEUTSCHEN VOLKES
- 2005–2006 **University of Konstanz, Germany**
Undergraduate researcher

1.2 Education and PhD

- 2011 **Ph.D. (Dr. rer. nat.) – University of Konstanz, Germany**
Ph.D. thesis research performed at the Heidelberg University, Germany, University of Utah, USA and University of Fribourg, Switzerland
FINAL GRADE: *summa cum laude* (*excellent*)
- 2002–2006 **M. Sc. (Dipl. Biol.) – University of Konstanz, Germany**
Studies of Microbiology and Biochemistry at the Ulm University and the University of Konstanz, Germany
Diploma thesis research performed at the University of Utah, USA.
FINAL GRADE: *sehr gut* (*excellent*)

1.3 Awards and prizes

Awards and prizes

2021–2026	<i>Max Planck Fellow</i> at the Max Planck Unit for the Science of Pathogens (0.5M €)
2020–2025	European Research Council (ERC) Consolidator Grant <i>BacNanoMachine</i> (1,934M €)
2018	Research prize (Forschungspreis) of the Vereinigung für Allgemeine und Angewandte Mikrobiologie (German Association for General and Applied Microbiology)
2013–2017	Helmholtz Young Investigator grant (1,25M €)
2012	Elisabeth-Gateff-Prize of the Gesellschaft für Genetik (German Genetics Society) for a distinguished Ph.D. thesis
2010	DeLill Nasser Award for Professional Development in Genetics (Genetics Society of America)
2005–2007	Studienstiftung des deutschen Volkes (German National Academic Foundation) scholarship
2001	Karl-von-Frisch-Prize for 'Ausgezeichnete Leistungen im Fach Biologie'

1.4 Third-party funding

Major grants

Funding period	Funding organization and project description	Funding [€]
2020–2025 (60 months funding)	European Research Council (ERC) Consolidator Grant no. 864971 (<i>BacNanoMachine</i>) of the Horizon 2020 Framework Programme	1,934,950
2020–2025 (60 months funding)	VolkswagenStiftung 'Life? – A Fresh Scientific Approach to the Basic Principles of Life' consortium grant [in collaboration with Haralampos Hatzikirou (Khalifa Universität, Abu Dhabi, UAE/ TU Dresden), Ioannis Mitroulis (Democritus University of Thrace, Greece), Nir Friedman, (Weizmann Institute, Israel), Massimo Locati (Milan University, Italy)]	240,000 [total grant 1,499,700]
2019–2022 (36 months funding)	Deutsche Forschungsgemeinschaft (DFG) research grant no. ER 778/5-1	224,950
2019	Deutsche Forschungsgemeinschaft (DFG) large equipment grant no. INST 276/760-1 for the procurement of a superresolution stimulated emission-depletion (STED) microscope	400,000 [DFG contribution of a total of 800,000]
2017–2020 (42 months funding)	Deutsche Forschungsgemeinschaft (DFG) research grant no. ER 778/2-1	205,150
2017–2019 (24 months funding)	Boehringer Ingelheim Foundation (BIF) Exploration grant	80,000
2013–2017 (48 months funding)	European Union's Seventh Framework Programme Marie Curie Career Integration grant 'SalmoVir' REA no. 334030	100,000

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Funding period	Funding organization and project description	Funding [€]
2013–2017 (60 months funding)	Helmholtz Young Investigator grant no. VH-NG-932 of the Initiative and Networking Fund of the HGF and the HZI	1,250,000
2012–2013 (24 months funding)	Marie Curie International Incoming Fellowship 'ConoTox' REA no. 300718	184,709
2011 (12 months funding)	EMBO Long-Term Fellowship [declined]	59,480 CHF
2007–2010 (36 months funding)	Boehringer Ingelheim Fonds Ph.D. fellowship	65,000

Minor grants and investment funding

Funding period	Funding organization and project description	Funding [€]
2021	Humboldt-Universität zu Berlin investment funding	570,000
2020 –2021	National University of Singapore/Berlin University Alliance seed grant funding	25,800
2017+2018	Humboldt-Universität zu Berlin ERC seed grant funding	50,000
2017	Humboldt-Universität zu Berlin investment funding	500,000
2017–2018 (12 months funding)	Helmholtz Institute for RNA-based Infection Research (HIRI) seed grant	100,000
2014–2015 (18 months funding)	HZI Graduate school PhD fellowship	27,000
2013 –2014 (18 months funding)	HZI Graduate school PhD fellowship	27,000
2013–2017 (48 months funding)	HZI contribution to the Marie Curie Career Integration grant	40,000
2013–2017 (60 months funding)	HZI investment funding	120,000
2012	University of Fribourg 'Forschungsfond' grant	4,910 CHF
2012	Département de Médecine, University of Fribourg intramural research funding	9,000 CHF
2008+2010	Boehringer Ingelheim Fonds travel grant	1,335+1,765
2006 (6 months funding)	Studienstiftung des deutschen Volkes research abroad fellowship	4,030

Grants awarded to group members

Funding period	Funding organization and project description	Funding [€]
2019–2023 (42 months funding)	German Egyptian Research Longterm Scholarship Program (GERLS) fellowship awarded to PhD student Doaa Saleh	42,000
2019	German Academic Exchange Service (DAAD) travel grant awarded to postdoctoral researcher Caroline Kühne	2,000
2018–2019 (6 months funding)	Humboldt Research Track Scholarship awarded to Master student Svenja Hüsing	4,800
2017	HZI Paper-of-the-month prize awarded to Dr. Thibaud Renault	
2016–2018 (36 months funding)	Alexander-von-Humboldt Fellowship awarded to postdoctoral fellow Dr. Thibaud Renault	94,400
2015	Boehringer Ingelheim Fonds travel grant awarded to PhD student Imke Spöring for a collaborative project at Umeå University	2,370
2014	Boehringer Ingelheim Fonds travel grant awarded to PhD student Julia Deditius for a collaborative project at the University of Edinburgh	700

1.5 Professional qualifications and activities

2022	Organizer of the 4th VAAM discussion meeting 'Microbial Cell Biology 2020', Berlin
since 2021	Elected member of the steering committee of the Institute of Biology, Humboldt-Universität zu Berlin
since 2021	Member of the review committee of the Faculty of Life Sciences for special merit awards, Humboldt-Universität zu Berlin
since 2020	Member of the examination committee of the Institute of Biology, Humboldt-Universität zu Berlin
2017–2020	Scientific Advisory Board member, T3S Technologies, Inc., 36 S. Wasatch Drive, SMBB Box 3, Salt Lake City, Utah 84112, USA
2014	Organizer of the international North Regio Day on Infection (NoRDI V) meeting at the Helmholtz Centre for Infection Research
2014	Helmholtz Management Academy program 'Leading your group' for young investigator group leaders
2013	Young investigator group leader workshop 'Wirksame Führung' of the Helmholtz Management Academy
2012	Project manager according to the gene technology act (§15 GenTSV), University of Freiburg

1.6 Additional information

Professional affiliations

since 2014	German Association of University Professors and Lecturers (DHV)
since 2014	German Society for Hygiene and Microbiology (DGHM)
since 2014	German Association for General and Applied Microbiology (VAAM)
2012–2017	German Genetics Society (GfG)

Peer-review activities

e.g. Agence Nationale de la Recherche (ANR), Biotechnology and Biological Sciences Research Council (BBSRC), eLife, FEMS Microbiology Reviews, Israel Science Foundation (ISF), mBio, Molecular Microbiology, National Science Foundation (NSF), Nature Microbiology, Nature Communications, PLoS Genetics, PLoS Pathogens, PLoS Biology, Proceedings of the National Academy of Sciences of the United States of America (PNAS), Robert-Koch-Institute (RKI), The EMBO Journal

1.7 Invited talks and selected conference activities

Invited talks

- 2022
(forthcoming) Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, USA (HOST: LIONELLI BOSSI)
- 2021 Flagella symposium, on-line meeting of the Japanese Society for Bacteriology (HOST: TOHRU MINAMINO)
- 2020 German Centre for Infection Research, Summer School on Infection Research, Bad Harzburg, Germany (HOST: SABINE KIRCHHOFF, CANCELED DUE TO COVID-19)
- 2019 University of Potsdam, Germany (HOST: CARSTEN BETA)
- 2019 European Commission, Brussels, Belgium (HOST: ERC SELECTION COMMITTEE)
- 2019 The Hebrew University of Jerusalem, Israel (HOST: ILAN ROSENSHINE)
- 2018 European Commission, Brussels, Belgium (HOST: ERC SELECTION COMMITTEE)
- 2018 GZMB Colloquium University of Göttingen, Göttingen, Germany (HOST: FABIAN M. COMMICHAU)
- 2018 SFB seminar, University of Marburg, Marburg, Germany (HOST: ERHARD BREMER, SFB 987)
- 2017 Boehringer Ingelheim, Hannover, Germany (HOST: THOMAS ARNOLD)
- 2017 EMBL, Heidelberg, Germany (HOST: EMBO YOUNG INVESTIGATOR COMMITTEE)
- 2017 Max-Planck-Institute for Infection Biology, Berlin, Germany (HOST: EMMANUELLE CHARPENTIER)
- 2017 WCMM Minisymposium, Umeå University, Umeå, Sweden (HOST: WALLENBERG CENTRE FOR MOLECULAR MEDICINE)
- 2017 University of Bristol, Faculty of Biomedical Sciences, Bristol, UK (HOST: GEORGE BANTING)
- 2016 Mancho Graduate School 'Molecules of Infection' symposium, Geldern, Germany (HOST: MANCHOT GRADUATE SCHOOL)
- 2016 Humboldt-Universität zu Berlin, Berlin, Germany (HOST: REGINE HENGGE)
- 2016 Trinity College Dublin, Ireland (HOST: CARSTEN KRÖGER)
- 2016 University of Utah, Salt Lake City, USA (HOST: KELLY HUGHES)
- 2015 IST Austria, Vienna, Austria (HOST: CALIN GUET)
- 2015 The University of Southern Denmark, Odense, Denmark (HOST: OLE NØRREGAARD JENSEN)
- 2015 Imperial College, London, UK (HOST: MORGAN BEEBY)
- 2015 FOM Institute for Atomic and Molecular Physics (AMOLF), Amsterdam, The Netherlands (HOST: TOM SHIMIZU)
- 2014 International Graduate School GRK 1409, University of Münster, Germany (HOST: ALEXANDER SCHMIDT)
- 2014 Roche Diagnostics Germany, Penzberg, Germany (HOST: ERHARD FERNHOLZ)
- 2014 University of Göttingen, Institute for Theoretical Physics, Germany (HOSTS: CLAUS HEUSSINGER, CHRISTOPH SCHMIDT)
- 2014 University of Veterinary Medicine Hannover (HOST: PABLO STEINBERG)
- 2014 Robert Koch Institute, Wernigerode, Germany (HOST: ROMAN GERLACH)
- 2014 Microbiology Colloquium, Interfaculty Institute of Microbiology and Infection Medicine (IMIT), Eberhard Karls University Tübingen, Germany (HOST: SAMUEL WAGNER)
- 2013 Helmholtz-Institute for Pharmaceutical Research Saarland (HIPS), Department of Drug Delivery, Saarland University, Saarbrücken, Germany (HOST: CLAUD-MICHAEL LEHR)

- 2013 SFB seminar, University of Osnabrück, Osnabrück, Germany (HOST: SFB 944)
- 2012 University of Bristol, Schools of Cellular & Molecular Medicine, Bristol, UK (HOST: ARIEL BLOCKER)
- 2012 Helmholtz Center for Infection Research, Braunschweig, Germany (HOST: DIRK HEINZ)
- 2011 Max-Planck-Institute for Infection Biology, Berlin, Germany (HOST: MICHAEL KOLBE)
- 2011 University of Padua, Department of Biomedical Sciences, Padua, Italy (HOST: CESARE MONTECUCCO)

Selected conference activities

- 2019 Symposium of the Berlin Institute for Medical Systems Biology, Berlin, Germany (INVITED TALK)
- 2019 Symposium of the German-Israeli Helmholtz Research School 'Frontiers in Cell Signaling and Gene Regulation' (SignGene), Nahsholim, Israel (INVITED TALK)
- 2019 Symposium on 'Quantitative Bacterial Cell Biology', Institut Pasteur, Paris, France (INVITED TALK)
- 2018 VAAM 3rd Discussion Meeting 'Microbial Cell Biology', Castle Rauischholzhausen, Germany (INVITED TALK)
- 2018 FEMS meeting on 'Bacterial protein export', Leuven, Belgium (INVITED TALK)
- 2018 Annual Conference 2018 of the Association for General and Applied Microbiology (VAAM), Wolfsburg, Germany (INVITED TALK)
- 2017 22nd Flagella meeting 2017, Okinawa, Japan (INVITED TALK)
- 2017 BLAST XIV (Bacterial Locomotion and Signal Transduction) meeting in New Orleans, USA (INVITED SHORT TALK)
- 2016 5th ASM Conference on *Salmonella* 2016, Potsdam, Germany (INVITED SHORT TALK)
- 2016 International Type III Secretion Systems meeting 2016, Tübingen, Germany (INVITED TALK)
- 2016 Annual Conference 2016 of the Association for General and Applied Microbiology (VAAM), Jena, Germany (INVITED SHORT TALK)
- 2015 67th Annual Meeting of the German Society of Hygiene and Microbiology (DGHM), Münster, Germany (INVITED SHORT TALK)
- 2015 6th Congress of European Microbiologists (FEMS 2015), Maastricht, The Netherlands (INVITED SHORT TALK)
- 2015 BLAST XIII (Bacterial Locomotion and Signal Transduction) meeting in Tucson, Arizona, USA (INVITED SHORT TALK)
- 2014 DGHM/VAAM Symposium 'Microbial Pathogenicity', Bad Urach, Germany (INVITED TALK)
- 2012 43rd Annual Meeting of the German Genetics Society, Essen, Germany (INVITED TALK)
- 2010 16th Flagella meeting in Gamagori, Aichi, Japan (INVITED TALK)
- 2010 Gordon Research Conference, Ventura, California, USA (INVITED SHORT TALK)

2007 – 2021

BLAST XVI (Bacterial Locomotion and Signal Transduction) 2021; GRC 'Sensory Transduction In Microorganisms' 2020, VAAM 32nd Symposium 'Mechanisms of Gene Regulation' 2018; DGHM/VAAM Symposium on 'Microbial Pathogenicity' 2018; Bacterial Networks (BACNET) 2017; DGHM 2016; 5th ASM Conference on '*Salmonella*' 2016; Gordon Research Conference (GRC) 'Sensory Transduction In Microorganisms' 2016; Annual Meeting of the Nordic Society of Clinical Microbiology and Infectious Diseases (NSCMID) 2015; Bacterial Networks (BACNET) 2015; VAAM 2015; 7. Sino-German Frontiers of Science Symposium 2014; EMBL Symposium 'New Approaches and Concepts in Microbiology' 2013; 4th ASM Conference on '*Salmonella*' 2013; BLAST XII 2013; Mol Micro Meeting 2012; FASEB Summer Research Conference 'Protein folding in the Cell' 2008; BLAST IX 2007

2 Teaching portfolio

2.1 Teaching statement

As a teacher and mentor, the most important aim of my teaching is to create curiosity and enthusiasm, but also to encourage active participation and train critical scientific thinking.

Clearly, those aspects are intimately linked as scientific thinking needs to be based on solid background knowledge, but knowledge alone is not sufficient to do good science. In my teaching, I try to balance both aspects. In lectures, I aim to stimulate scientific thinking by a problem-focused approach with active involvement of students. In this respect, I teach lectures using an electronic *whiteboard* instead of simple PowerPoint slides. The use of an electronic *whiteboard* allows more flexibility and to develop scientific topics interactively. Accordingly, switching to online-only, virtual lectures due to the ongoing COVID-19 pandemic during the summer semester 2020 has been straightforward.

During the Bachelor studies, the Bachelor thesis is usually for students their first experience with ‘real science’ and an excellent starting point to teach problem-based scientific thinking. Accordingly, Bachelor thesis projects in my laboratory are carefully designed to engage, but not overextend the practical and theoretical knowledge of students and thus always closely co-supervised by a PhD student or postdoctoral co-worker.

On the Master level, structured laboratory courses with strict protocols can be unsatisfying for students. I therefore designed my advanced practical courses to involve the students in the planning and the design of experiments. Optimally, Master students have the opportunity to perform several weeks long research laboratory courses, where students participate in ongoing research activities and benefit from one-on-one supervision by PhD students or postdoctoral scientists.

My laboratory is popular among students as I provide them with opportunities to carry out diverse research projects. As supervisor of students working on their Bachelor, Master, and PhD theses, I consider it instrumental to engage with every co-worker regularly on an individual basis in order find out what each person needs to work successfully. This can be very different depending on personality and background. While for example one student will perform best with a lot of given freedom others might need closer guidance. Students appreciate my open-door mentality and regular meetings to discuss progress and problems of their projects. One thing I put emphasis on for all students is to encourage and teach reading and discussion of scientific publications, which I regard essential for the education of researchers.

In terms of career development, I schedule annual one-on-one meetings with PhD students, technicians and Post-docs of my laboratory to learn about their career interests and goals, discuss their career plans, and provide guidance in the preparation of job applications. I also organize annual lab retreats to improve the communication skills of lab members. In particular, the members of my lab strive to develop a culture of constructive criticism where individuals provide feedback on each other presentations and manuscripts.

2.2 Teaching experience

As professor for *Bacterial Physiology* at the Humboldt-Universität zu Berlin, I am heavily involved in teaching general microbiology, bacterial genetics and infection biology in the Bachelor's and Master's studies. My activities range from lectures with over 250 Bachelor students, basic and advanced laboratory courses on the Bachelor level to Master-level lectures, research-orientated laboratory courses and seminars. In this respect, I newly developed modules that focus on teaching microbial cell biology, infection biology and genetics of *Salmonella* for the 5th semester Bachelor and Master studies. My goal is to engage students early with critical scientific thinking, and accordingly, students have the opportunity to develop their own research approach to address a particular scientific question during research-orientated laboratory courses. In advanced seminar series, students study and defend selected controversial topics in the field of microbial cell biology and infection biology.

In my former position at the Helmholtz Centre for Infection Research, I was involved on a voluntary basis in teaching microbial pathogenesis and infection biology at the Bachelor's, Master's and graduate (PhD) levels at the Helmholtz Centre for Infection Research and the Technical University Braunschweig, both as a lecturer and supervisor of laboratory courses.

At the Universities of Konstanz and Fribourg, I also obtained substantial teaching experience in both Bachelor's and Master's classes. In particular, I designed and taught as the responsible supervisor a 12-weeks lecture series on general microbiology and several 1-week microbiology laboratory courses for 2nd and 3rd year Biology and Biomedicine students at the University of Fribourg.

Since 2012, I supervised or I am currently supervising the theses of 19 Bachelor students, 17 Master students, 11 PhD students and 9 postdoctoral researchers in my previous positions and now at the Humboldt-Universität zu Berlin as main responsible supervisor. In addition, I acted and I am currently acting as a mentor or member of numerous PhD students' committees at the Humboldt-Universität zu Berlin.

List of lectures and laboratory courses given at the Humboldt-Universität zu Berlin and previous positions

Year	Course description	University
starting 2022	Instructor of the <i>Advanced Bacterial Genetics</i> (ABG) Course at Cold Spring Harbor Laboratory	Cold Spring Harbor Laboratory, USA
starting 2022	Lecturer of the module <i>MB11 Biochemie und Mikrobiologie</i> , 3rd semester Bachelor (5 ECTS: lecture series (own contribution 2 SWS))	Humboldt-Universität zu Berlin
starting 2022	Lecturer and co-responsible supervisor of the module <i>MB15 Mikrobiologie und Parasitologie</i> , 4th semester Bachelor (5 ECTS: lecture and laboratory course (own contribution 5 SWS))	Humboldt-Universität zu Berlin
starting 2022	Lecturer and co-responsible supervisor of the module <i>MB22 Molekulare Mikrobiologie und Parasitologie</i> , 5th semester Bachelor (10 ECTS: lecture, seminar and laboratory course (own contribution 6 SWS))	Humboldt-Universität zu Berlin

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Year	Course description	University
starting 2022	Lecturer and responsible supervisor of the module <i>QMB6 Molecular microbiology</i> , 2nd semester Master (15 ECTS: lecture, seminar and laboratory course (own contribution 8 SWS))	Humboldt-Universität zu Berlin
starting 2021	Lecturer and co-responsible supervisor of the module <i>QMB1 Molecular Biology</i> , 1st semester Master (10 ECTS: lecture, seminar and laboratory course (own contribution 1.3 SWS))	Humboldt-Universität zu Berlin
starting 2021	Lecturer of the module <i>MB1 Molekulare Zellbiologie</i> , 1st semester Bachelor (10 ECTS: lecture, seminar and laboratory course (own contribution 3.7 SWS))	Humboldt-Universität zu Berlin
since 2018	Lecturer and responsible supervisor of the module <i>Bio19 Zweitfach Mikrobiologie</i> , 2nd and 6th semester Bachelor (5 ECTS: lecture and laboratory course (own contribution 8 SWS))	Humboldt-Universität zu Berlin
since 2018	Lecturer of the module <i>Bio9 Mikrobiologie</i> , 4th semester Bachelor (4 ECTS: lecture (own contribution 1 SWS))	Humboldt-Universität zu Berlin
since 2018	Lecturer and responsible supervisor of the module <i>MB-A55 Advanced bacterial genetics and physiology</i> , 1st and 3rd semester Master (10 ECTS: lecture, seminar and laboratory course (own contribution 8 SWS))	Humboldt-Universität zu Berlin
since 2018	Lecturer and responsible supervisor of the module <i>BXY-08 Grundlagen der bakteriellen Genetik und Zellphysiologie</i> , 5th semester Bachelor (10 ECTS: lecture, seminar and laboratory course (own contribution 8 SWS))	Humboldt-Universität zu Berlin
since 2017	Lecturer of the module <i>B4a</i> lecture series <i>Einführung in die Biologie</i> (3 ECTS: lecture (own contribution 1 SWS))	Humboldt-Universität zu Berlin
2015–2016	Lecturer during the <i>MI01</i> lecture series <i>Principles of Microbiology</i> for Bachelor's students	Technical University Braunschweig
2015	Responsible supervisor of the two-weeks <i>MI01</i> laboratory course <i>Practical course in Microbiology</i> for Bachelor's students	Technical University Braunschweig
2014–2016	Lecturer during the Helmholtz Centre for Infection Research Graduate School lecture series <i>Medical Microbiology</i>	Helmholtz Centre for Infection Research
2014	Supervisor and lecturer during one-week laboratory course module <i>IB24 Molecular Immunology</i> for Master's students	Technical University Braunschweig

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Year	Course description	University
2013–2017	Lecturer during the <i>IB21</i> lecture series and two-week laboratory course <i>Molecular Infection Biology</i> for Master's students	Technical University Braunschweig
2013–2016	Supervisor during two-week laboratory course module <i>IB22 Mechanisms of Microbial Pathogenicity</i> for Master's students	Technical University Braunschweig
2012	Responsible supervisor and organizer of 1-week <i>Laboratory course in microbiology for Bachelor's students</i> in biology (<i>BL.0026</i> ; 1 ECTS)	University of Fribourg
2012	Responsible supervisor and organizer of 1-week <i>Laboratory course in microbiology for biomedical students</i> (<i>ME.6308</i> ; 1 ECTS)	University of Fribourg
2012	Responsible supervisor and lecturer of 12-weeks <i>General Microbiology</i> lecture series <i>ME.6307</i> (3 ECTS) for 3rd year Bachelor's students	University of Fribourg

2.3 Bachelor's, Master's and Doctoral theses

List of supervised Bachelor's theses

Name	Thesis title	University	Year
Tina Hoffmann	CRISPRi toolbox to characterize c-di-GMP signalling pathways in <i>Salmonella</i>	Humboldt-Universität zu Berlin	since 2021
Sarah Loose	Cloning and characterization of potential small non-coding RNA genes in <i>Salmonella</i> Typhimurium	Humboldt-Universität zu Berlin	since 2021
Nicola Schmidt	The impact of temperature fluctuations on flagellin gene expression and phase variation in <i>Salmonella enterica</i>	Humboldt-Universität zu Berlin	since 2021
Simsek Gizem-Gül	FNR-abhängige Regulation der flagellaren Motilität in <i>Salmonella</i> Typhimurium	Humboldt-Universität zu Berlin	2021
Diego Navarro	Functional analysis of the bacterial F-type conjugative plasmid pED208	Humboldt-Universität zu Berlin	2021
Hannah Raasch	Characterization of the flagellin methylase FliB in <i>Salmonella</i> Typhimurium	Humboldt-Universität zu Berlin	2021
Lior Buchman	Optimization of recombinant protein secretion via the flagellar type-III secretion system	Humboldt-Universität zu Berlin	2021

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Name	Thesis title	University	Year
Luisa Buchwalder	Engineering the flagellar filament as template for protein structure determination using cryo-EM	Humboldt-Universität zu Berlin	2021
Mario Delgadillo	Characterization of putative cyclic-di-GMP binding sites in the flagellar specific ATPase FliI	Humboldt-Universität zu Berlin	2020
Sophie Silberhorn	Characterization of small proteins in <i>Salmonella enterica</i> and their effect on flagellar motility	Humboldt-Universität zu Berlin	2020
Kristin Funke	Analysis of polyproline-dependent translational stalling of the flagella master regulator FlhC	Humboldt-Universität zu Berlin	2020
Marlen Staudinger	Charakterisierung von Suppressormutanten und deren Beteiligung an der Regulation des FlhC-Polyprolinmotives in <i>Salmonella Typhimurium</i>	Humboldt-Universität zu Berlin	2019
Sebastian Baron	Charakterisierung therapeutischer Toxine für die Salmonellen-vermittelte Tumorthherapie	Humboldt-Universität zu Berlin	2018
Natascha Stomberg	Die Funktion des Basalkörperproteins FliL während der flagellaren Biosynthese in <i>Salmonella Typhimurium</i>	Technical University Braunschweig	2017
Elif Öztel	Die Rolle des FlhC Poly-Prolin Motives während der flagellaren Biosynthese in <i>Salmonella Typhimurium</i>	Technical University Braunschweig	2017
Sandra Szefs	YifA-abhängige Regulation des flagellaren Master- Operons <i>flhDC</i> in <i>Salmonella Typhimurium</i>	Technical University Braunschweig	2016
Svenja Hüsing	Protein secretion and assembly of the flagellum of <i>Salmonella Typhimurium</i>	Technical University Braunschweig	2015
Sigrun Maurer	Etablierung eines Phagenscreenings zur Identifizierung von Transposon-Insertionsstellen in <i>Salmonella Typhimurium</i>	FH Campus Wien, Vienna, Austria	2015
Alina Guse	Die Rolle der CRISPR-cas Region in der Darminfektion von Salmonellen	Technical University Braunschweig	2014
Karin Brönnimann	Analysis of flagella gene expression in living bacteria	University of Fribourg	2012

List of supervised Master's theses

Name	Thesis title	University	Year
Hannah Grabietz	Fluorescence-based cellular localization of mRNA in <i>Salmonella</i>	Humboldt-Universität zu Berlin	since 2021
Julia Schmidt	Molecular mechanisms controlling the polymerization of flagellar axial proteins in <i>Salmonella enterica</i>	Humboldt-Universität zu Berlin/Universität Würzburg	2021
Rosa Einkenkel	Characterization of the role of cyclic-di-GMP binding for the function of the ATPase FliI during flagellar protein export	Humboldt-Universität zu Berlin	2021
René Wollstadt	Transcriptional start site analyses of the flagellar master regulator <i>flhDC</i> in <i>Salmonella</i> Typhimurium	Humboldt-Universität zu Berlin	2021
Alicia König	Assessment of F-Pilus Assembly Dynamics and Long-Distance Conjugation by Fluorescence Microscopy	Humboldt-Universität zu Berlin	2021
Nelly Schropp	Study of the f-like plasmid transfer mechanism mediated by conjugative pili	Humboldt-Universität zu Berlin & Freie Universität Berlin	2020
Valentina Tovazzi	Characterization of the gene <i>yedF</i> for the virulence of Enterobacteriaceae	Humboldt-Universität zu Berlin & Universitat de Barcelona	2020
Ulf van Look	Genetic engineering of the flagellar type III export apparatus for recombinant protein purification	Technical University Braunschweig & Humboldt-Universität zu Berlin	2019
Svenja Hüsing	Molecular mechanism of bacterial nanomachines assembly: elongation kinetics of the extracellular appendage of the flagellum	Humboldt-Universität zu Berlin	2018
Ahmed Khalil	Construction and characterization of <i>Salmonella</i> Typhimurium strains for therapeutic applications	University zu Lübeck	2018
Alina Guse	Functional characterization of secretion substrate specificity of the type III protein export apparatus of the bacterial flagellum	Technical University Braunschweig	2016
Karen Schindler	Functional analysis of the inner membrane export apparatus of the bacterial flagellum	Technical University Braunschweig	2015
Mona Söhren	Characterization of Fluke and its Effect on Virulence of <i>Salmonella</i>	Technical University Braunschweig	2015

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Name	Thesis title	University	Year
Corinne Tobler	Genetic and functional characterization of small regulatory RNAs involved in <i>Salmonella</i> virulence	Eidgenössische Technische Hochschule Zürich	2015
Leonie Dohmen	Light-powering the flagellar type III secretion system of <i>Salmonella enterica</i>	Technical University Braunschweig	2014
Julia Deditius	Effect of the <i>Salmonella</i> virulence master regulator HilD on flagellar gene expression and motility	Technical University Braunschweig	2013

List of supervised doctoral theses

Name	Thesis title	University	Year
Julia Schmidt	Visualizing the type-III protein secretion system in action	Humboldt-Universität zu Berlin	since 2021
Rosa Einkenkel	Assembly and function of the ATPase FliI during type-III protein export of the bacterial flagellum	Humboldt-Universität zu Berlin	since 2021
Mariá Giralt	Decision making as phenotypic plasticity: flagella assembly during bacterial cell division	Humboldt-Universität zu Berlin	since 2021
Doaa Saleh	The role of small, non-coding RNAs in pathogenesis of <i>Salmonella enterica</i> serovar Typhimurium	Humboldt-Universität zu Berlin	since 2019
Svenja Hüsing	Quality management in assembly of the type III secretion system of the bacterial flagellum	Humboldt-Universität zu Berlin	since 2019
Manuel Halte	Coordinated assembly of the bacterial flagellum	Humboldt-Universität zu Berlin	since 2018
Alina Guse	Mechanisms of substrate targeting and protein secretion through the core type-III export apparatus of the bacterial flagellum	Humboldt-Universität zu Berlin	2016–2020
Abilash Chakravarthy	<i>In vivo</i> analysis of the bacterial transcriptional landscape in different intestinal microbial ecosystems during infection with <i>Salmonella</i> Typhimurium	Technical University Braunschweig	2014–2018
Julia Horstmann [née Deditius]	The Role of Flagella and Bacterial Motility in Virulence of <i>Salmonella</i>	Technical University Braunschweig	2013–2017

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Name	Thesis title	University	Year
Florian Fabiani	Functional dissection of a bacterial nanomachine – the mechanisms of protein export via the type III secretion apparatus	Technical University Braunschweig	2013–2017
Caroline Kühne	Gene regulation dynamics of the flagellar master regulatory operon <i>flhDC</i> in <i>Salmonella enterica</i> serovar Typhimurium	Technical University Braunschweig	2013–2017
Sebastian Felgner*	<i>Salmonella</i> Typhimurium The 'magic bullet' against cancer?	University of Veterinary Medicine Hannover (TiHo)	2013–2016

*co-supervision with Dr. Siegfried Weiss.

List of supervised postdoctoral researchers

Year	Name	University
since 2021	Dr. Gita Naseri	Humboldt-Universität zu Berlin / Max Planck Unit for the Science of Pathogens
since 2021	Dr. Andreas Latoscha	Humboldt-Universität zu Berlin
since 2020	Dr. Philipp Popp	Humboldt-Universität zu Berlin
since 2018	Dr. Caroline Kühne	Humboldt-Universität zu Berlin
2014–2018	Dr. Thibaud Renault	Humboldt-Universität zu Berlin, Helmholtz Centre for Infection Research
2017–2018	Dr. Sebastian Felgner	Helmholtz Centre for Infection Research
2017	Dr. Julia Horstmann	Helmholtz Centre for Infection Research
2014–2016	Dr. Fabio Pisano	Helmholtz Centre for Infection Research
2014–2015	Dr. Ayad Amer	Helmholtz Centre for Infection Research

*currently independent CNRS researcher at the Institut Européen de Chimie Biologie in Bordeaux

3 Bibliography

3.1 Original research articles

([***) highlights the five most important publications)

41. M. Halte, M. E. Wörmann, M. Bogisch, M. Erhardt[‡], N. Tschowri. *BldD-based bimolecular fluorescence complementation for in vivo detection of the second messenger cyclic di-GMP*. **Molecular Microbiology** (2021) 10.1111/mmi.14805 [DOI] [PDF]
40. A. Guse, M. Halte, S. Hüsing, M. Erhardt[‡]. *Hook-basal body assembly state dictates substrate specificity of the flagellar type-III secretion system*. **Molecular Microbiology** (2021) 10.1111/mmi.14805 [DOI] [PDF]
39. S. Hüsing, M. Halte, U. van Look, A. Guse, E. J. C. Gálvez, E. Charpentier, D. F. Blair, M. Erhardt[‡], T. T. Renault. *Control of membrane barrier during bacterial type-III protein secretion*. **Nature Communications** (2021) vol. 12, 3999 [DOI] [PDF]
38. M. Santiveri, A. Roa-Eguiara, C. Kühne, N. Wadhwa, H. C. Berg, M. Erhardt, N. M. I. Taylor. *Structure and function of stator units of the bacterial flagellar motor*. **Cell** (2020) vol. 183, 244-257.e16 [DOI] [PDF PREPRINT] [***]
37. H. Cazzola, L. Lemaire, S. Acket, E. Prost, L. Duma, M. Erhardt, P. Čechová, P. Trouillas, F. Mohareb, C. Rossi, Y. Rossez. *The impact of plasma membrane lipid composition on flagella-mediated adhesion of enterohemorrhagic Escherichia coli*. **mSphere** (2020) vol 5, e00702-20 [DOI] [PDF]
36. J. A. Horstmann*, M. Lunelli*, H. Cazzola, J. Heidemann, C. Kühne, P. Steffen, S. Szefs, C. Rossi, R. K. Lokareddy, C., Wang, L. Lemaire, K. T. Hughes, C. Uetrecht, H. Schlüter, G. A. Grassl, T. E.B. Stradal, Y. Rossez, M. Kolbe, M. Erhardt[‡]. *Methylation of Salmonella Typhimurium flagella promotes bacterial adhesion and host cell invasion*. **Nature Communications** (2020) vol. 11, 2013 [DOI] [PDF] [***]
35. S. Felgner, I. Spöring, V. Pawar, D. Kocijancic, M. Preusse, C. Falk, M. Rhode, S. Häussler, S. Weiss, M. Erhardt. *The immunogenic potential of bacterial flagella for Salmonella-mediated tumor therapy*. **International Journal of Cancer** (2020) 10.1002/ijc.32807 [DOI] [PDF]
34. S. Nakamura, Y. Hanaizumi, Y.V. Morimoto, Y. Inoue, M. Erhardt, T. Minamino, K. Namba. *Direct observation of speed fluctuations of flagellar motor rotation at extremely low load close to zero*. **Molecular Microbiology** (2019) vol. 113, 755-765 [DOI]
33. I. Bernal, J. Börnicke, J. Heidemann, D. Svergun, J. A. Horstmann, M. Erhardt, A. Tuukkanen, C. Uetrecht, M. Kolbe. *Molecular organization of soluble type III secretion system sorting platform complexes*. **Journal of Molecular Biology** (2019) vol. 431, 3787-803 [DOI]

32. I. Spöring*, V. A. Martinez*, C. Hotz*, J. Schwarz-Linek*, K. L. Grady, J. M. Nava-Sedeno, T. Vissers, H. M. Singer, M. Rhode, C. Bourquin, H. Hatzikirou, W. C. Poon, Y. Dufour, M. Erhardt‡. *Hook length of the bacterial flagellum is optimized for maximal stability of the flagellar bundle*. **PLOS Biology** (2018) vol. 16 (9) e2006989 [DOI][PDF] [***]
31. M. Dongre, B. Singh, K. M. Aung, P. Larsson, R. Miftakhova, K. Persson, F. Askarian, M. Johannessen, J. von Hofsten, J. L. Persson, M. Erhardt, S. Tuck, B. E. Uhlin, S. N. Wai. *Flagella-mediated secretion of a novel Vibrio cholerae cytotoxin affecting both vertebrate and invertebrate hosts*. **Communications Biology** (2018) vol. 1 59 [DOI][PDF]
30. I. Spöring*, S. Felgner*, M. Preusse, D. Eckweiler, M. Rhode, S. Häussler, S. Weiss, M. Erhardt‡. *Regulation of Flagellum Biosynthesis in Response to Cell Envelope Stress in Salmonella enterica Serovar Typhimurium*. **mBio** (2018) vol. 9 (3) e00736-17 [DOI][PDF]
29. E. Ward, T. T. Renault, E. A. Kim, M. Erhardt, K. T. Hughes, D. F. Blair. *Type-III Secretion Pore Formed by Flagellar Protein FlhP*. **Molecular Microbiology** (2018) vol. 107 (1) 94?103 [DOI]
28. S. Felgner*, D. Kocijancic*, M. Frahm, U. Heise, K. Zimmermann, M. Erhardt, S. Weiss. *Engineered Salmonella enterica serovar Typhimurium overcome limitations of anti-bacterial immunity in bacteria-mediated tumor therapy*. **OncoImmunology** (2018) vol. 7 (2) e1382791 [DOI]
27. F. D. Fabiani*, T. T. Renault*, B. Peters, T. Dietsche, E. J. C. Galvez, A. Guse, K. Freier, E. Charpentier, T. Strowig, M. Franz-Wachtel, B. Macek, S. Wagner, M. Hensel, M. Erhardt‡. *A flagellum-specific chaperone facilitates assembly of the core type-III export apparatus of the bacterial flagellum*. **PLOS Biology** (2017) vol. 15 (8) e2002267 [***]; Article recommended by F1000 as 'New finding', 'Technical advance' and rated as 'Very good'. [DOI][PDF]
26. S. Thiemann, N. Smit, T. Schauer, U. Roy, E. J.C. Gálvez, J. Helmecke, T. Robin Lesker, M. Basic, A. Bleich, A. D. Goodman, U. Kalinke, R. A. Flavell, M. Erhardt, T. Strowig. *Enhancement of IFN γ production in CD4⁺ T cells by distinct commensals ameliorates Salmonella induced disease*. **Cell Host & Microbe** (2017) 10.1016/j.chom.2017.05.005 [DOI]
25. D. Kocijancic*, S. Felgner*, T. Schauer, M. Frahm, U. Heise, K. Zimmermann, M. Erhardt, S. Weiss. *Local application of bacteria improves safety of Salmonella-mediated tumor therapy and retains advantages of systemic infection*. **Oncotarget** (2017) 10.18632/oncotarget.18392 [DOI]
24. G. Paradis*, F. F. V. Chevance*, W. Liou, T. T. Renault, K. T. Hughes, S. Rainville, M. Erhardt‡. *Variability in bacterial flagella re-growth patterns after breakage*. **Scientific Reports** (2017) 10.1038/s41598-017-01302-5 [DOI][PDF]
23. J. Horstmann, E. Zschieschang, T. Truschel, J. de Diego, M. Lunelli, M. Rohde, T. May, T. Strowig, T. Stradal, M. Kolbe, M. Erhardt‡. *Flagellin phase-dependent swimming on epithelial cell surfaces contributes to productive Salmonella gut colonization*. **Cellular Microbiology** (2017) 10.1111/cmi.12739 [DOI]

* Co-first author

‡ Corresponding and/or (co)-senior author

* Co-first author

‡ Corresponding and/or (co)-senior author

22. T. T. Renault, A. O. Abraham, T. Bergmiller, G. Paradis, S. Rainville, E. Charpentier, C. C. Guet, Y. Tu, K. Namba, J. P. Keener, T. Minamino, M. Erhardt[‡]. *Bacterial flagella grow through an injection-diffusion mechanism*. **eLife** (2017) 10.7554/eLife.23136 [***; Article recommended by F1000 as 'Good for teaching', 'New finding', 'Technical advance' and rated as 'Exceptional'.] [DOI] [PDF]
21. M. Erhardt, P. Wheatley, E. A. Kim, T. Hirano, Y. Zhang, M. K. Sarkar, K. T. Hughes, D. F. Blair. *Mechanism of type-III protein secretion: Regulation of FlhA conformation by a functionally critical charged-residue cluster*. **Molecular Microbiology** (2017) 10.1111/mmi.13623 [DOI]
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19. B. Barlag, O. Beutel, D. Janning, F. Czarniak, C. P. Richter, R. Kurre, F. Fabiani, M. Erhardt, J. Piehler, M. Hensel. *Single molecule super-resolution imaging of proteins in living Salmonella enterica using self-labeling enzymes*. **Scientific Reports** (2016) vol. 6 p.31601 [DOI] [PDF]
18. C. Kühne, H. M. Singer, E. Grabisch, L. Codutti, T. Carlomagno, A. Scrima, M. Erhardt[‡]. *RflM mediates target specificity of the RcsCDB phosphorelay system for transcriptional repression of flagellar synthesis in Salmonella enterica*. **Molecular Microbiology** (2016) vol. 101 (5) 841–55 [DOI]
17. S. Felgner, D. Kocijancic, M. Frahm, R. Curtiss III, M. Erhardt, S. Weiss. *Optimizing Salmonella enterica Serovar Typhimurium for Bacteria-mediated Tumor Therapy*. **Gut Microbes** (2016) vol. 7 (2) 177–77 [DOI]
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15. M. Frahm, S. Felgner, D. Kocijancic, M. Rohde, M. Hensel, R. Curtiss III, M. Erhardt, S. Weiss. *Efficiency of conditionally attenuated Salmonella Typhimurium in bacteria mediated tumour therapy*. **mBio** (2015) vol. 6 (2) e00254–15 [DOI] [PDF]
14. R. W. Hendrix, C.-C. Ko, D. Jacobs-Sera, G. F. Hatfull, A. M. Kropinski, J. M. Denyes, M. Erhardt, K. T. Hughes, S. R. Casjens. *The genome sequence of Salmonella phage Chi*. **Genome Announcements** (2015) vol. 3 (1) e01229–14 [DOI] [PDF]
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12. H. M. Singer, M. Erhardt[‡], K. T. Hughes. *Comparative analysis of the secretion capability of early and late flagellar type III secretion substrates*. **Molecular Microbiology** (2014) vol. 93, 505–20 [DOI]
11. H. M. Singer, C. Kühne, J. A. Deditius, K. T. Hughes, M. Erhardt[‡]. *The Salmonella Spi1 virulence regulatory protein HilD directly activates transcription of the flagellar master operon flhDC*. **Journal of Bacteriology** (2014) vol. 196, 1448–57 [DOI] [PDF]

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7. M. Erhardt[‡], H. M. Singer, D. H. Wee, J. P. Keener, K. T. Hughes. *An infrequent molecular ruler controls flagellar hook length in Salmonella enterica*. **The EMBO Journal** (2011) vol. 30 2948–61 [DOI] [PDF]
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3.2 Review articles

13. H. Hu, M. Santiveri, N. Wadhwa, H. C. Berg, M. Erhardt, N.M.I. Taylor. *Structural basis of torque generation in the bi-directional bacterial flagellar motor*. **Trends in Biochemical Sciences** (2021) S0968-0004(21)00139 [DOI] [PDF]
12. P. F. Popp, M. Erhardt[‡]. *With or without you: crosstalk between cell division and flagellum assembly*. **Developmental Cell** (2021) vol. 56 10.1016/j.devcel.2021.02.013 [DOI]
11. M. Halte, M. Erhardt[‡]. *Protein Export via the Type III Secretion System of the Bacterial Flagellum*. **Biomolecules** (2021) vol. 11 (2), 186 [DOI] [PDF]

^{*}Co-first author

10. C. Kühne, A. Guse, S. Hüsing, M. Erhardt[‡]. *Bacterial Flagella*. eLS. **John Wiley & Sons Ltd, Chichester** (2020) 10.1002/9780470015902.a0000301.pub3 [DOI]
9. T. T. Renault, A. Guse, M. Erhardt[‡]. *Export Mechanisms and Energy Transduction in Type-III Secretion Machines*. **Current Topics in Microbiology and Immunology** (2019) [DOI]
8. A. Adela Miranda-CasoLuengo, S. C. Kary, M. Erhardt, C. Kröger. *Small RNA, big effect: control of flagellin production*. **Trends in Microbiology** (2017) S0966-842X(17)30230-5 [DOI]
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6. M. Erhardt[‡]. *Energy requirements for protein secretion via the flagellar type-III secretion system*. **Methods in Molecular Biology – Bacterial Protein Secretion Systems** (2017) vol. 1615 449–457 [DOI]
5. M. Erhardt[‡]. *Fluorescent microscopy techniques to study hook length control and flagella formation*. **Methods in Molecular Biology – The Bacterial Flagellum: Methods and Protocols** (2017) vol. 1593 37–46 [DOI]
4. M. Erhardt[‡]. *Strategies to block bacterial pathogenesis by interference with motility and chemotaxis*. **Current Topics in Microbiology and Immunology** (2016) vol. 398 185–205 [DOI]
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1. M. Erhardt, K. Namba, K. T. Hughes. *Bacterial Nanomachines: The Flagellum and Type III Injectisome*. **Cold Spring Harbor Perspectives in Biology** (2010) vol. 2 (11) a000299 [DOI] [PDF]

3.3 Pre-prints and other publications

4. A. Guse, M. Rhode, M. Erhardt[‡]. *Controlling minimal and maximal hook-length of the bacterial flagellum*. **bioRxiv** (2020) 10.1101/2020.03.25.007062 [DOI] [PDF]
3. M. Erhardt[‡]. *A tale of a tail - eine kurze Geschichte der Biosynthese von Flagellen*. **BIOspektrum** (2018) vol. 3, 246-9 [PDF]
2. H. M. Singer and M. Erhardt[‡]. *Regulation, Aufbau und Funktion einer bakteriellen Nanomaschine*. **BIOspektrum** (2014) vol. 5, 500-2 [DOI]
1. M. Erhardt[‡]. *Biosynthese des bakteriellen Flagellums – in vivo Längenmessung im Nanomaßstab*. **BIOspektrum** (2012) vol. 6 p.679 [DOI]

3.4 Patents

- M. Erhardt, S. Felgner, D. Kocijancic, S. Weiss. *Salmonella and immunogenic composition containing the same as well as its use (WO 2018/197621)*.

[‡]Corresponding and/or (co)-senior author

[‡]Corresponding and/or (co)-senior author