

Pia zur Wiesch, Ph.D.

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RESEARCH INTERESTS

I use theoretical models in close collaboration with experimentalists and clinicians to explore how we could use both within-host and population-wide treatment strategies to minimize human morbidity and mortality. The focus of my most recent research is rationalizing antibiotic treatment by bridging the gap between intracellular reaction kinetics and bacterial population dynamics. I am employing these newly developed mathematical models to improve dosing regimens for existing and new antibiotics in two EU consortia with academics, clinicians and industry.

EDUCATION

- 10/2007-05/2011 **PhD in Theoretical Biology**
Date and year of approved disputation: 05/20/2011
Institute for Integrative Biology, ETH Zurich, Switzerland
-ETH medal for outstanding thesis, upper 8% of PhD students-
- 01/2005-10/2006 **Master of Science in Biochemistry/Oncology**
Biozentrum, University Basel, Switzerland
average mark: *-excellent-*

CURRENT AND PREVIOUS POSITIONS

- since 10/2015 **NCMM young associate investigator** (Nordic EMBL partnership)
- since 09/2015 **Seniorforsker** (tenure track group leader position)
Department of Pharmacy, University of Tromsø, Norway
- 09/2015- 09/2017 **Visiting assistant professor**
School of Public Health, Yale University, New Haven, CT, USA
- 09/2014-08/2015 **Research Fellow**
School of Public Health, Yale University, New Haven, CT, USA
- 04/2012-08/2014 **Research Fellow**
School of Public Health, Harvard Medical School, Boston, MA, USA
- 04/2012-08/2014 **Postdoctoral Research Fellow**
Division of Global Health Equity, Brigham and Women's Hospital, Boston, MA, USA
- 05/2011-03/2012 **Postdoctoral Fellow**
Institute of Integrative Biology, ETH Zürich, Switzerland
- 08/2007-10/2007 **Intern**
World Health Organization, Bonn Office, Germany
- 04/2007-08/2007 **Research Assistant**
Roche Diagnostics, Mannheim, Germany

FUNDING (PI)

- 06/2017 **PI**
Young Research Talents, Norwegian Research Council **\$1.1 Mio**
- 01/2017 **Work package leader**
Consortium "anTBiotic", Horizon 2020 **\$6.5 Mio (\$723k to PzW)**
- 01/2017 **Work package leader**
Consortium "collateral damage", JPI-AMR **\$2 Mio (\$400k to PzW)**
- 12/2015 **Co-PI (shared postdoc)**
Helse Nord, Norway (main PI: Sören Abel) **\$406,700**

09/2014	Co-PI (shared postdoc) Bill & Melinda Gates foundation (main PI: Ted Cohen)	\$412,262
09/2014	3 year postdoctoral fellowship Swiss National Science Foundation (SNF), Switzerland	\$220,000
04/2013	1 year postdoctoral fellowship Swiss National Science Foundation (SNF), Switzerland	\$57,500
04/2012	1 year postdoctoral fellowship Fellowship by German Academic Exchange Service	\$77,500

FUNDING (Collaborator/Partner)

starting 2018	Collaborator Career development award, Medical Research Council UK (main PI: Helen Stagg)
04/2018	Partner (co-supervision of postdoc) Marie Curie Fellowship, Horizon 2020/EU (main host: GlaxoSmithKline)
06/2017	Collaborator (hosting of student) Medical Research Council (main PI: Laura Piddock)
12/2015	Collaborator internal postdoc Astra Zeneca https://www.linkedin.com/jobs/view/153015436

AWARDS

01/2012	ETH medal for outstanding thesis, upper 8% of PhD students
06/2010	Fellowship Summer School Modeling in Infectious Diseases, University of Washington, USA
08/2008-05/2011	E-fellows scholarship
05/2003-10/2004	Full scholarship “Stiftung der Deutschen Wirtschaft“(SDW), Germany

SUPERVISION (*current group members in italics*)

<i>since 2018</i>	Host/partner, Marie Curie Fellow	<i>Santiago Ramon Garcia</i>
<i>since 2018</i>	Main adviser, MPH student/intern at Yale	<i>Colin Hemez</i>
<i>since 2018</i>	Main adviser, postdoc at UiT	<i>Vi Tran</i>
<i>since 2018</i>	Main adviser, postdoc at UiT	<i>Jingyi Liang</i>
<i>since 2017</i>	Main adviser, project manager	<i>Marie Hella Lindberg</i>
<i>since 2017</i>	Co-adviser, postdoc at UiT	<i>Anel Mahmutovic</i>
2017	Main adviser, MPH student/intern at Yale	<i>Yu Li Hsieh</i>
<i>since 2016</i>	Main adviser, postdoc at UiT	<i>Fabrizio Clarelli</i>
<i>since 2016</i>	Main adviser, PhD student at UiT	<i>Antal Martinecz</i>
<i>since 2016</i>	Co-adviser, PhD student at UiT	<i>Christina Bleis</i>
2015-2016	Main adviser, postdoc at Yale	<i>Alireza Shams</i>
2013	Supervision, graduate student at Harvard Medical School	<i>Joanna Wolny</i>
2011	Supervision, research intern at ETH Zürich	<i>Laurence Laser</i>
2010-2011	Supervision, master student	<i>Dominique Cadosch</i>
2008	Supervision, research intern at ETH Zürich	<i>Pascal Schlapfer</i>

TEACHING ACTIVITIES

2016 & 2017	Lecture at course “ Molecular Medicine ” NCMM Oslo (PhD students)
2015	Lecture summer school “ Infection, Inflammation and Immunity ”, Tromsø
2014	Lecture at course “ Evolutionary Epidemiology ” Harvard School of Public Health (MSc and PhD students)
2014	Lecture at course “ Introduction to Infectious Disease Research ” Harvard Medical School
2013	Lecture at course “ Evolutionary Epidemiology ” Harvard School of Public Health (MSc and PhD students)

- 2012 **Summer Program in Epidemiology**
Harvard School of Public Health (undergraduates)
- 2010 Seminar series “**Evolution of drug resistance**”
ETH Zürich (MSc and PhD students), responsible for the cancer module

ORGANISATION OF SCIENTIFIC MEETINGS

- 2018 Hosting **EU-consortium anTBiotic** meeting at UiT
- 2012-2013 Organization Seminar Series “**Harvard Biomathematics Seminar**”
Harvard Medical School
- 2008-2009 Organization of the “**Zürich Interaction Seminar**”
ETH Zürich; <http://www.tb.ethz.ch/education/zis.html>

COMMISSIONS OF TRUST

Independent reviewer for: *PLoS Biology, ISME, PLoS Pathogens, BMC Evolutionary Biology, Journal of Antimicrobial Chemotherapy, Journal of Theoretical Biology, Intensive Care Medicine, Epidemics, American Journal of Epidemiology, PLoS Computational Biology, PLoS One, Scientific Reports, Evolution Medicine and Public Health.*

PROFESSIONAL CONTRIBUTION TO PUBLIC HEALTH AGENCIES

I am part of a team that derived new estimates for TB disease burden for the WHO:
<https://tinyurl.com/y8r4ddvf>

MAJOR COLLABORATIONS

Grant Helse Nord

- Sören Abel **UiT & NCMM, Norway**
- Virginia Pitzer **Yale School of Public Health, CT, USA**
- Ulf Dahle **Norwegian Institute of Public Health, Norway**

Grant Gates Foundation

- Ted Cohen **Yale School of Public Health, CT, USA**

JPI-AMR consortium

- Pål Johnsen **UiT, Norway**
- Dan Andersson **University Uppsala, Sweden**
- Niels Frimodt-Møller **Rigshospital Copenhagen, Denmark**
- Daniel Rozen **University Leiden, Netherlands**

EU/Horizon 2020 consortium

- David Barros **GlaxoSmithKline, Spain**
- Clif Barry **University Cape Town, South Africa/ NIH, USA**
- Andreas Diacon **TASK foundation, South Africa**
- Christoph Lange **Leibniz Research Center Borstel, Germany**

Marie Curie Fellowship

- David Barros **GlaxoSmithKline, Spain**
- Santiago Garcia **University Zaragoza, Spain**

Medical Research Council

- Laura Piddock **University Birmingham, UK**

Medical Research Council, Career development award

- Helen Stagg **University Edinburgh, UK**

LIST OF POPULAR SCIENCE AND USER ORIENTED DISSEMINATION

- 2018 **Panel discussion, 37C conference, Stavanger**

- 2017 **Web tool** to predict antibiotic dosing
<https://papuck.org>
- 2015 featured in **HHMI magazine**
<http://tinyurl.com/osn8rmq>
- 2015 featured in **Yale magazine**
<http://publichealth.yale.edu/news/archive/article.aspx?id=9280>
- 2011 featured in **ETH magazine**
http://www.ethlife.ethz.ch/archive_articles/110503_Antibiotika_ake/
- 2011 **Outreach program** for gifted high-school students, Freiburg, Germany

INVITED PRESENTATIONS

- 05/2010 The Utrecht Centre for Infection Dynamics (UCID), Netherlands.
- 07/2010 Emory University, Atlanta.
- 06/2011 INSERM Strasbourg, France.
- 07/2011 Imperial College London, UK.
- 07/2011 Princeton University, NJ, USA.
- 01/2012 University Tromsø, Norway.
- 01/2012 Karolinska Institute, Sweden.
- 07/2012 Program for Evolutionary Dynamics, Harvard University, Boston, USA.
- 03/2013 Harvard School of Public Health, Boston, MA, USA.
- 04/2013 EAWAG/ETH Zürich, Switzerland.
- 05/2013 Emory University, Atlanta, USA.
- 09/2013 “TB MAC Meeting”, Gates foundation & Chinese CDC, Beijing, China.
- 11/2013 University Uppsala, Sweden.
- 11/2013 Karolinska Insitutet, Stockholm, Sweden.
- 05/2014 RAPPIDD workshop, Princeton University, NJ, USA.
- 11/2014 EPFL Lausanne, Switzerland.
- 11/2014 University Hospital Zürich, Switzerland.
- 06/2015 American Society of Microbiology General Meeting, New Orleans, USA.
- 09/2015 Workshop Clinical Pharmacology of TB Drugs, San Diego, USA.
- 09/2015 Astra Zeneca, Waltham, MA, USA.
- 01/2016 Workshop Resistance Evolution ISGlobal, Barcelona, Spain.
- 01/2016 GlaxoSmithKline Madrid, Spain.
- 05/2016 Birmingham Applied Maths Seminar, Birmingham University, UK.
- 05/2016 Infectious Disease Epidemiology Seminars, Imperial College, UK.
- 06/2016 The 2016 TB Summit, London, UK.
- 06/2016 Symposium Therapeutic Resistances in Infectious Disease, Berlin, Germany.
- 09/2017 Hans Prydz Guest Lecture, NCMM Oslo, Norway
- 10/2016 American Conference on Pharmacometrics, Seattle, WA, USA.
- 06/2017 Meeting EU consortium anTBiotic, Rome, Italy
- 11/2017 Intellectual Ventures, Seattle, USA
- 01/2018 Nordic EMBL network, Umeå University, Sweden
- 02/2018 Nordic EMBL network, Norwegian Center of Molecular Medicine Oslo, Norway
- 03/2018 Pennsylvania State University, State College, USA
- 06/2018 Institut Pasteur, Paris, France

LIST OF PUBLICATIONS

h-index: 13; i10-index: 15; citations: 667; *equal contribution; #corresponding author

1. Fabrizio F, Singh P, Palmer A, Abel S, Cohen T, *Abel zur Wiesch P*[#]. BioRxiv, 2018.
doi: <https://doi.org/10.1101/369975>.
2. Martinecz A, *Abel zur Wiesch P*. **Pathogens and Disease** (2018). Accepted.
3. Zhang T, Abel S, *Abel zur Wiesch P*, Sasabe J, Davis BM, Higgins DE, Waldor MK.
PNAS (2017) 114(24):6334-9.

4. *Abel zur Wiesch P[#]*, Clarelli F, Cohen T. **PLOS Computational Biology**. 2017 Jan 6;13(1):e1005321. (featured in <http://collections.plos.org/open-highlights-antibiotic-resistance>)
5. A Kunkel*, *P Abel zur Wiesch**, RR Nathavitharana, FM Marx, HE Jenkins, T Cohen **BMC infectious diseases** 16 (1), 282.
6. Hubbard PT, Chao MC, Abel S, Blondel CJ, *Abel zur Wiesch P*, Zhou X, Davis BM, and Waldor MK. **PNAS** (2016) 113(22), 6283-8.
7. Cadosch D, *Abel zur Wiesch P*, Kouyos RD, and Bonhoeffer, S. **PLOS Computational Biology** (2016) 12 (3):e1004749.
8. Salvatore P, Becerra M, *Abel zur Wiesch P*, Hinkley T, Kaur D, Sloutsky A, Cohen T. **J. Infect. Dis.** (2015) pii: jiv347.
9. Abel S, *Abel zur Wiesch P*, Davis BM, and Waldor MK. **PLOS PATHOGENS** (2015) 11(6):e1004823.
10. *Abel zur Wiesch P[#]*, Abel S, Gkotzis S, Ocampo P, Engelstädter J, Hinkley T, Magnus C, Waldor MK, Udekwu K, and Cohen T. **SCI. TRANSL. MED.** (2015) 7(287):287ra73.
11. Abel S, *Abel zur Wiesch P*, Chang H-H, Davis BM, Lipsitch M, and Waldor MK. **Nature Methods** (2015) 12(3):223-6.
12. Kouyos RD, Metcalf CJE, Birger R, Klein EY, *Abel zur Wiesch P*, Ankomah P, et al. **Proceedings of the Royal Society B: Biological Sciences** (2014) 281(1794):20140566.
13. Ocampo PS, Lazar V, Bogos B, Arnoldini M, *Abel zur Wiesch P*, Busa-Fekete R, Fekete G, Pal C, Ackermann M and Bonhoeffer S. **Antimicrobial Agents and Chemotherapy** (2014) 58(8):4573-82.
14. *Abel zur Wiesch P[#]**, Kouyos RD*, Abel S and Bonhoeffer S. **PLOS Pathogens** (2014) 10(6):e1004225.
15. Abel S, Bucher T, Nicollier M, Hug I, Kaever V, *Abel zur Wiesch P*, Jenal U. **PLOS Genetics** (2013) 9(9):e1003744.
16. Kouyos RD*, *Abel zur Wiesch P**, Bonhoeffer S. **PLOS Pathogens** (2011) 7(4):e1001334.
17. Kouyos RD, *Abel zur Wiesch P*, Bonhoeffer S. **PLOS Computational Biology** (2011) 7(3):e1001094.
18. *Abel zur Wiesch P**, Kouyos R*, Engelstädter J, Regoes R, Bonhoeffer S. **Lancet Infectious Diseases** (2011) 11(3):236-247.
19. Bonhoeffer S, *Abel zur Wiesch P*, and Kouyos RD. **Mathematical Biosciences and Engineering** (2010) 7(4):919-922.
20. *Schulz zur Wiesch P[#]*, Engelstädter J, and Bonhoeffer S. **Antimicrobial Agents and Chemotherapy** (2010) 54(5):2085-95.

REFERENCES

Postdoctoral adviser	PhD adviser	Collaboration partner
Ted Cohen	Sebastian Bonhoeffer	Matthew Waldor
Associate Professor at Yale University	Professor at ETH Zurich	Professor at Harvard University
theodore.cohen@yale.edu	seb@env.ethz.ch	mwaldor@research.bwh.harvard.edu
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