

## Pierre Stallforth, PhD – *Curriculum Vitae*

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### Education and Research Experience

12/2013	Independent Junior Group Leader, <b>Leibniz Institute</b> for Natural Product Research and Infection Biology, (Hans Knöll Institute, HKI, Jena) Dept. of Chemistry of Microbial Communication
2/2011 – 11/2013	Postdoc, <b>Harvard Medical School</b> , Dept. of Biological Chemistry and Molecular Pharmacology, Boston. Mentor: Prof. Jon Clardy
11/2006 – 11/2010	Graduate Studies (Dr. sc. ETH Zurich), <b>ETH Zurich</b> and <b>Max Planck Institute</b> , Colloids and Interfaces, Biomolecular Systems, Berlin Supervisors: Prof. Peter H. Seeberger, Prof. Donald Hilvert “ <i>Synthesis of Bacterial Carbohydrates and Glycolipids for Application in Novel Vaccine Strategies</i> ”
09/2005 – 07/2006	Master Thesis, <b>University of Oxford</b> Supervisor: Prof. David E. Logan (1 <sup>st</sup> class)
10/2002 – 07/2006	MSc Studies Chemistry, St Edmund Hall, <b>University of Oxford</b> (1 <sup>st</sup> class, being placed 2 <sup>nd</sup> out of 150 students)
06/2002	Abitur at <b>Paul-Klee-Gymnasium Gersthofen</b> , Germany

### Fellowships, Awards, and Third Party Funding

06/2018	Boehringer Ingelheim Exploration Grant
03/2018	DFG Research Grant STA1431/3-1
08/2017	Best Talk Prize, International 2017 Dictyostelium Conference, Geneva
07/2017	DFG Research Grant STA1431/2-1
11/2016	medac Reserach Prize
12/2015	Funding from the Fonds der Chemischen Industrie
12/2015	Funding from the Dr. Illing Foundation
02/2014	Fellowship of the Daimler and Benz Foundation
06/2012	Feodor Lynen-Postdoc Fellowship (A. v. Humboldt Foundation)
02/2011	Swiss National Fund Postdoc Fellowship
06/2007	PhD Fellowship, Studienstiftung (German Academic Merit Foundation)
06/2005	Gibbs Prize for excellence in the final examination
06/2005 – 07/2006	Fellowship of the Studienstiftung
2003 and 2004	Turbutt Prize for excellence in practical organic chemistry
06/2003 – 07/2006	University of Oxford, Open Scholarship
06/2002	Prize for the best Abitur at Paul-Klee-Gymnasium

### Work Experience

2005	Internship, <b>Process Research Merck &amp; Co.</b> Rahway, NJ (10 weeks)
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### Teaching Experience

04/2018 –	Lectures: Synthesplanung (for master students in Chemical Biology)
11/2016 – 02/2018	Lectures: Microbiology (for pharmacists) and Biochemistry (for pharmacists)
08/2016	Summer School (2 weeks, Studienstiftung) Antibiotics and Resistance
11/2015 – 12/2015	Lectures: Analytical Chemistry (Friedrich-Schiller-University, Jena)
09/2014 – 01/2018	Seminars: Bioanalytical Chemistry (Friedrich-Schiller-University, Jena)
07/2013	Biosynthesis (5d summer school Braz. Soc. of Pharamcognosy, Macapá, Brazil)
09/2009 – 12/2009	Practical Organic Chemistry I (ETH Zurich)
02/2008 – 06/2008	Practical Organic Chemistry II (ETH Zurich)
09/2007 – 12/2007	Teaching Assistant: Biological Chemistry I (ETH Zurich)
02/2007 – 07/2007	Teaching Assistant: Organic Chemistry II (ETH Zurich)

**Publications** (<sup>+</sup>equal contributions, \*corresponding author)

1. F. Broecker, S. Götze, J. Hudon, D. C. K. Rathwell, C. L. Pereira, **P. Stallforth**, A. Chakkumkalag, P. H. Seeberger\* “Synthesis, Liposomal Formulation, and Immunological Evaluation of a Minimalistic Carbohydrate- $\alpha$ -GalCer Vaccine Candidate” **2018**, *J. Med. Chem.* *accepted*
2. D. Heinrich, R. Barnett, L. Tweedy, R. Insall, **P. Stallforth**, T. Winckler\* “The chemoattractant glorin is inactivated by ester cleavage during multicellular development of the social amoeba *Polysphondylium pallidum*” **2018**, *ACS Chem. Biol.* *accepted*
3. J. Arp<sup>+</sup>, S. Götze<sup>+</sup>, R. Mukherji, D. J. Mattern, M. García-Altare, M. Klapper, D. A. Brock, A. A. Brakhage, J. E. Strassmann, D. C. Queller, B. Bardl, K. Willing, G. Peschel, **P. Stallforth**\*, “Synergistic activity of co-secreted natural products from amoebae-associated bacteria” **2018**, *Proc. Natl. Acad. Sci. USA.* *in press.* DOI: 10-107.3/pnas.17217.90115
4. M. Klapper, D. Braga, G. Lackner, R. Herbst, **P. Stallforth**\*, “Bacterial Alkaloid Biosynthesis: Structural Diversity via a Minimalistic Nonribosomal Peptide Synthetase” **2018** *Cell Chem. Biol.* *in press.* DOI: 10.1016/j.chembiol.2018.02.013
5. M. Klapper, J. Arp, M. Günther, **P. Stallforth**\*, “The Role of Bacterial Natural Products in Predator Defense” *Synlett*, **2018**, 29, 537.
6. R. Barnett, **P. Stallforth**\*, “Natural Products from Social Amoebae” *Chem. Eur. J.* **2018**, 24, 4202.
7. S. Götze, R. Herbst-Irmer, M. Klapper, H. Görls, K. R. A. Schneider, R. Barnett, T. Burks, U. Neu, P. Stallforth\*, “Structure, Biosynthesis, and Biological Activity of the Cyclic Lipopeptide Anikasin” *ACS Chem. Biol.* **2017**, 12, 2498.
8. R. Gallegos-Monterrosa, S. Kankel, S. Götze, R. Barnett, **P. Stallforth**\*, A. T. Kovács\*, “*Lysinibacillus fusiformis* M5 induces increased complexity in *Bacillus subtilis* 168 colony biofilms via hypoxanthine” *J. Bact.* **2017**, 199:e00204-17.
9. J. Arp, **P. Stallforth**\*, “Rationalizing the Right Ratios”, *Cell Chem. Biol.* **2017**, 24, 539.
10. R. Barnett, D. Raszkowski, T. Winckler, **P. Stallforth**\*, “A Versatile Synthesis of the Signaling Peptide Glorin” *Beilstein J. Org. Chem.* **2017**, 13, 247.
11. M. Klapper, S. Götze, R. Barnett, K. Willing, **P. Stallforth**\*, “Bacterial Alkaloids Prevent Amoebal Predation” *Angew. Chem. Int. Ed. Engl.* **2016**, 55, 8944.
12. A. Adibekian\*, **P. Stallforth**\*, “Cutting Edge Chemical Biology: Report from the 2016 International Symposium on Chemical Biology, January 13–15, Geneva, Switzerland” *ACS Chem. Biol.* **2016**, 11, 816.
13. S. Götze, **P. Stallforth**\*, “Chemical Communication in Microbial Communities” *GIT Lab. J.* **2015**, 11-12, 16.
14. J. Braesel, S. Götze, F. Shah, D. Heine, J. Tauber, C. Hertweck, A. Tunlid, **P. Stallforth**, D. Hoffmeister\*, “Three Redundant Synthetases Secure Redox-Active Pigments Production in the Basidiomycete *Paxillus involutus*” *Chem. Biol.* **2015**, 22, 1325.
15. S. Matthies, **P. Stallforth**, P. H. Seeberger\*, “Total Synthesis of Legionaminic Acid as Basis for Serological Studies” *J. Am. Chem. Soc.* **2015**, 137, 2848.
16. M. Cavallari<sup>+</sup>, **P. Stallforth**<sup>+</sup>, A. Kalinichenko<sup>+</sup>, D. Rathwell, T. M. A. Gronewold, A. Adibekian, L. Mori, R. Landmann, P. H. Seeberger\*, G. DeLibero\* “A semi-synthetic carbohydrate-lipid vaccine that protects against *S. pneumoniae* in mice” *Nat. Chem. Biol.* **2014**, 10, 950.
17. **P. Stallforth**, J. Clardy\*, “An Atlas for Drug Discovery” *Proc. Natl. Acad. Sci. USA*, **2014**, 111, 3655.
18. **P. Stallforth**, D. A. Brock, A. M. Cantley, X. Tian, D. C. Queller, J. E. Strassmann, J. Clardy\* “A bacterial symbiont is converted from an inedible producer of beneficial molecules into food by a single mutation in the *gacA* gene” *Proc. Natl. Acad. Sci. USA*, **2013**, 110, 14528. (*Highlighted in PNAS, Nat. Rev. Microbiol., BioTechniques, and other*)
19. **P. Stallforth**, J. Clardy\* “X-ray crystallography: one size fits most” *Nature*, **2013**, 495, 456.
20. **P. Stallforth**<sup>+</sup>, S. Matthies<sup>+</sup>, A. Adibekian, D. G. Gillingham, D. Hilvert, P. H. Seeberger\* “Chemoenzymatic Synthesis of Sialic Acid” *Chem. Commun.* **2012**, 48, 11987.
21. **P. Stallforth**, J. Clardy\* “Protein Evolution: When Two Become Three” *Curr. Biol.*, **2012**, 22, R685.
22. A. Adibekian, **P. Stallforth**, M.-L. Hecht, D. B. Werz, P. Gagneux, P. H. Seeberger\* “Comparative bioinformatics analysis of the mammalian and bacterial glycomes” *Chem. Sci.* **2010**, 2, 337.
23. T. Ohara, A. Adibekian, D. Esposito, **P. Stallforth** and P. H. Seeberger\* “Towards the synthesis of a *Yersinia pestis* cell wall polysaccharide: enantioselective synthesis of an L-glycero-D-manno-heptose building blocks” *Chem. Commun.* **2010**, 46, 4106.

24. R. Pragani, **P. Stallforth**, P. H. Seeberger\* “*De Novo* Synthesis of a 2-Acetamido-4-amino-2,4,6-trideoxy-D-galactose (AAT) Building Block for the Preparation of a *Bacteroides fragilis* A1 Polysaccharide Fragment” *Org. Lett.* **2010**, *12*, 1624.
25. D. G. Gillingham<sup>+</sup>, **P. Stallforth**<sup>+</sup>, A. Adibekian, P. H. Seeberger\*, D. Hilvert\* “Chemoenzymatic Synthesis of Differentially Protected 3-Deoxysugars” *Nature Chem.* **2010**, *2*, 102.
26. **P. Stallforth**, B. Lepenies, A. Adibekian, P. H. Seeberger\* “Carbohydrates – A Frontier in Medicinal Chemistry” *J. Med. Chem.* **2009**, *52*, 5561.
27. M.-L. Hecht, **P. Stallforth**, D. Varón-Silva, A. Adibekian, P. H. Seeberger\* “Recent Advances in Carbohydrate-based Vaccines” *Curr. Opin. Chem. Biol.* **2009**, *13*, 354.
28. A. Adibekian, M. S. M. Timmer, **P. Stallforth**, J. van Rijn, P. H. Seeberger\* “Stereocontrolled synthesis of fully functionalized D-glucosamine monosaccharides via a domino nitro Michael/Henry reaction” *Chem. Commun.* **2008**, *30*, 3549.
29. **P. Stallforth**, A. Adibekian, P. H. Seeberger\* “De novo Synthesis of a D-Galacturonic Acid Thioglycoside as Key to the Total Synthesis of a Glycosphingolipid from *Sphingomonas yanoikuyae*” *Org. Lett.* **2008**, *10*, 1573.

#### Patents

1. P. H. Seeberger, **P. Stallforth**, G. DeLibero, M. Cavallari, “Carbohydrate-Glycolipid Conjugate Vaccines” WO 2013/178236 A1

#### Invited Talks and Conference Presentations

- 2012 Hans Knöll Institute, Jena
- 2014 Leibniz Research Alliance, Bioactive Compounds and Biotechnology, Berlin
- 2014 Daimler and Benz Foundation, Ladenburg
- 2015 Harvard Medical School, Boston MA
- 2015 Bioorganic Symposium, Hamburg
- 15. 01. 2016 University of Mainz
- 14. 03. 2016 VAAM Conference, Jena
- 04. 08. 2016 Summer Academy, Studienstiftung, Neubeuern
- 10. 10. 2016 Small Molecules and Microbes, Konstanz
- 12. 11. 2016 Peter Seeberger Symposium, Berlin
- 08. 12. 2016 University of Düsseldorf
- 02. 03. 2017 University of Geneva
- 14. 03. 2017 Chemiedozententagung, Marburg
- 16. 03. 2017 Symposium Biosynthetic Strategies, Jena
- 22. 03. 2017 MiCom, Jena
- 10. 04. 2017 Leibniz Research Alliance, Bioactive Compounds and Biotechnology, Freising
- 04. 05. 2017 New England Biolabs, Ipswich MA
- 13. 06. 2017 Bioorganic Gordon Research Conference, Andover NH
- 22. 08. 2017 Dictyostelium Conference, Geneva
- 21. 09. 2017 2017 Bioorganic Symposium, Berlin
- 11. 01. 2018 MPI for Chemical Ecology, Jena
- 31. 01. 2018 Advances in Chemical Biology, Frankfurt
- 05. 03. 2018 Chemiedozententagung, Jena
- 19. 03. 2018 MiCom, Jena
- 27. 03. 2018 University of Utrecht, NL
- 05. 04. 2018 MPI for Chemical Ecology, Jena
- 24. 04. 2018 Leibniz Research Alliance, Bioactive Compounds and Biotechnology, Halle
- 28. 05. 2018 Max Planck Institute for Terrestrial Microbiology, Marburg

#### Upcoming Presentations

- 17. 07. 2018 Freie Universität Berlin
- 26. 07. 2018 University of Tübingen