

# Dr. Daniel Friedrich

né Stöppler, email: [daniel\\_friedrich@fas.harvard.edu](mailto:daniel_friedrich@fas.harvard.edu)

Research Fellow at Harvard University and Dana-Farber Cancer Institute

Department of Molecular and Cellular Biology

52 Oxford Street, Cambridge, MA 02138 USA

Links to ORCID: [0000-0003-2540-1663](https://orcid.org/0000-0003-2540-1663) and Google Scholar: [Daniel Friedrich \(né Stöppler\)](#)

*Curriculum Vitae as of September 2019*

## EDUCATION

---

2014 – 2018 Dr. rer. nat. (*summa cum laude*), Free University of Berlin, Germany

*Biochemistry, Thesis title: 'Establishing advanced MAS NMR methods to investigate protonation dynamics in proteins'*

2011 – 2014 Diploma (equiv. to Master of Science), Free University of Berlin, Germany

*Biochemistry, Thesis title: 'Interaction studies of finger domains and amyloid CsgA fibrils using solid-state NMR'*

2008 – 2011 Bachelor of Science, Universities of Potsdam and Hamburg, Germany

*Life Sciences and Biochemistry, Thesis title: 'The orphan receptors CG42796 and CG18208 of Drosophila melanogaster – a molecular characterization'*

## RESEARCH EXPERIENCE

---

2019 – present Harvard University & Dana-Farber Cancer Institute, Cambridge & Boston, MA USA

*Research Fellow with Prof. Haribabu Arthanari, Prof. Victoria D'Souza and Prof. Gerhard Wagner*

2019 Leibniz Institute of Molecular Pharmacology (FMP), Berlin, Germany

*Postdoctoral Researcher with Prof. Hartmut Oschkinat*

2014 – 2018 Leibniz Institute of Molecular Pharmacology (FMP) and SFB 1078, Berlin, Germany

*Graduate Researcher with Prof. Hartmut Oschkinat*

## AWARDS AND SCHOLARSHIPS

---

- 2019 Human Frontier Science Program (HFSP) Long-Term Fellowship
- 2019 European Molecular Biology Organization (EMBO) Long-Term Fellowship
- 2019 German Research Foundation (DFG) Research Fellowship
- 2017 Travel Scholarship, 20<sup>th</sup> ISMAR Meeting, Québec City, Canada
- 2017 Travel Scholarship, Frontiers of NMR in Life Sciences, Keystone, CO USA
- 2016 Travel Scholarship, 57<sup>th</sup> Experimental NMR Conference, Pittsburgh, PA USA
- 2015 Travel Scholarship, 9<sup>th</sup> Alpine Conference on Solid-state NMR, Chamonix, France

## HONORS AND PRIZES

---

- 2019 Ernst Award of the German Chemical Society
- 2018 Dr. rer. nat. awarded with highest distinction (*summa cum laude*)
- 2018 Selected for participation at the 68<sup>th</sup> Lindau Nobel Laureate Meeting
- 2017 Prize for the best talk, FMP/MDC PhD Symposium, Schorfheide, Germany
- 2017 Young Scientist Award of the International Society of Magnetic Resonance (ISMAR)
- 2015 Prize for the best talk, FMP/MDC PhD Symposium, Bad Saarow, Germany
- 2015 Prize for the best talk, 3<sup>rd</sup> Annual SFB 1078 Retreat, Goslar, Germany
- 2014 Diploma in Biochemistry with best grades possible

## MEMBERSHIPS, ORGANIZATION AND TEACHING

---

Member of the Groupment AMPERE since 2016

Member of the German Chemical Society (*Gesellschaft Deutscher Chemiker*, GDCh) since 2014

Member of the German Society for Biochemistry and Molecular Biology (*Gesellschaft für Biochemie und Molekularbiologie*, GBM) since 2013

Organizer of the FMP/MDC PhD Symposium in 2016

Elected as PhD Representative in 2016 at Leibniz Institute of Molecular Pharmacology (FMP), Berlin, Germany

Teaching for Master Students at Free University of Berlin, Germany, in:

- Biological NMR Spectroscopy (both summer and winter semesters in 2015, 2016, 2017 and 2018)
- Biophysical Methods (both summer and winter semesters in 2015, 2016, 2017 and 2018)

## PUBLICATIONS

---

9. **Daniel Friedrich**, Florian N. Brünig, Andrew J. Nieuwkoop, Roland R. Netz, Peter Hegemann and Hartmut Oschkinat:  
'Collective exchange processes reveal an active site proton cage in bacteriorhodopsin', *Communications Biology*, 2019, in revision
8. **Daniel Stöppler**(#), Alex Macpherson(#), Susanne Smith-Penzel, Nicolas Basse, Fabien Lecomte, Hervé Deboves, Richard D. Taylor, Tim Norman, John Porter, Lorna C. Waters, Marta Westwood, Ben Cossins, Katharine Cain, James White, Robert Griffin, Christine Prosser, Sebastian Kelm, Amy H. Sullivan, David Fox III, Mark D. Carr, Alistair Henry, Richard Taylor, Beat H. Meier, Hartmut Oschkinat and Alastair Lawson:  
'Insight into small molecule binding to the neonatal Fc receptor by X-ray crystallography and 100 kHz magic-angle-spinning NMR', *PLOS Biology*, 2018, 16(5), e2006192, (#) **Equal contribution**
7. Michel-Andreas Geiger(#), Anil P. Jagtap(#), Monu Kaushik(#), Han Sun, **Daniel Stöppler**, Snorri Th. Sigurdsson, Björn Corzilius and Hartmut Oschkinat:  
'Efficiency of water-soluble nitroxide biradicals for dynamic nuclear polarization in rotating solids at 9.4 T: bcTol-M and cyolyl-TOTAPOL as new polarizing agents', *Chemistry - A European Journal*, 2018, 24(51), pp 13485-13494, (#) **Equal contribution**
6. Anne Diehl(#), Yvette Roske(#), Linda Ball, Anup Chowdhury, Matthias Hiller, Noel Molière, Regina Kramer, **Daniel Stöppler**, Catherine L. Worth, Brigitte Schlegel, Martina Leidert, Nils Cremer, Natalja Erdmann, Daniel Lopez, Heike Stephanowitz, Eberhard Krause, Barth-Jan van Rossum, Peter Schmieder, Udo Heinemann, Kürşad Turgay, Ümit Akbey and Hartmut Oschkinat:  
'Structural changes of TasA in biofilm formation of *Bacillus subtilis*', *Proceedings of the National Academy of Sciences USA*, 2018, 115(13), pp 3237-3242, (#) **Equal contribution**
5. Wolfgang Blenau, **Daniel Stöppler**, Sabine Balfanz, Markus Thamm and Arnd Baumann:  
'Dm5-HT<sub>2B</sub>: Pharmacological Characterization of the Fifth Serotonin Receptor Subtype of *Drosophila melanogaster*', *Frontiers in Systems Neuroscience*, 2017, 11 (28), pp 1-11
4. **Daniel Stöppler**, Chen Song, Barth-Jan van Rossum, Michel-Andreas Geiger, Christina Lang, Maria-Andrea Mroginski, Anil P. Jagtap, Snorri Th. Sigurdsson, Jörg Matysik, Jon Hughes and Hartmut Oschkinat:  
'Dynamic Nuclear Polarization Provides New Insights into Chromophore Structure in Phytochrome Photoreceptors', *Angewandte Chemie International Edition*, 2016, 55 (52), pp 16017-16020
3. Michel-Andreas Geiger(#), Marcella Orwick-Rydmark(#), Katharina Märker, W. Trent Franks, Dmitry Akhmetzyanov, **Daniel Stöppler**, Maximilian Zinke, Edgar Specker, Marc Nazaré, Anne Diehl, Barth-Jan van Rossum, Fabien Aussenac, Thomas Prisner, Ümit Akbey and Hartmut Oschkinat:  
'Temperature dependence of cross-effect dynamic nuclear polarization in rotating solids: advantages of elevated temperatures', *Physical Chemistry Chemical Physics*, 2016, 18, pp 30696-30704, (#) **Equal contribution**
2. Anil P. Jagtap, Michel-Andreas Geiger, **Daniel Stöppler**, Marcella Orwick-Rydmark, Hartmut Oschkinat and Snorri Th. Sigurdsson:  
'bcTol: a highly water-soluble biradical for efficient dynamic nuclear polarization of biomolecules', *Chemical Communications*, 2016, 52, pp 7020-7023
1. Sara Bruun(#), **Daniel Stoeppler**(#), Anke Keidel, Uwe Kuhlmann, Meike Luck, Anne Diehl, Michel-Andreas Geiger, David Woodmansee, Dirk Trauner, Peter Hegemann, Hartmut Oschkinat, Peter Hildebrandt and Katja Stehfest:  
'Light-Dark Adaptation of Channelrhodopsin Involves Photoconversion between the all-*trans* and 13-*cis* Retinal Isomers', *Biochemistry*, 2015, 54 (35), pp 5389-5400, (#) **Equal contribution**

## RESEARCH PRESENTATIONS

---

38. **Invited talk (award lecture)**, EUROISMAR Joint Conference and GDCh FGMR Discussion Meeting, Berlin, Germany, *August 2019*
37. **Invited talk**, Wellcome Center for Cellular Biology, University of Edinburgh, UK, *April 2019*
36. Poster presentation, Advanced Isotopic Labeling Methods for Integrated Structural Biology, Grenoble, France, *March 2019*
35. **Invited talk**, 7<sup>th</sup> Annual SFB 1078 Retreat, Schwanenwerder, Germany, *February 2019*
34. Poster presentation, 68<sup>th</sup> Lindau Nobel Laureate Meeting, Lindau, Germany, *June 2018*
33. **Talk**, PostDoc Day 2018, Max-Delbrück Center for Molecular Medicine Berlin, Germany, *June 2018*
32. Poster presentation, 59<sup>th</sup> Experimental NMR Conference, Orlando, FL USA, *April 2018*
31. **Talk** and poster presentation, 6<sup>th</sup> Annual SFB 1078 Retreat, Schloss Rauischholzhausen, Germany, *March 2018*
30. **Invited talk**, Department of Pharmaceutical Chemistry, University of California, San Francisco, CA USA, *November 2017*
29. **Invited talk**, Department of Chemistry, University of California, Santa Cruz, CA USA, *November 2017*
28. **Invited talk**, Department of Chemistry, Stanford University, Stanford, CA USA, *November 2017*
27. **Talk** and poster presentation, 5<sup>th</sup> Annual SFB 1078 Retreat, Elstal, Germany, *October 2017*
26. **Talk**, FMP/MDC PhD Symposium, Schorfheide, Germany, *September 2017*
25. **Invited talk**, Department of Biochemistry, Brandeis University, Waltham, MA USA, *August 2017*
24. **Invited talk**, Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA USA, *August 2017*
23. **Invited talk**, Dana-Farber Cancer Institute, Boston, MA USA, *August 2017*
22. **Invited lecture**, Department of Biology and Chemistry, University of Giessen, Germany, *July 2017*
21. **Talk** and poster presentation, 20<sup>th</sup> Meeting of the International Society of Magnetic Resonance, Québec City, Canada, *July 2017*
20. **Invited talk**, *Institut de Biologie et Chimie des Protéines*, University of Lyon, France, *June 2017*
19. **Invited talk**, *Institut de Biologie Structurale*, Grenoble, France, *June 2017*
18. Poster presentation, 2<sup>nd</sup> iNEXT Annual User Meeting, Brno, Czech Republic, *May 2017*
17. **Talk** and poster presentation, Frontiers of NMR in Life Sciences, Keystone, CO USA, *March 2017*
16. Poster presentation, AMPERE Biological Solid-state NMR School, Palma, Spain, *October 2016*
15. **Invited talk**, EMBO Conference on Retinal Proteins, Potsdam, Germany, *October 2016*
14. Poster presentation, FMP/MDC PhD Symposium, Joachimsthal, Germany, *September 2016*
13. Poster presentation, 57<sup>th</sup> Experimental NMR Conference, Pittsburgh, PA USA, *April 2016*
12. Poster presentation, 4<sup>th</sup> Annual SFB 1078 Retreat, Schmöckwitz, Germany, *March 2016*
11. **Invited lecture**, SFB 1078 Graduate Research Seminar, Berlin, Germany, *October 2015*
10. **Invited talk**, 6<sup>th</sup> Joint MX-Day, Berlin, Germany, *September 2015*
9. **Talk**, FMP/MDC PhD Symposium, Bad Saarow, Germany, *September 2015*
8. Poster presentation, 9<sup>th</sup> Alpine Conference on Solid-state NMR, Chamonix, France, *September 2015*
7. Poster presentation, Hyperpolarized Magnetic Resonance International DNP Symposium, Eegmond aan Zee, Netherlands, *August 2015*
6. **Talk** and poster presentation, 3<sup>rd</sup> Annual SFB 1078 Retreat, Goslar, Germany, *March 2015*
5. Poster presentation, EBSA Solid-State NMR School, Munich, Germany, *November 2014*
4. Poster presentation, 36<sup>th</sup> GDCh Magnetic Resonance Meeting, Berlin, Germany, *September 2014*
3. Poster presentation, EMBO Practical Course Multidimensional NMR in Structural Biology, Joachimsthal, Germany, *August 2014*
2. Poster presentation, EUROMAR, Zürich, Switzerland, *July 2014*
1. Poster presentation, 2<sup>nd</sup> Annual SFB 1078 Retreat, Goslar, Germany, *March 2014*