

Hon.-Prof. Dr. Helmut Grubmüller

Personal Data

Title	Hon.-Prof. Dr.
First name	Helmut
Name	Grubmüller
Current position	Director and Department Head
Current institution(s)/site(s), country	Theoretical and Computational Biophysics Department, Max Planck Institute for Multidisciplinary Sciences, Göttingen, Germany
Identifiers/ORCID	orcid.org/0000-0002-3270-3144

Qualifications and Career

<u>Stages</u>	<u>Periods and Details</u>
Degree programme	Physics, 1985 – 1990, TU Munich, Germany
Doctorate	1994 Physics, TU Munich, Germany
Stages of academic/professional career	2010 – 2011 Executive Director, MPI for Biophysical Chemistry, Göttingen, Germany Since 2003 Director and Head, MPI for Multidisciplinary Sciences (formerly MPI for Biophysical Chemistry), Göttingen, Germany 2003 Associate Professor, EPFL, Switzerland 1998 – 2003 Head of the Theoretical Molecular Biophysics Group, MPI for Biophysical Chemistry, Göttingen 1997 Postdoc, ETH Zürich, Switzerland 1994 – 1998 Postdoc, LMU Munich 1990 – 1991 Research visit, University of Illinois at Urbana/Champaign, USA

Activities in the Research System

Committee involvement & activities in the field of academic self-governance:

2019 – 2022	Chair, German Biophysical Society
2018 – 2025	Faculty Member of the Max Planck Research School Matter to Life
2016 – 2019	Council of Scientists, Human Frontiers Science Program
2015 – 2018	Vice-Chair, German Biophysical Society
2015 – 2017	President, European Biophysical Societies' Association
2015 – 2017	Chair, Biological Physics Division of the German Physical Society
2013 – 2015	Vice President, European Biophysical Societies' Association
2013 – 2015	Vice Chair, Biological Physics Division, German Physical Society
2011 – 2020	Executive Board Member, Georg August University School of Science
2011 – 2017	Secretary and Vice Chair, International Union of Pure and Applied Physics, Commission C6: Biological Physics
2008 – 2017	Board Member Commission C6: Biological Physics, International Union of Pure and Applied Physics
Since 2008	Executive Board Member, Göttingen Graduate School for Neurosciences, Biophysics and Molecular Biosciences, University of Göttingen

Since 2007	Executive Committee Member, European Biophysical Societies' Association
2007 – 2020	Spokesperson, International Max Planck Research School for Physics of Biological and Complex Systems
Since 2005	Advisory Board Member, Fritz Haber Minerva Research Center for Molecular Dynamics, Hebrew University, Jerusalem
2004 – 2011	Elected Review Board Member, Basic Biological and Medical Research, DFG
Since 1998	Teaching 2-Semester Course 'Theoretical Biophysics', Göttingen University (each year)
1997 – 2000	Panel Member, German Biophysical Society

Academic Distinctions: Member of the German National Academy of Science Leopoldina (since 2022); Honorary Professor for Physics at Göttingen University (since 2005); Rolf Sammet Laureate, Frankfurt University (2013); EMBO-Fellowship, ETH Zurich, Switzerland (1997).

Scientific Results

Citations: 33137, h-index: 85, i10-index: 209 ([Google Scholar](#), 21.03.2024)

Category A (* corresponding author)

1. L.V. Bock, **H. Grubmüller*** "Effects of cryo-EM cooling on structural ensembles" *Nat. Commun.* **2022**, 13, 1709. DOI: [10.1038/s41467-022-29332-2](https://doi.org/10.1038/s41467-022-29332-2).
2. M.H. Kolář*, G. Nagy, J. Kunkel, S.M. Vaiana, L.V. Bock, **H. Grubmüller*** "Folding of VemP into translation-arresting secondary structure is driven by the ribosome exit tunnel" *Nucleic Acids Res.* **2022**, 50, 2258–2269. DOI: [10.1093/nar/gkac038](https://doi.org/10.1093/nar/gkac038).
3. M. Igaev*, **H. Grubmüller*** "Bending-torsional elasticity and energetics of the plus-end microtubule tip" *Proc. Natl. Acad. Sci. USA* **2022**, 119, e2115516119. DOI: [10.1073/pnas.2115516119](https://doi.org/10.1073/pnas.2115516119).
4. T. Hett, T. Zbik, S. Mukherjee, H. Matsuoka, W. Bönigk, D. Klose, C. Rouillon, N. Brenner, S. Peuker, R. Klement, H.-J. Steinhoff, **H. Grubmüller**, R. Seifert, O. Schiemann*, U.B. Kaupp* "Spatiotemporal resolution of conformational changes in biomolecules by combining pulsed electron–electron double resonance spectroscopy with microsecond freeze-hyperquenching" *J. Am. Chem. Soc.* **2021**, 143, 6981–6989. DOI: [10.1021/jacs.1c01081](https://doi.org/10.1021/jacs.1c01081).
5. F. Rico*, A. Russek, L. González, **H. Grubmüller***, S. Scheuring* "Heterogeneous and rate dependent streptavidin-biotin unbinding revealed by high-speed force spectroscopy and molecular dynamics simulations" *Proc. Natl. Acad. Sci. USA* **2019**, 116, 6594–6601. DOI: [10.1073/pnas.1816909116](https://doi.org/10.1073/pnas.1816909116).
6. L.V. Bock, N. Caliskan, N. Korniy, F. Peske, M.V. Rodnina, **H. Grubmüller*** "Thermodynamic control of –1 programmed ribosomal frameshifting" *Nat. Commun.* **2019**, 10, 4598. DOI: [10.1038/s41467-019-12648-x](https://doi.org/10.1038/s41467-019-12648-x).
7. J. Huang, S. Rauscher, G. Nawrocki, T. Ran, M. Feig, B.L. de Groot, **H. Grubmüller**, A.D. MacKerell* "CHARMM36m: An improved force field for folded and intrinsically disordered proteins" *Nat. Methods* **2017**, 14, 71–73. DOI: [10.1038/nmeth.4067](https://doi.org/10.1038/nmeth.4067).

8. N. Fischer*, P. Neumann, L.V. Bock, C. Maracci, Z. Wang, A. Paleskava, A.L. Konevega, G.F. Schröder, **H. Grubmüller**, R. Ficner, M.V. Rodnina, H. Stark* “The pathway to GTPase activation of elongation factor SelB on the ribosome” *Nature* **2016**, 540, 80–85. DOI: [10.1038/nature20560](https://doi.org/10.1038/nature20560).
9. H.J. Risselada*, G. Bubnis, **H. Grubmüller** “Expansion of the fusion stalk and its implication for biological membrane fusion” *Proc. Natl. Acad. Sci. USA* **2014**, 111, 11043–11048. DOI: [10.1073/pnas.1323221111](https://doi.org/10.1073/pnas.1323221111).
10. L.V. Bock, C. Blau, G.F. Schröder*, I.I. Davydov, N. Fischer, H. Stark, M.V. Rodnina, A.C. Vaiana*, **H. Grubmüller*** “Energy barriers and driving forces in tRNA translocation through the ribosome” *Nat. Struct. Mol. Biol.* **2013**, 20, 1390–1396. DOI: [10.1038/nsmb.2690](https://doi.org/10.1038/nsmb.2690).