

Curriculum vitae

PERSONAL INFORMATION

Last, First Name	Kuster, Bernhard	Address:	Technical University of Munich (TUM)
ORCID:	0000-0002-9094-1677		School of Life Sciences
Researcher ID:	Q-6031-2016		Chair for Proteomics and Bioanalytics
Date of birth:	25.10.1967		Emil-Erlenmeyer-Forum 5
Nationality:	German		85354 Freising, Germany
Web site:	http://proteomics.wzw.tum.de		

• EDUCATION

1997 D. Phil. in Biochemistry, Department for Biochemistry, University of Oxford, UK
1994 Diploma in Chemistry, Department of Chemistry, University of Cologne, Germany

• CURRENT POSITION(S)

2007 – present Full Professor (W3), Chair of Proteomics and Bioanalytics, TUM School of Life Sciences
Weihenstephan, Department of Biosciences, Technical University of Munich, Germany
2008 – present Member of the faculty of the TUM School of Medicine

• PREVIOUS POSITIONS

2009 – 2011 Visiting Professor, University of Bergen, Norway
2000 – 2007 VP Analytical Sciences and Informatics, Cellzome (now GSK), Heidelberg, Germany
2000 – 2000 Associate Research Professor, Department for Molecular Biology, University of Southern
Denmark, Odense, Denmark
1997 – 1999 Postdoc at the European Molecular Biology Laboratory (EMBL), Heidelberg, Germany and
Department for Molecular Biology, University of Southern Denmark, Odense, Denmark

• FELLOWSHIPS AND AWARDS

2018 – present Carl von Linde Senior Fellow, TU Munich Institute for Advanced Studies
2014 Discovery in Proteomic Sciences Award, Human Proteome Organization
2014 Heinz Maier-Leibnitz Award, Technical University of Munich
1998 Mattauch-Herzog Award, German Mass Spectrometry Society
1997 – 1999 Long-term fellowship, European Molecular Biology Organization (EMBO)
1994 – 1997 PhD scholarship, Biotechnology and Biological Sciences Research Council (BBSRC), UK
and PhD scholarship, German Academic Exchange Service (DAAD), Germany

• INSTITUTIONAL RESPONSIBILITIES

2016 – 2018 Vice Dean, School of Life Sciences, TU Munich, Germany
2017 – present Member of the Scientific Council of the TU Munich Graduate School
2017 – present Member of the Scientific Council of the TU Munich International Graduate School of
Science and Engineering
2011 – present Co-Director Bavarian Center for Biomolecular Mass Spectrometry (BayBioMS), TU Munich
2010 – 2017 Member of the executive committee of the Graduate School Experimental Medicine, Faculty
of Medicine, TU Munich, Germany
2009 – present Head of the Department for Biosciences, TUM School of Life Sciences Weihenstephan, TU
Munich, Germany
2009 – present Member of the Faculty Board of the TUM School of Life Sciences Weihenstephan, TU
Munich, Germany
2009 – present Chair/member of 17 Faculty Search Committees, TU Munich, Germany
2009 – present Co-Organizer of the Internal Seminar Series 'Protein Science Colloquium', TU Munich,
Germany
2007 – present Faculty member, TU Munich, Germany
2007 – present Graduate Student Advisor, TU Munich, Germany

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2007 – present 20 Postdocs, 35 PhD students, and 49 Master Students, TUM School of Life Sciences Weihenstephan, Technical University of Munich, Germany

- **TEACHING ACTIVITIES**

2007 – present Full Professor (W3), with full teaching load of 9h/week teaching during term time, lectures, seminars, practical courses in biochemical analysis and proteomics, TUM School of Life Sciences Weihenstephan, Technical University of Munich, Germany

2004 – present Lecturer at dozens of educational events including multiple EMBO courses

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2019 Co-organizer, 13th International Symposium on Mass Spectrometry in the Health & Life Sciences, San Francisco, USA

2017 Co-organizer, 12th International Symposium on Mass Spectrometry in the Health & Life Sciences, San Francisco, USA

2011 – present Co-organizer, 5-12th European Summer School, FEBS Advanced Lecture Course – Advanced Proteomics, Italy

- **REVIEWING ACTIVITIES**

2016 – present Scientific Advisory Board, Danish national mass spectrometry platform for functional proteomics

2015 – present Associate Editor, Molecular and Cellular Proteomics

2014 Evaluator, DFG Collaborative Research Centre Transregio 34 Functional genomics, Universities of Greifswald, Münster, Tübingen, Würzburg, Germany

2011 – 2017 Scientific Advisory Board, EU FP7 project: Protein Interaction Machines in Oncogenic EGF Receptor Signalling (PRIMES)

2012 – 2015 Scientific Advisory Board, Non-Linear Dynamics Ltd, Newcastle, UK

2012 – 2014 Scientific Advisory Board, UniProt, The Universal Protein Resource UniProt is a collaboration between the European Bioinformatics Institute (EMBL-EBI), the SIB Swiss Institute of Bioinformatics and the Protein Information Resource (PIR)

2007 – 2010 Scientific Advisory Board, Cellzome (now GlaxoSmithkline), Heidelberg, Germany

2006 – present Editorial Boards Mol Cell Proteomics, Anal Bioanal Chem

2004 – present Evaluator and panel member for numerous grant agencies throughout Germany, Europe and North America; total reviewed grant volume >100 ME

1997 – present Reviewer for 20+ scientific journals including Nature, Science, Cell

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

1995 – present Member of the German Chemical Society, the German Society for Mass Spectrometry, the American Society for Mass Spectrometry, the American Society for Biochemistry and Molecular Biology, the German Society for Proteome Research

- **ENTREPRENEURIAL ACTIVITIES**

2014 Co-founder of the biotechnology firm OmicScouts; no operational role in the company.

- **TEN YEARS TRACK-RECORD**

Throughout my career, I had the opportunity to work with many excellent scientists in first rate research organisations that have enabled me to make a number of significant contributions towards science. The seven years in a leadership role in the biotech industry prior to joining the TU Munich as a full professor (at the age of 39) provided me with invaluable managerial experience. The past 10 years at the TU Munich allowed me to build an international and interdisciplinary research team that has delivered first rate work and resulting publications. I am very well connected with local and international investigators both in my field and beyond so that my expertise and advice is frequently called upon by grant agencies and scientific journals. It is gratifying to observe that many of the computational tools my team has built and the reagents and workflows we have generated are now used by many laboratories around the world. I continue to invest all my energy in scientific ideas and talented people. An ERC Advanced Grant would come at a very good time as I believe that I am now entering the most productive phase of my scientific career. The scope of an ERC Advanced Grant is to go after a big new idea that will have strong impact on science and society. The work proposed in

this application is the next big thing for me and will be *THE* defining research theme of my career for the next 10 years. I strongly believe that great progress can be made in that time frame towards implementing proteomics in cancer care. Five years back few people would have thought it possible for a single group to assemble a draft human proteome, but my team did (Nature 2014). Similarly, few people would have thought it possible for a single laboratory to characterize hundreds of cancer drugs for their selectivity in light of 100,000 published papers on these molecules, but we did (Science 2017). My learning from these visionary, cross-disciplinary and perhaps daring projects is that success in such endeavours needs a small team of dedicated and skilled people who share the same vision, top notch technology so that high quality data can be generated and turned into knowledge, a network of excellent collaborators who are willing to contribute to something big even if they will not be in the front row in the end and a good portion of courage that gives confidence that the team can actually do it.

- **CURRENT GRANTS**

<i>Project Title</i>	<i>Funding source</i>	<i>Amount (Euros)</i>	<i>Period</i>	<i>Role of the PI</i>	<i>Relation to current ERC proposal²</i>
SFB1321 (Pancreas cancer)	DFG (DE)	340,000	07/2018 – 06/2022	PI, subproject	No overlap
SFB1309 (Epigenetic protein and RNA modifications)	DFG (DE)	466,000	07/2018 – 06/2022	PI, subproject	No overlap
SFB924 (Plant Biology)	DFG (DE)	312,000	07/2015 – 06/2019	PI, subproject	No overlap
DFG KU2547/13-1 (chemical probes)	DFG (DE)	54,000	05/2018 – 06/2021	PI, subproject	No overlap
CIPSM (chemical proteomics)	DFG (DE)	1,260,000	05/2009 – 10/2019	PI, subproject	No overlap
DKTK* (German Consortium for Translational Cancer Research)	BMBF (DE)	980,000	01/2011 – open	PI, Platform coordinator	Provision of samples from MASTER trial
InfectEra (Human Microbiome)	EU/BMBF	267,000	05/2016 – 04/2019	PI, subproject	No overlap
ProteomeTools (reagents, data and algorithms)	BMBF (DE)	2,057,000	07/2015 – 03/2019	PI, coordinator	No overlap, resources available to project
ProteomicsDB (Database)	SAP (DE)	1,177,000	09/2015 – 11/2018	PI, coordinator	No overlap, computational infrastructure available to project

* These are institutional funds of the German Cancer Center that are allocated to the PI's research.

• **TEN REPRESENTATIVE PUBLICATIONS AS SENIOR AUTHOR**

(180 total peer reviewed publications; >26,000 total citations; H-index 63; Cumulative impact factor 1,606)

Publication	IF ¹ /Cit ²
Schmidt, T., Samaras, P., Frejno, M., Gessulat, S., Barnert, M., Kienegger, H., Krcmar, H., Schlegl, J., Ehrlich, H.-C., Aiche, S., Kuster, B.* & Wilhelm, M.* ProteomicsDB (2018) <i>Nucleic Acids Res</i> 46 (D1), D1271-D1281.	11.6 13
Klaeger, S., Heinzlmeir, S., Wilhelm, M., Polzer, H., Vick, B., Koenig, P.-A., Reinecke, M., Ruprecht, B., Petzoldt, S., Meng, C., Zecha, J., Reiter, K., Qiao, H., Helm, D., Koch, H., Schoof, M., Canevari, G., Casale, E., Re Depaolini, S., Feuchtinger, A., Wu, Z., Schmidt, T., Rueckert, L., Becker, W., Huenges, J., Garz, A.-K., Gohlke, B.-O., Zolg, D. P., Kayser, G., Vooder, T., Preissner, P., Hahne, H., Tonisson, N., Kramer, K., Goetze, K., Bassermann, F., Schlegl, J., Ehrlich, H.-C., Aiche, S., Walch, A., Greif, P.A., Schneider, S., Felder, E. R., Ruland, J., Medard, G., Jeremias, I., Spiekermann, K. & Kuster, B. The target landscape of clinical kinase drugs (2017) <i>Science</i> 358, pii: eaan4368.	41.1 62
Frejno, M., Zenezini Chiozzi, R., Wilhelm, M., Koch, H., Zheng, R., Klaeger, S., Ruprecht, B., Meng, C., Kramer, K., Jarzab, A., Heinzlmeir, S., Johnstone, E., Domingo, E., Kerr, D., Jesinghaus, M., Slotta-Huspenina, J., Weichert, W., Knapp, S., Feller, S. M. & Kuster, B. Pharmacoproteomic characterisation of human colon and rectal cancer (2017) <i>Mol Syst Biol</i> 13, 951-965.	9.8 2
Zolg, D. P., Wilhelm, M., Schnatbaum, K., Zerweck, J., Knaute, T., Delanghe, B., Bailey, D. J., Gessulat, S., Ehrlich, H.-C., Weininger, M., Yu, Y., Schlegl, J., Kramer, K., Schmidt, T., Kusebauch, U., Deutsch, E. W., Aebersold, R., Moritz, R. L., Wenschuh, H., Moehring, T., Aiche, S., Huhmer, A., Reimer, U. & Kuster, B. Building Proteometools based on a complete synthetic human proteome (2017) <i>Nat Methods</i> 14, 259-262.	25.1 53
Heinzlmeir, S, Kudlinzki, D., Sreeramulu, S., Klaeger, S., Gande, S., Linhard, V., Wilhelm, M., Qiao, H., Helm, D., Ruprecht, B., Saxena, K., Médard, G., Schwalbe, H. & Kuster, B. Chemical proteomics and structural biology define EPHA2 inhibition by clinical kinase drugs (2016) <i>ASC Chem Biol</i> 16, 4490-4504.	5.0 16
Wilhelm, M., Schlegl, J., Hahne, H., Moghaddas Gholami, A., Lieberenz, M., Savitski, M.M., Ziegler, E., Butzmann, L., Gessulat, S., Marx, h., Mathieson, T., Lemeer, S., Schnatbaum, K, Reimer, U., Wenschuh, H., Mollenhauer, M., Slotta-Huspenina, J., Boese, J.-H., Bantscheff, M., Gerstmair, A., Faerber, F. & Kuster, B. Mass spectrometry based draft of the human proteome (2014) <i>Nature</i> , 509, 582-587.	40.1 1,121
Moghaddas Gholami, A., Hannes Hahne, H., Wu, Z., Auer, F., Meng, C., Wilhelm, M. & Kuster, B. Global proteome analysis of the NCI-60 cell line panel (2013) <i>Cell Reports</i> , 4, 609-620.	7.9 186
Hahne, H., Pachi, F., Ruprecht, B., Maier, S.K., Klaeger, S., Helm, D., Médard, G., Wilm, M., Lemeer, S. & Kuster, B. DMSO enhances electrospray response boosting sensitivity of proteomic experiments (2013) <i>Nat Methods</i> 10, 989-991.	25.3 116
Marx, H., Lemeer, S., Schliep, J. E., Matheron, L., Mohammed, S., Cox, J., Mann, M., Heck, A. J. R. & Kuster, B. A large synthetic peptide and phosphopeptide library for mass spectrometry-based proteomics (2013) <i>Nat Biotechnol</i> , 31, 557-564.	43.1 109
Mallick, P., & Kuster, B. Proteomics: a pragmatic perspective (2010) <i>Nat Biotechnol</i> 28, 695-709.	32.4 384

¹ Impact factor (IF) according to ISI; ² Number of citations (Cit) according to Google Scholar

* Denotes co-corresponding authors

• **INVITED PRESENTATIONS (SELECTED FROM >100 PAST 10 YEARS)**

International conferences (selected, recent)

2018	European Proteomics Association conference in Santiago de Compostella Spain, Welcome Genome Campus conference on proteomics in cell biology in Hinxton UK,
2017	FEBS congress in Jerusalem, Israel; HUPO congress in Dublin Ireland, 12 th International symposium on mass spectrometry in the health and life sciences in San Francisco USA
2016	Analytica conference in Munich, Germany; Americian Society for Biochemistry and Molecular Biology in San Diego USA, European Proteomics Association conference in Istanbul Turkey
2015	Keystone Symposium: The human proteome in Stockholm Sweden; AAAS conference in San Diego USA; International Chemical Biology Society meeting in Berlin Germany
2014	HUPO congress in Madrid Spain; 11 th Int. Symposium on Mass Spectrometry in the Health & Life Sciences, San Francisco, USA

Schools, Research Institutions, Pharma companies (selected, recent)

2018	EMBO course Odense Denmark, Retreat of the Amsterdam Cancer Center, Center for Experimental Medicine Vienna, Frankfurt Cancer Conference; Merck Darmstadt
2017	University of Bern, Karolinska University, University of Oxford, University of Toronto, Abvie

	Ludwigshafen, BASF Ludwigshafen, Bayer Berlin, Merck US Boston, ThermoFisher San Jose
2016	University of Utrecht, University of Cambridge UK, Imperial College London, University of Gent, University of Montreal, Genentech South San Francisco, LEO Pharma Copenhagen,
2015	EMBO course Odense, University of Amsterdam, University of Dundee, University of Odense, University of Toronto, Science for Life Lab Stockholm, Merck US, Roche, Basel, SAP Potsdam,
2014	Harvard University, Federal University of Brazil Sao Paolo, Lund University, University of Vienna, Italian Proteomics Society meeting, Waters Manchester, AnstraZeneca Moelndal

• **ORGANISATION OF INTERNATIONAL CONFERENCES/SUMMER SCHOOLS**

2011-18	5-12 th European Summer School, FEBS Advanced Lecture Course – Advanced Proteomics, Italy
2017/19	12 th Int. Symposium on Mass Spectrometry in the Health & Life Sciences, San Francisco, USA

• **MAJOR CONTRIBUTIONS TO THE EARLY CAREERS OF EXCELLENT RESEARCHERS**

Simone Lemeer	2008 – 2012, Group leader in Kuster lab; now tenured Assoc. Prof. at Utrecht University
Hannes Hahne	2009 – 2015, PhD student and Postdoc in Kuster lab; now CEO of OmicScouts
Guillaume Medard	2011 – 2013, PosDoc in Kuster lab, now Group Leader Chemical Biology at TU Munich
Harald Marx	PhD student in Kuster lab; now Group Leader for Computational Peptidomics at Vienna University
Zhixiang Wu	2008 – 2012, PhD student in Kuster lab, now Assist. Prof. at Shanghai Jiao Tong University
Xin Ku	2010 – 2014, PhD student in Kuster lab, now Assist. Prof. at Shanghai Jiao Tong University
Mathias Wilhelm	2012-2017, PhD student in Kuster lab, now Group Leader in Bioinformatics, TU Munich

• **EXAMPLES OF LEADERSHIP IN INDUSTRIAL INNOVATION OR DESIGN**

Waters (UK)	(2012-2014) Our work resulted in a new generation of a commercial mass spectrometer
OmicScouts	(2014) Co-founder OmicScouts. I have no operational role in the company.
Cellzome	(2000-2007) Inventor of Kinobead technology, responsible for technology platform