



TO MAGNIFICA RETTRICE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE: 6980

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Bioscienze**

Scientist- in - charge: **Anna Moroni**

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Schiewer
Name	Enrico

PRESENT OCCUPATION

Appointment	Structure
postdoctoral scientist	Humboldt-Universität zu Berlin, Germany

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	-	-	-
Specialization	-	-	-
PhD	Biophysics	Humboldt-Universität zu Berlin, Germany	2024
Master	Biochemistry	Freie Universität Berlin, Germany	2017
Degree of medical specialization	-	-	-
Degree of European specialization	-	-	-
Other	-	-	-



REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date registration	of Association	City
-	-	-

FOREIGN LANGUAGES

Languages	level of knowledge
German	native
English	full professional
Italian	elementary
French	elementary

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
-	-

TRAINING OR RESEARCH ACTIVITY

description of activity
08 - 09/2013 - Internship in clinical chemistry, Werner Forßmann Hospital, Eberswalde, Germany
10 – 12/2015 - Internship in crystallography, Macromolecular Structure and Interaction, Udo Heinemann, Max Delbrück Center for Molecular Medicine, Berlin, Germany
01/2016 – 10/2017 - Internship/Student Assistant in MD Simulations, Macromolecular Modeling, Ernst-Walter Knapp, Freie Universität Berlin, Germany
07 – 09/2016 - Internship in nuclear gene targeting, Experimental biophysics, Peter Hegemann, Humboldt-Universität zu Berlin, Germany
06 – 08/2017 - Internship in QM/MM simulations, Theoretical Physics, Petra Imhof, Freie Universität Berlin, Germany
09/2019 - FELASA B certification - Course in Laboratory Animal Science, Charité Universitätsmedizin Berlin, Germany
Since 10/2019 - Animal Care Manager (<i>Xenopus laevis</i> frogs), Experimental Biophysics, Peter Hegemann, Humboldt-Universität zu Berlin, Germany
Since 02/2023 - Officer for Animal Welfare, Institute of Biology, Humboldt University of Berlin, Germany



PROJECT ACTIVITY

Year	Project
2015	MD Simulation of collagen type I fibrillogenesis in the presence of heparin
2015	Structural investigation of immune response regulation by Regnases
2016	Optimization of the pKa prediction for proteins with Karlsberg2+MD
2016	Gene Editing in <i>Chlamydomonas reinhardtii</i> via CRISPR-Cas9 Ribonucleoproteins
2017	QM/MM Simulation of the DNA base excision repair system
2017	Design of a light-activated K ⁺ channel based on the Na ⁺ pump KR2
2018	Combining Karlsberg2+MD and Charmm/NAMD for constant-pH MD simulations
2018	Design of the light-gated proton channel CySeR
2019	Structural investigation of a new family of anion-Conducting and intensely desensitizing ChRs
2019	Structural investigation of NeoR, a near-infrared absorbing rhodopsin
2019	Design of the automatic, small-scale LED illumination and photometer system "CellGarden"
2020	Calcium-permeable channelrhodopsins for the photocontrol of calcium signalling
2021	Mechanistic study on the rhodopsin guanylyl cyclase CaRhGC
2021	Mutational study on the new family of K ⁺ -selective ChRs
2022	Electrophysiological characterization of WiChR
2022	Ultrasound-stimulation of mechanosensitive K2P ion channels
2023	The functionality of the DC pair in a CaRhGC
2024	Design of a rhodopsin cyclase-based optogenetic silencing tool
2024	Electrophysiological characterization of new bestrhodopsins in <i>Xenopus laevis</i> oocytes
2024	Membrane targeting optimization of light- and mechanosensitive channel fusion proteins

PATENTS

Patent
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CONGRESSES AND SEMINARS

Date	Title	Place
24 – 26/05/2024	<i>DGfB (Deutsche Gesellschaft für Biophysik)</i> : “Mechanisms of Ion Transport: Basic and Applied” 30-minute talk : “Structural determinants of potassium selectivity in engineered and natural KCRs”	international workshop at ver.di educational and meeting center, Berlin, Germany
11 – 13/05/2022	<i>Optogen 2022</i> : “International Workshop on Technologies for Optogenetics and Neurophotonics” Poster : “Design of a light-gated K ⁺ channel”	conference at Jussieu campus of Sorbonne-Université, Paris, France
25 – 30/08/2019	<i>Photobiology ESP congress</i> : “World Congress on Light and Life” Poster : “Design of a light-gated K ⁺ channel”	biannual congress of the European Society of Photobiology, Barcelona, Spain
09 – 11/08/2019	<i>DGfB (Deutsche Gesellschaft für Biophysik)</i> : “The workings of ion transporters and channels” Poster : “Design of a light-gated K ⁺ channel”	international workshop at ver.di educational and meeting center, Berlin, Germany
20 – 21/02/2019	<i>SFB1078 (DFG Collaborative Research Centre)</i> : “Protonation Dynamics in Protein Function” Poster and 15-minute talk : “Design of a K ⁺ -selective KR2 channel variant”	annual retreat at Evangelische Bildungsstätte Schwanenwerder, Berlin, Germany
24 – 26/09/2018	<i>SPP1926 (DFG priority programme)</i> : “Next Generation Optogenetics: Tool Development and Application” Poster : “Design of a K ⁺ -selective KR2 channel variant”	annual meeting at CAESAR, Bonn, Germany
19 – 21/03/2018	<i>SFB1078 (DFG Collaborative Research Centre)</i> : “Protonation Dynamics in Protein Function” Poster and 15-minute talk : “Design of a K ⁺ -selective KR2 channel variant”	annual retreat at Evangelische Bildungsstätte Schwanenwerder, Berlin, Germany

PUBLICATIONS

Books	
2024	E. Schiewer , “ <i>Structural determinants of potassium selectivity in engineered and natural KCRs.</i> ”, Berlin, edoc-Server Humboldt-Universität zu Berlin DOI: 10.18452/28851



Year	Articles in reviews
2019	<p>J. Oppermann, P. Fischer, A. Silapētere, B. Liepe, S. Rodriguez-Rozada, J. Flores-Urbe, E. Schiewer, A. Keidel, J. Vierock, J. Kaufmann, M. Broser, M. Luck, F. Bartl, P. Hildebrandt, J. Simon Wiegert, O. Bèjà, P. Hegemann and J. Wietek.</p> <p>“MerMAIDs: A Family of Metagenomically Discovered Marine Anion-Conducting and Intensely Desensitizing Channelrhodopsins”. <i>Nature Communications</i> 10(1)</p> <p>DOI: 10.1038/s41467-019-11322-6</p>
2020	<p>M. Broser, A. Spreen, P.E. Konold, E. Schiewer, S. Adam, V. Borin, I. Schapiro, R. Seifert, J.T.M. Kennis, Y.A. Bernal Sierra and P. Hegemann.</p> <p>“NeoR, a near-infrared absorbing rhodopsin”. <i>Nature Communications</i> 11(1)</p> <p>DOI: 10.1038/s41467-020-19375-8</p>
2022	<p>R.G.F. Lahore, N.P. Pampaloni, E. Schiewer, M.M. Heim, L. Tillert, J. Vierock, J. Oppermann, J. Walther, D. Schmitz, D. Oswald, A.J.R. Plested, B.R. Rost and P. Hegemann.</p> <p>“Calcium-permeable channelrhodopsins for the photocontrol of calcium signalling”. <i>Nature Communications</i> 13(1)</p> <p>DOI: 10.1038/s41467-022-35373-4</p>
2022	<p>P. Fischer, S. Mukherjee, E. Schiewer, M. Broser, F. Bartl and P. Hegemann.</p> <p>“The inner mechanics of rhodopsin guanylyl cyclase during cGMP-formation revealed by real-time FTIR spectroscopy”. <i>eLife</i> 10</p> <p>DOI: 10.7554/eLife.71384</p>
2022	<p>J. Vierock†, E. Schiewer†, C. Grimm†, A. Rozenberg, I.W. Chen, L. Tillert, A.G.C. Scalise, M. Casini, S. Augustin, D. Tanese, B.C. Forget, R. Peyronnet, F. Schneider-Warme, V. Emiliani, O. Bèjà, and P. Hegemann.</p> <p>† These authors contributed equally</p> <p>“WiChR, a highly potassium-selective channelrhodopsin for low-light one- and two-photon inhibition of excitable cells”. <i>Science Advances</i> 8(49)</p> <p>DOI: 10.1126/sciadv.add7729</p>
2023	<p>P. Fischer, E. Schiewer, M. Broser, W. Busse, A. Spreen, M. Grosse, P. Hegemann and F. Bartl</p> <p>“The functionality of the DC pair in a Rhodopsin Guanylyl Cyclase from <i>Catenaria anguillulae</i>”. <i>Journal of Molecular Biology</i> 168375</p> <p>DOI: 10.1016/j.jmb.2023.168375</p>



Congress proceedings
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OTHER INFORMATION

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

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Place and date: Berlin, 13/11/2024