

Dr. René Staritzbichler

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Education

2004	Max Planck Institute of Biophysics / Johann-Wolfgang-Goethe University, Frankfurt PhD in Physics (Dr. phil.), Magna cum laude
1999	University of Hamburg Diplom in Physics
1997	University of Hamburg Vordiplom in Physics

Key scientific achievements

Development of a novel high-throughput laboratory diagnostic method. Patent pending.

Successful design of opioid peptide with high specificity towards the kappa opioid receptor and thus reduced side-effects, experimentally verified. Currently evaluated as treatment of a drug resistant type of epilepsy.

Development of many scientific software packages and webservers.

Main developed scientific software packages

- **SpectImprover**, a software for predicting biomarkers from spectra
- **SmoothT** (*), a software for constructing transition pathways from MD and MC simulations
- **ProteinPrompt**, a software for scanning entire proteoms for potential protein binding partners (*)
- **metaPSI**, a software predicting side-effects and immune activation of immunotherapies (IMMUTHERA).
- **EpitopeThreader**, a software predicting peptides being presented as epitopes on MHC-TCR (BIONTECH, *)
- HLA-typing software using next generation sequencing data (BIONTECH)
- A commercial platform for next generation sequencing data evaluation (BIONTECH, marketed via www.aptaid.de)
- **GRIFFIN**, a parallelized membrane-protein modeling software (*)
- **SNMP controller**, a software checking and controlling the status of many SNMP based devices (*)
- **AlignMe**, a profile-based alignment tool for membrane proteins with very low sequence similarity (<https://github.com/Lucy-Forrest-Lab/AlignMe>)
- **BCL**, an extensive library of tools for modeling and simulating biomolecules (bclcommons.vueinnovations.com)

(*) all available at <https://github.com/reneDominik>

Webserver

- **AlignMe:** www.bioinfo.mpg.de/AlignMe
- **MutationExplorer:** http://proteinformatics.org/mutation_explorer_beta/mutantX (also linked from result page of AlignMe for 3D visualization of sequence alignments)
- **ProteinPrompt:** <http://proteinformatics.org/proteinprompt>
- **MDsrv:** <https://proteinformatics.informatik.uni-leipzig.de>
- **Voronoia:** <http://proteinformatics.org/voronoia>

Other activities

- Supervisor of Nikola Ristic, winning the 1st price in “Jugend Forscht” in Chemistry in 2021, both ‘Landeswettbewerb Sachsen’ and ‘Bundeswettbewerb’ with the Voronoia project. In 2022, Nikola achieved 4th place in the global ISEF competition with the same project
- Ambulance service (Rettungsassistent)
- (Co-)Authored several books and articles linking popular science and philosophy published in 6 languages, invited speaker at numerous conferences and events on this topic (some of the articles are available at <http://staritzbichler.com/rene.html>)

Teaching

Vanderbilt University:

- Computational Structural Biology
- Physical Chemistry II

Leipzig University

- Physiology practical course for medical students
- Molecular modelling, Linux, Python, machine learning
- Physics for medical students, biochemists, biologists, pharmacists

Patents

Coordination of patent filing:

„Method and kit for determining whether a subject shows an immune response“

On behalf of BIONTECH AG and Translational Oncology gGmbH

Patent 674-107

“Method for predicting markers which are characteristic for at least one medical sample and /or for a patient”

Thorsten Kaiser and René Staritzbichler

Published: <https://register.epo.org/application?number=EP20197251>

Submitted 21.09.2021

Grants

Data and major contribution to methods and writing of grant proposal:

“Membrane Protein Structure Elucidation from sparse NMR data (KAMP)”,

PI Jens Meiler, NIH, National Institute of General Medical Science,

RO1, RGM080403A, Accepted with Priority Score:121, Percentile: 1.0

Main and responsible writer, coordination of contributions from wetlab, management and controlling:

“Adaptives Immuno Profiling Kit”

On behalf of Theracode AG / BIONTECH AG

Zentrales Innovationsprogramm Mittelstand / Bundesministerium für Wirtschaft und Technologie

Projekt Reg.-Nr.: EP131229, Submitted on 28.10.2013
Sächsische Aufbaubank
Gründerstipendien, € 108000
Kundennummer: 2002050669

Biotech Elevator / Swab GmbH
Startup seed investment, € 12000

Stadt Leipzig
Mittelstandsförderprogramm
€ 4000, MP16-G02-10

Experience

- 2018 – present **Scientist with Prof. Dr. Peter Hildebrand**
Institute of Medical Physics and Biophysics, Uni Leipzig
- 2016 – 2019 **CEO / Founder at IMMUTHERA GmbH**
- 2015 **Scientist with Prof. Dr. Jens Eilers**
Carl Ludwig Institute, University of Leipzig
- 2014 **Sabbatical**
- 2012 - 2013 **Project leader, scientist with Prof. Dr. Ugur Sahin**
BIONTECH AG, Translational Oncology Mainz gGmbH
- 2008 – 2011 **Computational Biology Specialist with Dr. Lucy Forrest**
Max-Planck Institute of Biophysics, Frankfurt
- 2005 – 2008 **Postdoctoral research fellow with Prof. Dr. Jens Meiler**
Center of Structural Biology, Vanderbilt University, Nashville, Tennessee, USA
- 2004 **Postdoctoral research fellow with Prof. Dr. Volkhard Helms**
Center of Bioinformatics, University of Saarland
- 2000 – 2004 **Graduate research fellow with Prof. Dr. Volkhard Helms**
Max-Planck-Institute of Biophysics, Frankfurt
- 1999 **Diplomarbeit with Prof. Dr. Jochen Bartels**
Institute of Theoretical Physics, Deutsches Elektronen Synchrotron (DESY), Hamburg
- 1996 **Undergraduate Research with Prof. Dr. Peter Toschek**
Institute of Laser Physics, University of Hamburg