Florian Praetorius ORCID: 0000-0002-0806-8101

Born 23. September 1985 in Freiburg im Breisgau, Germany

Languages: German, English

Education

2018	PhD (Dr. rer. nat.), Physics, Technische Universität München, Germany
2011	M. Sc. in Biochemistry, Technische Universität München, Germany
2009	B. Sc. in Biochemistry, Technische Universität München, Germany

Academic career

Since 2024	Assistant Professor, Institute of Science and Technology Austria
2018-2024	Postdoc with Prof. David Baker, Institute for Protein Design, Department of Biochemistry, University of Washington
2018	Postdoc with Prof. Hendrik Dietz, Physics Department, Technische Universität München, Germany
2012-2018	PhD student with Prof. Hendrik Dietz, Physics Department, Technische Universität München, Germany

Grants, fellowships, and awards

2023	ERC Starting Grant
2021	Poster award at RosettaCon, Postdoc & Junior PI category (virtual)
2019-2022	Human Frontier Science Program (HFSP) Long-term Fellowship
2016	ISNSCE best presentation award at DNA 22 conference

Most important peer-reviewed publications

F. Praetorius*#, P. J. Y. Leung*, M. H. Tessmer, A. Broerman, C. Demakis, A. F. Dishman, A. Pillai, A. Idris, D. Juergens, J. Dauparas, X. Li, P. M. Levine, M. Lamb, R. K. Ballard, S. R. Gerben, H. Nguyen, A. Kang, B. Sankaran, A. K. Bera, B. F. Volkman, J. Nivala, S. Stoll, D. Baker#, Design of stimulus-responsive two-state hinge proteins. ***Science***. 381, 754–760 (2023).

D. D. Sahtoe*, F. Praetorius*, A. Courbet, Y. Hsia, B. I. M. Wicky, N. I. Edman, L. M. Miller, B. J. R. Timmermans, H. M. Morris, J. Decarreau, A. Kang, A. K. Bera, D. Baker, Reconfigurable asymmetric protein assemblies through implicit negative design. ***Science***. 375, eabj7662 (2022).

F. Praetorius, B. Kick, K. L. Behler, M. N. Honemann, D. Weuster-Botz, H. Dietz, Biotechnological mass production of DNA origami. ***Nature***. 552, 84–87 (2017).

F. Praetorius, H. Dietz, Self-assembly of genetically encoded DNA-protein hybrid nanoscale shapes. ***Science***. 355, eaam5488 (2017).

F. A. S. Engelhardt*, F. Praetorius*, C. H. Wachauf, G. Brüggenthies, F. Kohler, B. Kick, K. L. Kadletz, P. N. Pham, K. L. Behler, T. Gerling, H. Dietz, Custom-Size, Functional, and Durable DNA Origami with Design-Specific Scaffolds. ***ACS Nano***. 13, 5015–5027 (2019).

* these authors contributed equally; # co-corresponding authors

Patents

Praetorius, F., and H. Dietz. 2019. Scalable biotechnological production of dna single strand molecules of defined sequence and length. US Patent App. 16/329,495, issued 2019. https://patents.google.com/patent/US20190203242A1/en.

Invited and contributed presentations

March 13, 2023	Max Perutz Labs, Vienna: "Biomolecular Design with proteins, DNA, or both: Controlling the spatial arrangement of functional molecules"
February 27, 2023	Institute of Science and Technology Austria, Klosterneuburg: "Biomolecular Design with proteins, DNA, or both: Controlling the spatial arrangement of functional molecules"
January 24, 2023	Young Investigator Symposium, IMP/IMBA, Vienna: "Designing for more than one state: computational design of protein switches and reconfigurable protein assemblies"
October 5, 2022	Center for Functional Protein Assemblies, TU Munich: "Designing for more than one state: computational design of protein switches and reconfigurable protein assemblies"
September 30, 2022	Institute of Science and Technology Austria, Klosterneuburg: "Designing for more than one state: computational design of protein switches and reconfigurable protein assemblies"
August 10, 2022	Summer RosettaCon, Leavenworth (Shared presentation with Phil Leung): "De novo design of conformational switches"
May 13 2022	European RosettaCon, Warsaw: "De novo design of dynamic proteins"
February 8 2022	WinterRosettaCon, virtual (Shared presentation with Phil Leung): "De novo design of dynamic proteins"
January 11 2019	Brandeis University, Boston: "Biotechnological production and self-assembly of genetically encodable nanostructures"
August 09 2018	6th Halle conference on recombinant proteins, Halle: "Self-assembly of DNA-based nanostructures"
February 12 2017	61st Biophysical Society Meeting, New Orleans: "Genetically Encoded DNA-Protein Hybrid Origami"
September 07 2016	DNA22, Munich: "Genetically Encoded DNA-Protein Hybrid Origami"