

Prof. Sebastian Springer

DPhil (Oxon), Dipl.-Biochem.



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Positions

since **2010** Associate Professor of Biochemistry and Cell Biology, Jacobs University

2001 - 2010 Assistant Professor of Biochemistry and Cell Biology,
Jacobs University Bremen, Germany

*Research: Molecular mechanisms of antigen presentation;
vesicular transport; applications of micro- and nanocapsule technology*

1996 - 2001 Postdoctoral Research Associate
with **Randy Schekman**, University of California, Berkeley.
Research: Cargo protein recruitment into COPII vesicles

Training

1992 - 1996 D.Phil. thesis "The biochemistry of antigen presentation" with
Alain Townsend, University of Oxford, UK.
Research: Peptide binding to MHC class I molecules

1992 Diplom (\approx MSc) in Biochemistry, University of Tübingen, Germany

1991 - 1992 Diploma thesis with **Stefan Jentsch**, Friedrich-Miescher-Laboratory of the
Max Planck Society, Tübingen, Germany.
Research: E3 substrate recognition proteins of the ubiquitin system

1988 Vordiplom (\approx BSc) in Biology; University of Stuttgart-Hohenheim, Germany

1988 Vordiplom (\approx BSc) in Biochemistry; University of Tübingen, Germany

1985 - 1992 Diplom studies in Biochemistry, University of Tübingen, Germany

1984-1985 Military Service

1976-1984 Gymnasium (High School), Königstein, Germany

Research

My group focuses on the cell biology and biochemistry of the immune system, more specifically on the **molecular mechanism of the antiviral and antitumor immune defence**. We investigate folding, peptide binding, quality control, cell surface transport, and regulated endocytic destruction of MHC (major histocompatibility complex) class I proteins to further our fundamental knowledge of protein handling by cells and to understand the boundary conditions for the creation of novel vaccination strategies. Our work is characterized by a **hypothesis-driven multi-faceted approach** to which biochemistry, cell biology, biophysics, biotechnology, and computational biology all contribute. In addition to our basic research, we have recently also developed and patented new tools for the **immunotherapy** of viruses and tumors.

More information is located at our website, <http://www.jacobs-university.de/springerlab> .

Publications are listed at <https://www.jacobs-university.de/ses/sspringer/publications> .

Third-party funding

My research has been almost exclusively funded by extramural grants for the last ten years.

Teaching

Teaching is very important to me. I have taught many undergraduate and graduate lectures and lab courses at Jacobs University since 2001, most importantly the first-year undergraduate lecture '[General Biochemistry and Cell Biology](#)' and the third-year [Immunology](#) course. I have always actively expanded my teaching skills, and I was elected 'Professor of the Year' of the School of Engineering and Science five times. In 2013, I won a [competition](#) by the Stifterverband der Deutschen Wissenschaft to develop a MOOC (Massive Open Online Course) on '[DNA – from structure to therapy](#)'. The course has run successfully on the iversity.org platform.

Institutional service

[Jacobs University](#), a private research and teaching institution, was established in 2001. I was member of the founding faculty, and I have helped shape the university through committee work, establishment of course programs (I have chaired both undergraduate and graduate program steering committees, for >10 years), publicizing our science, and PR work for the university.