

Curriculum Vitae

Charlotte Uetrecht

W2 / Associate Professor Biochemistry Dynamics of viral Structures
Centre for Structural Systems Biology (CSSB),
Leibniz Institute of Virology (LIV),
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Research positions and education

2021-present W2 / Associate Professor for Biochemistry, Faculty V: School of Life Sciences, position associated to DESY and LIV (formerly HPI), research group at CSSB Hamburg

2020-2021 Associate member, CSSB, Hamburg, Germany

2014-2021 Junior group leader "Dynamics of viral Structures", LIV, Hamburg, Germany

2011-present Postdoc (2013-2014) /guest scientist, Sample Environment, European XFEL GmbH

2011-2013 Postdoc on EMBO longterm fellowship, Molecular Biophysics, Uppsala University, Sweden

2006–2010 PhD student/postdoc, Biomolecular Mass Spectrometry and Proteomics, Utrecht University, the Netherlands
Analysing macromolecular structures with native mass spectrometry: Insights to virus structure and assembly, supervisor: Prof. Dr. A.J.R. Heck, Graduation: Nov 2010 with cum laude

2001-2006 Diplom Biochemistry, University of Potsdam, Germany,
Thesis supervisors: Prof. Dr. R. Seckler and Dr. S. Barbirz
Specialisation: physical biochemistry and structural biology

Awards/Grants

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| 2010 | PhD with Cum Laude (highest degree in the Netherlands awarded to < 5%) |
| 2011-2013 | EMBO Longterm Fellowship ALTF 1531-2010 |
| 2011 | H.G.K. Westenbrink prize 2011 |
| 2013-2015 | PIER Ideenfonds together with Prof. Dr. H. Schlüter, UKE: "Towards a prototype mass spectrometer for delivery of biological samples at X-ray Free-Electron Lasers" |
| 2014-2017 | Leibniz Association, Leibniz Competition 2014, Women in academic leadership positions, SAW-2014-HPI-4: "Advanced mass spectrometric tools to elucidate structures involved in viral infection" |
| 2015-2017 | Co-applicant LFF-Deligrath graduate school, speaker: Prof. Dr. J. Kehr |
| 2016-2019 | Co-applicant Joachim-Herz-Stiftung, project leader: Prof. Dr. M. Kolbe |
| 2016-2022 | Co-applicant DFG research unit Virocarb FOR 2327, speaker: Prof. Dr. T. Stehle |
| 2016-2020 | Coordinator BMBF "VisaVix" 05K16BH1 |
| 2016-2022 | Co-applicant, H2020-FETPROACT-2016, Viruscan (731868), coordinator: Dr. J. Tamayo |
| 2018-2022 | ERC-2017-STG, SPOCK'S MS (759661) |
| 2018-2022 | Coordinator H2020-FETOPEN-1-2016-2017, MS SPIDOC (801406) |
| 2019-2023 | Leibniz Science Campus Interact, co-applicant and member board of directors |
| 2020 | BMG Rapid response grant |
| 2020-2021 | BMBF RTK-Struktur |
| 2020-2023 | LFF ZeMeIn, co-applicant |
| 2021-2025 | Co-applicant, H2020-FETOPEN, ARIADNE |
| 2021-2022 | LIV SIP together with Maya Topf |
| 2022 | Mattauch-Herzog Award of the DGMS |
| 2022-2025 | BMBF VirMScan project with Pietro Scaturro |
| 2022-2026 | RAC SAXFELS project with Carl Coleman and Erik Marklund |

Memberships/other

German Biophysical Society (DGfB)
German Mass Spectrometry Society (DGMS)
Society for Virology (GfV)
International Society of HDX-MS
World Society of Virology (WSV)
Jury member Wolfgang-Paul-Studienpreis of the DGMS (since 2017)
Active external expert for European Commission and other funding agencies in Europe
Elected chair at the 2023 GRC Physical Virology Conference
Deputy chair scientific council of LIV (2019-2021)
Internal Advisory Board of the CSSB Multi-User CryoEM Facility (since 2020)
Select Member Virology Division, Microbiology Society, UK (since 2021)
Member Academia.net, platform for excellent women researchers (since 2021)
Analytical Chemistry Early Career Board, American Chemical Society (2022 – 2024)

Research Focus

My group is interested in the structure and dynamics of viral protein complexes to elucidate, how these complex machineries function. A main focus is the replication/transcription machine of coronaviruses. Since these protein complexes often exist in many different states to mediate a diverse set of functions, single particle-like approaches are best suited to deduce structural information. We therefore use and develop mass spectrometry (MS) based techniques, which allow revealing coexisting states in a time-resolved manner. Another interest lies in the dynamic structure of viral capsids, where we focus on noroviruses. MS coupled to X-ray free-electron lasers for sample delivery will in the near future allow high resolution single particle imaging of transient states in functional cycles or capsid assembly as our new system will allow the selective imaging of specific states.