Dr Benjamin Schumann MRSC MRSB

Group Leader, The Francis Crick Institute • Senior Lecturer, Imperial College London

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Date of birth: 10/05/1985
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Appointments and Education

1/11/2018 - Group Leader and, since 2022, Senior Lecturer in Chemical Biology
Imperial College London and the Francis Crick Institute

2016 - 2018 Postdoctoral fellow, advisor: Prof. Carolyn R. Bertozzi
Stanford University

2011 - 2015 Doctoral studies, advisor: Prof. Peter H. Seeberger
Max Planck Institute of Colloids and Interfaces and Freie Universität Berlin
24/11/2015 Degree: Doctor rerum naturalium (*summa cum laude*, outstanding)

2005 - 2010 Undergraduate studies, Universität Tübingen
26/10/2010 Degree: Diploma in Biochemistry (grade 1.0, outstanding)

Funding

2023-28 ERC Starting Grant • *2023-2027* CRUK Multidisciplinary Award • *2023* Crick Ideas to Innovation Translational Grant • *2022-2026* Prostate Cancer UK Grant • *2018-25* Crick core funding • *2020-21* 3x BBSRC Responsive Mode Grants (2x PI, 1x Co-I) • *2019* Wellcome Trust Biomed. Resource Grant (Co-I) • *2019-22* 4x Crick-Imperial co-funded studentships • 2x Imperial ICB CDT studentships co-funded by GSK and Vertex, respectively.

Awards and Fellowships

2024 Biochem. Soc. Early Career Research Award • *2023* RSC Dextra Award • *2022* EMBO Young Investigator • *2022* Imperial College Early Career Award • *2021* RSC Horizon Award • *2017* Otto Hahn Medal, Max Planck Society • *2016* Award for Excellence in Glycosciences • *2016-18* Humboldt Feodor Lynen fellowship • *2011-13* Kekulé VCI doctoral scholarship • *2008-13* Scholarship, German Acad. Scholarship Found (Studienstiftung des deutschen Volkes)

Publications, Patents and Symposia

Author on 19 research publications (5x first, 7x corresp.) and one preprint, 3 reviews, 1 book chapter, co-inventor on 4 patent applications, invited keynote speaker on various national and international symposia.

Selected Research Papers (* Corresponding author)

Gonzalez-Rodriguez, E., Zol-Hanlon, M., (…) Hurtado-Guerrero, R., Malaker, S. A., **Schumann, B.***. O-Linked Sialoglycans Modulate the Proteolysis of SARS-CoV-2 Spike and Likely Contribute to the Mutational Trajectory in Variants of Concern. *ACS Cent. Sci*. **2023**, 9. Link

Li, Z., Di Vagno, L., (…) Miller, G. J., Hohenester, E., **Schumann, B.*** Xylosyltransferase Bump-and-hole Engineering to Chemically Manipulate Proteoglycans in Mammalian Cells. *BioRxiv pre-print* **2023**. Link

Cioce, A., Calle, B., (…) Malaker, S.A., Malanchi, I., **Schumann, B.*** Cell-specific Bioorthogonal Tagging of Glycoproteins *Nat. Commun.* **2022**, 13. Link

Calle, B., Bineva-Todd, G., (…) **Schumann, B.***, Malaker, S.A.* Benefits of chemical sugar modifications introduced by click chemistry for glycoproteomic analyses. *J. Amer. Soc. Mass Spectrom.* **2021**, *32*. Link

Debets, M. F., Tastan, O. Y., (…) Haslam, S. Snijders, A. P., Bassik, M. C., Moerner, W. E., Li, V. S. W., Bertozzi, C. R., **Schumann, B.*** Metabolic precision labeling enables selective probing of O-linked N-acetylgalactosamine glycosylation. *Proc. Natl. Acad. Sci. USA.* **2020**, *117*. Link

Panels and Committees

2021-23 Imperial College Department of Chemistry Equality, Diversity and Inclusion Committee

2020- European Symposium of Bio-Organic Chemistry (ESBOC); committee member

2020-22 European Glycosciences Consortium; founding committee member

2019- Imperial College Glycobiology Network of Excellence; Co-Director

2019- RSC Chemical Biology and Bio-Organic Group; committee member and Communications Officer

Review and Editorial work

2022-23 Editor of special issue "Chemical Glycobiology", *Beilstein J. Org. Chem.*

*2021-*22 Editor of special issue "Bringing chemistry to life" in honour of the Wolf Prize being awarded to Carolyn Bertozzi, *Israel Journal of Chemistry*; together with Profs. Matthew Pratt and Jessica Kramer

Reviewer for various journals (e.g. *Nat. Chem. Biol.*, *Nat. Catal.*, *Nat. Commun.*, *Proc. Natl Acad. Sci. USA*, *ACS Cent. Sci.*, *J. Am. Chem. Soc.*, *ACS Chem. Biol.*, *Chem. Sci.*, *RSC Chem. Biol.*, *Commun. Biol.*, *Commun. Chem.*)

Reviewer for funding bodies and institutions (e.g. Deutsche Forschungsgemeinschaft, European Research Council, UK Research and Innovation, National Research Foundation Singapore, Institute Curie, Leverhulme Trust)

Conference Organization

2023 Co-Organiser Beilstein Glycosciences Symposium, Limburg (Germany)

2022 Lead Organiser RSC Chemical Biology meets Drug Discovery, Francis Crick Institute (>200 attendees)

2022 Imperial College Glycobiology Network of Excellence; network meeting at the Francis Crick Institute (approx. 50 attendees)

2019 Co-Organiser London Chemical Biology Symposium, Imperial College London (>150 attendees)

Outreach

2023 Great Exhibition Road Festival, activities for children on various glycosciences topics

2022 Visits at local primary school; Science Day (Y3) and Career Day (Y4 to Y6)

2021 Story Garden Festival for the general public; booth with children's activities about glycosciences

2020 Lecture at the Crick Outreach Day

2019 Somers Town Festival for the general public; booth to teach kids about biomedical research and glycobiology

Selected Symposia

2024 Canadian Glycomics Symposium and Warren Workshop, Edmonton (Canada), Keynote Lecture.

2024 EMBO Chemical Biology Meeting, Heidelberg, Invited Lecture.

2024 SCS Chemical Biology Summer School, Bergün (Switzerland), Invited Lecture.

2023 Gordon Research Conference Glycobiology, Ventura (USA), Keynote Lecture.

2023 European Carbohydrate Symposium Eurocarb, Paris (France), Keynote Lecture.

2023 56th SCS Conference on Stereochemistry, Bürgenstock (Switzerland), Lecture & JSP Fellowship.

2023 Harden Conference on Proteoglycans, Surrey (UK), Keynote Lecture.

2023 RSC Carbohydrate Group Symposium, Manchester (UK), Dextra Award Lecture.

2023 IPBS student-led symposium, Toulouse (UK), one of 3 invited speakers.

2023 Glyco 26, Taipei (Taiwan), Keynote Lecture declined.

2023 7th Latin American Glycobiology Congress (Mexico/online), Keynote Lecture.

2023 Society for Glycobiology annual meeting, Hawaii (USA), Keynote Lecture declined.

2022 International Carbohydrate Symposium (Brazil/online), Selected Lecture.

2022 Biochemical Society "From Golgi organization to Glycan function" meeting, Brighton (UK), Invited Lecture.

2022 GlycoNet seminar (Canada/online), Invited Lecture.

2021 Latin American Glycosciences Symposium (Mexico/online); Invited Lecture.

2021 Student-led symposium in Groningen "The Chemistry of Success: In and Out of Control", Invited Lecture.

2021 Charles Warren and Beilstein Symposium on Glycosciences, Grenoble (France/online) Invited Lecture.

2021 American Chemical Society Carbohydrate Division Young Investigator Symposium (USA/online), Invited Lecture.

2020 Society for Glycobiology Annual Meeting (USA/online), Keynote Lecture.

2020 261st American Chemical Society Meeting, San Francisco (USA/online), Selected Lecture.

2020 12th International Symposium on Glycosyltransferases, Boston (USA/online), Selected Lecture.

2020 Crick-African Network Meeting, Accra (Ghana), Invited Lecture.

2019 13th Jenner Symposium, Boston (USA), Invited Lecture.

2019 20th Eurocarb Symposium, Leiden (Netherlands), Keynote Lecture.

2019 Quantitative Biology Programme Meeting, Warwick (UK), Invited Lecture.

2019 RSC Carbohydrate Group Meeting, Reading (UK), Selected Lecture.

2019 Glycobiotec, Berlin (Germany), Invited Lecture.

2018 256th American Chemical Society Meeting, Boston (USA), Selected Lecture.

2017 International Cells in Motion Symposium: Pattern Formation in Space and Time, Münster (Germany), Invited Lecture.

2017 Emerging Investigators Symposium, The Glycobiology Training, Research and Infrastructure Centre, Imperial College London (UK), Invited Lecture.

2016 Advances in Carbohydrate Chemistry, Hamburg (Germany), Symposium to honour Prof. Joachim Thiem; Award Lecture.

2014 International Carbohydrate Symposium, Bangalore (India), Selected Lecture.