

CURRICULUM VITAE

David Drew, Ph.D.

Date of birth 10-9-1976, Auckland, New Zealand
 Citizenship New Zealand and Sweden
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Education and Employment history

2020-present Professor in Biochemistry
Wallenberg Scholar

2013 - 2020 Associate Professor (Docent).
Department of Biochemistry and Biophysics, Stockholm University.
Wallenberg Academy Fellow

2009 - 2013 Group Leader
The Royal Society. University Research Fellow (URF)
Department of Molecular Biosciences.
Imperial College London.

2006 - 2009 EMBO Post-Doctoral fellow.
Prof. So Iwata. Membrane Protein Crystallography Group.
Imperial College London, U.K.

2000 - 2005 PhD thesis Dec. 2005. Biochemistry. Stockholm University.
Thesis: GFP as a tool to monitor membrane protein topology and overexpression in *E. coli*
Supervisor: Prof. Jan-Willem de Gier.
Co-supervisor: Prof. Gunnar von Heijne.

1997 - 1999 M.Sc. Chemistry (Honours), Auckland University. New Zealand
1994 - 1997 B.Sc. Pharmacology (Major), Auckland University. New Zealand

Other appointments

1999 - 2000 Research assistant. Prof. Peter Metcalf.
Structural Biology Group, Auckland University. New Zealand.

Research group

Supervised PhD thesis Chiara Lee; 2009 – 2013 (Imperial College London)
Yusuke Sekiguchi; 2010 to 2014 (co-supervisor. Imperial College)
Povilas Uzdavinyas; 2013 - 2017 (SU) *Högskoleföreningens prize*
Abdul Aziz Qureshi; 2013 – 2019 (SU)
Iven Winkelmann; 2015 - 2021 (SU)
Yurie Chatzikyriakidou 2015-2021 (SU)
Pascal Meier 2016 – 2022 (SU)
Sarah McComas 2018- 2023 (SU)
Surahbi Kokane 2020-2025 (SU)
Sukkyeong Jung 2020 – 2025 (SU)

Supervised PostDocs	<i>(current positions)</i>
Hae Joo Kang	(PostDoc with Dale Wigley, Imperial College, UK);
Nein-Jen Hu	(Assoc. Prof. Institute of Technology, Taiwan);
Gregory Verdon	(Senior scientist at Sosei Heptares, UK)
Mathieu Coincon	(Cryo EM facility scientist at SciLifeLab, Stockholm);
Robin Löving	(CSO Salipro Biotech, Stockholm);
Saba Abdul-Hussein	(Science and Technology office, British Embassy, Stockholm);
Emmanuel Nji	(Wellcome Trust International Intermediate Fellow, Kenya)
Joseph Brock	(Lecturer, ANU, Australia)
Laura Orellana	(Assoc. Prof. Karolinska Institute, Stockholm);
Jan Skerle	(PostDoc with Kvido Strisovsky, Czech);
Rei Matsuoka	(Principal scientist OMass Therapeutics, UK);
Roman Fudim	(Senior Scientist, MorphoSys, Germany)
Rachel North	(Lecturer, Sydney University, Australia).
HyunKu Yeo	(Senior postdoc, SNU, Korea)
Dohwan Ahn	(recently finished for industry position)
Tom Reichenbach	(Protein production facility senior scientist, Stockholm)

Curent PhD students Marta Jaskiewicz

Current PostDocs Ashutosh Gulati (*Wenner-Gren fellowship*); Jianan Chen;
Jakob Silberberg (*EMBO LTF*);
Albert Suades; Hang Li; Ved Mehta; Sigurbjorn Markusson;
Yunlong Qiu; Claudia Alleva; Marta Bonaccorsi

Awards / Distinctions

- Director SFO CEMERAI “Modelling Cell Membranes with AI” 2027
- Visiting Vallee Professorship. The Vallee Foundation. 2026
- ERC Advanced Grant (LS1) 2024
- Elected Royal Swedish Academy of Sciences Member (chemistry class) 2024
- Elected EMBO Member 2022
- The Arrhenius medal (The Swedish Chemical Society) 2020
- Göran Gustafsson Prize in Chemistry (Royal Swedish Academy of Sciences) 2020
- Wallenberg Scholar 2019
- ERC Consolidator Grant (LS1) 2018
- The Tage Erlander prize (Royal Swedish Academy of Sciences) 2016
- The Ruth and Nils-Erik Stenbäck prize (Helsinki) 2015
- Young Distinguished Scientist (Swedish Research Council) 2014
- The Svedberg Prize 2014
- EMBO Young Investigator 2014
- Wallenberg Academy Fellow (Stockholm). 2013
- The Royal Society University Research Fellowship. *Success rate 6%* 2009
- EMBO Post-Doctoral Fellowship (London). 2007
- ESF and EMBO short-term Fellowship (Cambridge). 2002

Research grants

Total awarded grant funding: ~164 M SEK. Current funding: ~46 MSEK

- Swedish Brain Foundation 2025-2027
- ERC Advanced Grant (LS1) (lead) 2025-2029
- Wallenberg Scholar renewal 2024-2029
- Swedish Research Council project Grant. (lead) 2022-2025

- Cancer Foundation project grant & renewal (lead) 2022-2026
- SGC/Gates Foundation 2024-2025
- ERC Consolidator (LS1) (lead) 2019-2024
- Göran Gustafsson Prize 2020-2023
- Wallenberg Scholar 2020-2023
- Novo Nordisk Foundation (lead) 2018-2021
- KAW, Wallenberg Academy Fellow extension (lead) 2018-2022
- KAW, project grant (lead) 2015-2019
- Young Distinguished Grant, VR (lead) 2014-2019
- KAW, Wallenberg Academy Fellow. (lead) 2013-2017
- Swedish Research Council project Grant. (lead) 2012-2015
- Royal Society Research Grant. (lead) 2011-2013
- MRC Grant. (Co-applicant) with Dr. Alexander Cameron 2009-2013
- Royal Society URF (lead) 2009-2013

Invited lectures/selected presentations (97 out of ~120 seminars listed)

- *European Bioenergetics Conference, Stockholm.* 2026
- Keystone Symposium: SLC transporters. Boston. 2026
- EMBO Keynote Lecture: Lorne Protein Structure and Function. Australia 2026
- Research Seminar. University of Sydney, Australia. 2026
- Research Seminar. University of Canterbury, New Zealand. 2025
- Molecular Science Seminar. Gothenburg University. 2025
- Research Seminar. CAS Biophysics, China 2025
- Research Seminar. Westlake University, China 2025
- International Symposium on Protein Sciences, SMART Institute, China 2025
- SMYTE Symposium, Stockholm 2025
- Research Seminar. Vollum Institute. Oregon 2025
- Research Seminar: Stanford University. San Francisco 2025
- Research Seminar. UCSF. San Francisco 2025
- Acid-base Regulation and Sensing Symposium, Copenhagen 2025
- NIH Transporter Elucidation Network, US. 2025
- Research Seminar. Kyoto Medical School. Japan. 2025
- Research Seminar. Tokyo University. Japan 2025
- Biophysical Society (BPS) Conference, Los Angeles 2025
- Integrated Structural Biology, University of Copenhagen 2024
- New Horizons in Membrane Biology, Frankfurt 2024
- Frontiers in Biological Structures Symposium Tsinghua University, China 2024
- EMBO fellowship outreach, Istanbul, Turkey 2024
- EMBL seminar at ESRF, Grenoble 2024
- Research Seminar at Oxford University, UK 2024
- Centre of Structural Biology Symposium. Imperial College London 2024
- GRC: Ligand recognition and Molecular gating. Ventura 2024
- International conference on Structure, Functional, and Dynamics, Hawaii 2023
- Medkem seminar. Umeå University, Sweden 2023
- MRC Mitochondrial Biology Unit. Cambridge 2023
- Research Seminar: Aarhus University, Denmark 2023
- Inter-Academy Workshop on Membrane Protein Folding and Structure, Sweden 2023
- EMBO: Membrane Transporters, Greece 2022
- EMBO: Membrane Protein Characterization, Germany 2022
- International Transporter Transmembrane Society symposium, Copenhagen 2022

- Plenary lecture. 65th CSMB Meeting, Banff, Canada. 2022
- Nanion Technologies, Germany. 2021
- Scandinavian Physiological Society Conference. Stockholm. 2021
- SciLifeLab-EMBL Memorandum of Understanding Symposium. 2021
- Research Seminar. Danish Research Institute of Translational Neuroscience. 2021
- Research BioNUT Seminar. Karolinska Institute. Stockholm. 2021
- LINKS – Membrane Protein Structure Workshop, Lund. 2021
- Biophysical Society (BPS) Conference. Transporters. 2021
- Research seminar. Weill Cornell Medical School, New York 2021
- Research seminar. PSI and ETH. Zurich, Switzerland. 2020
- Research seminar. Groningen University. Netherlands. 2020
- HTB meets Academia. Boehringer Ingelheim Pharma. Germany. 2020
- Research Seminar. Westlake University. China. 2019
- Honoring Membrane Transporters Symposium. Technion Institute, Israel. 2019
- GRC: Ligand recognition and Molecular gating. Ventura. 2018
- GRC: Mechanisms of Membrane Transport. Boston. 2017
- Lorne Conference on Protein Structure and Function. Australia. 2017
- 100th Anniversary of the KAW Foundation. Stockholm 2017
- Japanese Biochemical Society (JBS), Sendai. 2016
- Microbiology Society: Membrane Transporters in Industrial Biotechnology, U.K. 2016
- Symposium on Na⁺/H⁺ Antiporters. Max Planck Frankfurt. 2015
- Research seminar. Tokyo University. Japan 2015
- Research seminar. Kyoto Medical School. Japan. 2015
- Research seminar. ETH Zurich. Switzerland. 2015
- Research seminar. Oxford University. UK. 2015
- High-throughput Protein Production Course. OPPF, Didcot. UK. 2015
- Seminar Series Speaker. Copenhagen University. Denmark. 2015
- Chair Membrane Protein Structure, Function Dynamics. IUCR, Montreal. 2014
- GRC: Ion Channels. New Hampshire. 2014
- GRC: Membrane Transport Proteins, New Hampshire. 2014
- GRC: Ligand recognition and Molecular gating. Ventura. 2014
- Pfizer Pharma, Neusentis Pharmaceutical Research Unit, Cambridge. 2014
- BioMed Conference on Transporters and other Molecular Machines, Barcelona, 2014
- Membrane Transport and Communication. Symposium. Frankfurt, Germany 2014
- Scandinavian Physiological Society Membrane Transport Meeting, Stockholm. 2014
- European Biogenetics Conference, Portugal. 2014
- Morelife/MaxIV symposium. Lund. 2014.
- Benzon Symposium. Membrane protein structure/function/dynamics. Denmark. 2013
- International Union of Physiology Sciences (IUPS). Birmingham, U.K. 2013
- GRC: Mechanisms of Membrane Transport, Boston. 2013
- EMBO: High-throughput protein production and crystallization. Oxford. 2013
- Seminar Series Speaker. John Innes Centre. U.K. 2013.
- Seminar Series Speaker. University of Groningen. Netherlands. 2013
- SGC Protein Production Workshop, Oxford, U.K. 2013
- Structure and Function of Membrane Proteins, Campinas, Brazil. 2013
- SFB-807 Membrane Transport. Max Planck, Frankfurt, Germany. 2012
- URF conference selected speaker, The Royal Society, U.K. 2012
- MipTech, Novartis Pharma, Basel, Switzerland. 2012
- Cold-Spring Harbor: Membrane proteins, structure and function, China. 2011
- Heptares Therapeutics, Cambridge, U.K. 2011
- BCA meeting, Keele University, U.K. 2011

- CSB open day, Membrane Proteins, Imperial College, U.K. 2011
- University of Copenhagen, Seminar speaker, Denmark. 2011
- NIH roadmap. Membrane Protein Technologies, Scripps, San Diego. 2010
- MRC Mitochondrial Biology Unit, Cambridge, U.K. 2010
- GRC: Ligand recognition and Molecular gating, Italy. 2010
- Martin-Luther-Universität speaker, Halle. Germany. 2009
- University of Sydney, Sydney, Australia. 2008.
- TRAMP-6 Symposium, University of Aarhus, Aarhus, Denmark. 2007
- EMBO New Methods in Membrane protein research, Sweden. 2007
- Membrane proteins: Structure, stability, and folding, Denmark. 2007
- GE Healthcare seminar series, Tokyo, Japan. 2007
- International Structural Genomics (ISGO), Kawasaki, Japan. 2006

Professional service and outreach

Conferences organized

- 23rd European Bioenergetic Conference co-organizer, Stockholm 2026
- Keystone Symposium co-organizer: first conference dedicated to SLC transporters (together with Giulio Superti-Furgi and Kathy Giacomini) 2026
- Co-organizer 40th Small Meeting in Yeast Transporter and Energetics, Stockholm 2025
- GRC conference organizer with Janice Robertson "Mechanisms of Membrane Transport" 2023
- EMBO Young Investigator Structural Sectorial Meetings. 2018-2019

External committees and journals

- EMBO course committee 2025-
- EMBO post-doctoral fellowship committee 2023-
- EMBL-Hamburg External Review Committee Member 2023
- eLife editor 2020-2024
- Guest editor PNAS 2024
- Guest editor for Current Opinion in Structural Biology "Membranes" 2017
- Tenure/Professor promotion reviewer: Tsinghua Uni., Columbia University, Oxford University, Peking University (x2), Zurich University (x2), Groningen University. 2019-2025

Internal services

- PhD Biophysics Program director 2024-
- The Swedish National Committee for Molecular Biosciences 2025-
- SciLifeLab Masters Project Course Leader 2024-2025
- Biomembrane Course Leader 2014-
- Wallenberg Academy Fellow Mentor 2020-2023
- Working Group for Gender Equality for Chemistry at SU 2019-2021
- PhD opponent for 18 defences:

Fatma Guettou.	Karolinska Institutet	2015
Eva Sperling.	Lund University	2017
Emilia Lekholm.	Uppsala University	2017
Vinardas Kelpšas.	Lund University	2019
Jenny Herring.	Gothenberg University	2020
Tom Reichenbach	KTH	2020
Caroline Neumann	Aarhus University	2021
Patrick Becker	Warwick University	2021
Peng Huang	Lund University	2022

Laust Bavnhöj	Aarhus University	2023
Lin Yang	Copenhagen University	2023
Kai Ehrenbolger	Umeå University	2024
Jonas Steffan	Copenhagen University	2024
Balder Werin	Lund University	2024
Jessica Glas	Gothenberg University	2024
Mark Lobel	Oxford University	2024
Kristine Salomon	Copenhagen University	2025
Julian Storm	Copenhagen University	2026

- Awards reviewer for The Swedish Royal Academy (KVA), The Royal Netherlands Academy of Arts and Sciences (KNAW), and The German Society for Biochemistry and Molecular Biology (GBM). 2020-2025
- Grant reviewer for The Royal Society, The Wellcome Trust, Medical Research Council (MRC), BBSRC, European Research Council (ERC), Israel Science Foundation, EMBO, Netherlands Organisation for Scientific Research (NWO), Deutsche Forschungsgemeinschaft (DFG), Swiss National Science Foundation (SNSF), French National Research Agency (ANR), ATIP-Avenir program France, Pasteur Institute, and organizations in other European countries.
- Journal Reviewer (~20 reviews/year) for e.g. PNAS, EMBO J, PLOS Biology, Nature Publishing Group.

10 Selected Publications

1. Gulati A, Ahn D, ..., Drew D. Step-wise translocation of ATP into the ER by human SLC35B1. **Nature** (2025) 643,855–864.
2. Drew D, Boudker. Ion and Lipid Orchestration of Secondary Active Transport. **Nature**. (2024) 626, 963–974.
3. Yeo H, Mehta V, Gulati A, Drew D. Structure and mechanism of a voltage-gated Na⁺/H⁺ exchanger. **Nature** (2023) 623:193–201.
4. Asami J, Kimura K, Fujita Y, .., **Drew D**, Iwata S, Shimizu T, Nomura N, Ohto U. Structure of the bile acid transporter and HBV receptor NTCP. **Nature**. (2022). 606: 1021–1026.
5. Qureshi A, Suades A, ..., Drew D. The molecular basis for sugar import in malaria parasites **Nature**. (2020) 578 (7794):321-325.
6. Nji E, Chatzikiyriakidou Y, Landreh M, Drew D. An engineered thermal shift screen reveals specific lipid preferences of eukaryotic and prokaryotic membrane proteins **Nature Communications**. (2018) Oct 12;9(1):4253.
7. Coincon M, Uzdavinys P, ..., Drew D. Crystal structures reveal the molecular basis of ion-translocation in sodium/proton antiporters. **Nature Structure & Molecular Biology** (2016) Mar;23(3):248-55.
8. Nomura N, Verdon G, ..., Drew D. Structure and mechanism of the mammalian fructose transporter GLUT5. **Nature** (2015) 526(7573):397-401.

9. Lee C, Kang HJ, von Ballmoos C, ..., Drew D. A two-domain elevator mechanism for sodium/proton antiport.
Nature (2013) 501(7468):573-7.
10. Hu NJ, Iwata S, Cameron AD, Drew D. Crystal structure of a bacterial homologue of the bile acid sodium symporter ASBT.
Nature (2011) 478:408-11.

Full Publication List

(18 publications > 200 citations, 25 publications > 100 citations)

h-index: 43

total citations: 9529 based on Google Scholar.

<https://scholar.google.com/citations?user=2ZSggEIAAAAJ&hl=sv&oi=ao>

Ahn D, Ruda A, Reichenbach T, Alleva C, Gulati A, Bonaccorsi M, Silbergberg J, Claesson M, Suades A, Delemotte L, Widmalm G, **Drew D**

A two-step mechanism for sugar translocation

Nature Structural & Molecular Biology (2026) 33:652–663 (2026).

Bicer, D, Matsuoka, R, Moumbock, A, Sukumar, P., Suades, A., Cheruvara, H., Quigley, A., **Drew, D.**, Pardon, E., Steyaert, J., Henderson, P. J. F., Caffrey, M., Griese, J. J. Nj.E. Structural basis of lysine-specific transport in *Pseudomonas aeruginosa* for regulation under extreme acidic conditions

Nature Communications. (2026), 17:37.

Jung S, Kokane S, Li H, Iwata S, Nomura N, **Drew D**

Structure and Inhibition of the Human Na⁺/H⁺ Exchanger SLC9B2

Int. J. Mol. Sci. (2025), 26: 4221.

Gulati A, Ahn D, Suades A, Hult Y, Wolf G, Iwata S, Superti-Furga G, Nomura N,

Drew D. Step-wise translocation of ATP into the ER by human SLC35B1

Nature (2025) 643:855–864.

Balakrishnan A, Hunziker M, Tiwary P, Pandey V, **Drew D**, Bilker, O

A CRISPR homing screen finds a chloroquine resistance transporter-like protein of the *Plasmodium* oocyst essential for mosquito transmission of malaria

Nature Communications (2025) 16: 3895.

Kokane S, Meier P, Gulati A, Matsuoka R, Pipatpolkai T, Delemotte L, Fuster D, **Drew D.**

PI-(3,5)P2-mediated oligomerization of the endosomal sodium/proton exchanger NHE9

Nature Communications, (2025) 16: 3055.

Abramsson M, Corey R, Škerle J, Persson J.L, Andén O, Abraham O, Howard R, Lindahl E, Robinson C.V, Strisovsky K, Marklund E.G, **Drew D**, Stansfeld P.J, Landreh M
Engineering cardiolipin binding to an artificial membrane protein reveals determinants for lipid-mediated stabilization

eLife, (2025).104237.1

Gulati A, Kokane S, Boerema A.P, Alleva C, Meier P.F, Matsuoka R, **Drew D.**

Structure and mechanism of the K⁺/H⁺ exchanger KefC

Nature Communications (2024). 15: 4751.

Drew D, Boudker O.

Ion and Lipid Orchestration of Secondary-Active Transport.

Nature. (2024) Review. 626: 963-974.

Mazza T, Roumeliotis T, Garitta E, **Drew D**, Rashid S, Indiveri C, Choudhary J, Linton K:J, Beis K.

Structural basis for the modulation of MRP2 activity by phosphorylation and drugs

Nature Communications (2024). 15: 1983 (2024)

Asami J, Park J, Nomura A, Kobayashi C, Mifune J, Ishimoto N, Uemura T, Liu K, Yato S, Muramatsu M, Wakita T, **Drew D**, Iwata S, Shimizu T, Watashi T, Park S, Nomura N, Ohto U. Structural basis of hepatitis B virus receptor binding.

Nature Structural & Molecular Biology (2024) 31: 447–454.

Currie M, Davies J.S, Scalise M, Gulati A, Wright J, Newton-Vesty M. Abeysekera R, Subramanian R Wahlgren W, Friemann R, Allison J, Mace P, Griffin M, Soichi B, **Drew D**, Indiveri C, Dobson R, North R.

Structural and biophysical analysis of a Haemophilus influenzae tripartite ATP-independent periplasmic (TRAP) transporter

eLife (2023) 12:RP92307.

Yeo H, Mehta V, Gulati A, **Drew D**.

Structure and electromechanical coupling of a voltage-gated Na⁺/H⁺ exchanger

Nature (2023). 623:193–201.

[News and Views Nature. (2023) Oct 25.]

McComas, S.E, Reichenbach T, Mitrovic D, Suades A, Alleva C., Bonaccorsi M, Delemotte L. **Drew D**.

Determinants of sugar-induced influx in the mammalian fructose transporter GLUT5

eLife (2023);12:e84808.

Mitrovic D, McComas, S.E, Alleva, C., Bonaccorsi M, **Drew D**, Delemotte L.

State-specific structure prediction to elucidate the family-wide sequence-structure relationship in sugar transporters

eLife (2023)12:e84805.

Suades A, Qureshi A, McComas S, Coinçon M, Rudling A, Chatzikyriakidou Y, Landreh M, Carlsson J, **Drew D**.

Establishing mammalian GLUT kinetics and lipid preferences in a reconstituted-liposome system

Nature Communications (2023) 14:4070.

Davies, J. S., Currie, M. J., North, R. A., Wright, J. D., Scalise, M., Copping, J. M., Remus, D. M., Gulati, A., Morado, D. R., Jamieson, S. A., Abeysekera, G. S., Ramaswamy, S., Friemann, R., Wakatsuki, S., Allison, J. R., Indiveri, C., **Drew, D.**, Mace, P. D. & Dobson, R. C. J.

Structure and mechanism of the tripartite ATP-independent periplasmic (TRAP) transporter.

Nature Communications (2023). 14: 1120.

Winkelmann I, Uzdavinys P, Kenney I.M, Brock J, Meier P, Wagner L.M, Gabriel F, Jung S, Matsuoka R, von Ballmoos C, Beckstein O, **Drew D**.

Crystal structure of the Na⁺/H⁺ antiporter NhaA at active pH reveals the mechanistic basis for pH sensing.

Nature Communications (2022) 13: 6383.

Asami J, Kimura K, Fujita Y, Ishida H, Zhang Z, Nomura Y, Liu K, Uemura T, Sato Y, Ono M, Yamamoto M, Noda T, Shigematsu H, **Drew D**, Iwata S, Shimizu T, Nomura N, Ohto U. Structure of the bile acid transporter and HBV receptor NTCP
Nature. (2022). 606: 1021–1026.

Yen H.Y, Abramsson M.L, Agasid M.T, Lama D, Gault J, Liko I, Kaldmäe M, Saluri M, Qureshi A.A, Suades A, **Drew D**, Degiacomi M.T, Marklund E.G, Allison T.M, Robinson C.V, Landreh M. Electrospray ionization of native membrane proteins proceeds via a charge equilibration step.
RSC Advances (2022) 12, 9671-9680.

Matsuoka R, Fudim R, Jung S, Zhang C, Bazzone A, Chatzikyriakidou Y, Robinson C.V, Nomura N, Iwata S, Landreh M, Orellana L, Beckstein O, **Drew D**. Structure, mechanism and lipid-mediated re-modelling of the mammalian Na⁺/H⁺ exchanger NHA2.
Nature Structural & Molecular Biology (2022). 29:108-20.

Drew D.

Structures show how salt gets a sweet ride.
Nature (2021) 601: 194-6.

Chatzikyriakidou C, Ahn D, Nji E, **Drew D**. The GFP Thermal Shift assay for screening ligand and lipid interactions to Solute Carrier transporters.
Nature Protocols. (2021)16: 5357-76.

Cotrim C, Jarrott R.J, Whitten A.E, Choudhury H.G, **Drew D**, Martin J.L Heterologous Expression and Biochemical Characterization of the Human Zinc Transporter 1 (ZnT1) and Its Soluble C-Terminal Domain
Frontiers in Chemistry. (2021) 9:253.

Drew D, North R, Nagarathinam K, Tanabe K. Structures and general transport mechanisms by the major facilitator superfamily (MFS)
Chemical Reviews. (2021) 121, 9, 5289–5335.

Winklemann I, Matsuoka R, Meier P, Shutin D, Zhang C, Orellana L, Sexton R, Landreh M, Robinson C.V, Beckstein O, **Drew D** Structure and Elevator Mechanism of the Mammalian Sodium/Proton Exchanger NHE9
EMBO Journal. (2020) 39:4541-4559.
[Selected for EMBO J. cover]

Landreh M, Sahin C, Gault J, Sadeghi S, Drum C.L, Uzdavinyas P, **Drew D**, Allison T.M, Degiacomi M.T, Marklund E.G. Predicting the Shapes of Protein Complexes through Collision Cross Section Measurements and Database Searches
Anal. Chem. (2020) 92, 18, 12297–12303.

Qureshi A, Suades A, Matsuoka R, Brock L, McComas S, Nji E, Orellana L, Claesson M, Delemotte L, **Drew D** The molecular basis for sugar import in malaria parasites
Nature. (2020) 578 (7794):321-325.
[News and Views Nature. (2020) Jan 29.]

Bolla JR, Corey RA, Sahin C, Gault J, Hummer A, Hopper JTS, Lane DP, **Drew D**, Allison TM, Stansfeld PJ, Robinson CV, Landreh M.

A mass spectrometry-based approach to distinguish annular and specific lipid binding to membrane proteins.

Angew Chem Int Ed Engl. (2019) Dec 30. doi: 10.1002/anie.201914411.

Nji E, Gulati A, Qureshi A, Coincon, M, **Drew D**

Structural basis for the delivery of activated sialic acid into Golgi lumen

Nature Structure & Molecular Biology (2019) Jun;26(6):415-423.

Cotrim CA, Jarrott RJ, Martin JL, **Drew D**.

A structural overview of the zinc transporters in the cation diffusion facilitator family.

Acta Crystallogr D Struct Biol. (2019) Apr 1;75(Pt 4):357-367.

Nji E, Chatzikyriakidou Y, Landreh M, **Drew D**.

An engineered thermal shift screen reveals specific lipid preferences of eukaryotic and prokaryotic membrane proteins

Nature Communications. (2018) Oct 12;9(1):4253.

Uzdaviny P, Coincon C, Nji E, Ndi M, Winkelmann I, von Ballmoos C, **Drew D**.

Dissecting the proton-transport pathway in electrogenic Na⁺/H⁺ antiporters.

Proc Natl Acad Sci U S A (2017). Feb 14;114(7):E1101-E1110.

Gupta G, Donlan J.A, Hopper J, Uzdaviny P, Landreh M, Struwe W, **Drew D**, Baldwin A, Stansfield P, Robinson C.V.

The role of interfacial lipids in stabilising membrane protein oligomers.

Nature (2017). Jan 19;541(7637):421-424

Landreh M, Marklund E, Uzdaviny P, Degiacomi M, Coincon M, Liko I, Benesch J, **Drew D**, Robinson C.V

Integrating mass spectrometry and MD simulations reveals the role of lipids in Na⁺/H⁺ antiporters.

Nature Communications (2017) Jan 10;8:13993.

Coincon M, Uzdaviny P, Nji E, Dotson D.L, Winkelmann I, Abdul-Hussein S, Cameron A.D, Beckstein O, **Drew D**

Crystal structures reveal the molecular basis of ion-translocation in sodium/proton antiporters

Nature Structure & Molecular Biology (2016) Mar;23(3):248-55.

[News and Views Nature Structural & Molecular Biology 23, 187 (2016)]

Drew D, Boudker O.

Shared Molecular Mechanisms of Membrane Transporters.

Annual Reviews in Biochemistry (2016). Mar 21 85(1).

Nomura N, Verdon G, Kang HJ, Shimamura T, Nomura Y, Sonoda Y, Hussien S.A, Qureshi A, Coincon M, Sato Y, Abe H, Nakada-Nakura Y, Hino T, Arakawa T, Kusano-Arai O, Iwanari H, Unno H, Murata T, Kobayashi T, Hamakubo T, Kasahara M, Iwata S, **Drew D**

Structure and mechanism of the mammalian fructose transporter GLUT5

Nature (2015) 526(7573):397-401.

Landreh M, Liko I, Uzdaviny P, Coincon M, Hopper JT, **Drew D**, Robinson CV.

Controlling release, unfolding and dissociation of membrane protein complexes in the gas phase through collisional cooling.

Chem Commun (Camb) (2015) 51(85):15582-4.

Lee C, Yashiro S, Dotson DL, Uzdavinyas P, Iwata S, Sansom MS, von Ballmoos C, Beckstein O, **Drew D**, Cameron AD.

Crystal structure of the sodium-proton antiporter NhaA dimer and new mechanistic insights.

The Journal of General Physiology (2014) 144(6):529-44.

Lee C, Kang HJ, Hjelm A, Qureshi A, Nji E, Choudhury H, Beis K, de Gier J, **Drew D**.

MemStar: a one-shot Escherichia coli-based approach for high-level bacterial membrane protein production.

FEBS Letters (2014) 588(20):3761-9.

Simmons KJ, Jackson SM, Brueckner F, Patching SG, Beckstein O, Ivanova E, Geng T, Weyand S, **Drew D**, Lanigan J, Sharples DJ, Sansom MS, Iwata S, Fishwick CW, Johnson AP, Cameron AD, Henderson PJ.

Molecular mechanism of ligand recognition by membrane transport protein, Mhp1.

EMBO Journal (2014) 33(16):1831-44.

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