

CURRICULM 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. Department of Molecular Biosciences.
Imperial College London.
Royal Society University Research Fellow.

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 Uzdavinyis; 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)

Current PhD students

Sukkyeong Jung 2020 –
Surahbi Kokane 2020-

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).

Current PostDocs Dohwan Ahn; Ashutosh Gulati (*Wenner-Gren fellowship*);
Albert Suades; HyunKu Yeo, Marta Bonaccorsi; Tom Reichenbach

Awards / Distinctions

- 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
- 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

- Cancer Foundation project grant (lead) 2022-2025
- Swedish Research Council project Grant. (lead) 2022-2026
- Göran Gustafsson Prize 2020-2023
- Wallenberg Scholar 2020-2023
- ERC Consolidator (LS1) (lead) 2019-2024
- 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 (60 out of ~100 seminars listed)

- *New Horizons in Membrane Biology, Frankfurt* 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
- Life Science Symposium. 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
- 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
- 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
- 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
- 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
- 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

- EMBO Committee Member for Post-Doc Fellowships 2023-
- Department Recruitment committee member 2024-
- SU-Natural Sciences Mentor. 2019-
- Wallenberg Academy Fellow Mentor 2020-
- eLife editor 2020-2024
- GRC conference organizer (Shared Chair) "Mechanisms of Membrane Transport" 2023
- EMBL-Hamburg External Review Committee Member 2023
- Department PhD Biophysics Program responsible 2024-
- SciLifeLab Masters Project Course Leader 2024-
- Biomembrane Course Leader 2014-
- Department Gender equality/diversity and faculty board member 2020-2024
- Working Group for Gender Equality for Chemistry at SU 2019-2021
- SU Young Faculty Organization Team Member. 2017-2018
- PhD opponent:

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
- PhD committee member for 8 thesis defenses.
- Organizer of EMBO Young Investigator Structural Sectorial Meetings 2018-2019
- Participated in a short-documentary by The Knut and Alice Wallenberg Foundation about the "Secret Life of Cells" <https://www.youtube.com/watch?v=fwW86e3tFv4>
- ERC interview training for the Swedish Research Council. 2019
- Guest editor for Current Opinion in Structural Biology "Membranes" 2017
- Tenure track assistant-to-associate professor promotion reviewer for Oxford University, Peking University, Zurich University, and Groningen University. 2019-2022
- Reviewer for EMBO postdoctoral fellowships (x 4). 2012-2019
- 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). 2020-2022

- 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.

Full Publication List

(15 papers > 200 citations, 23 papers > 100 citations)

h-index: 39

total citations: 7823 based on Goggle Scholar.

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

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

PI-(3,5)P2-mediated oligomerization of the endosomal sodium/proton exchanger NHE9
bioRxiv. <https://doi.org/10.1101/2023.09.10.557050>

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

Research Square: <https://doi.org/10.21203/rs.3.rs-2378282/v1>

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.

Drew D, Boudker O.

Ion and Lipid Orchestration of Secondary-Active Transport.

Nature. (2024) 626: 963-974.

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 <https://doi.org/10.1038/s41594-023-01191-5>

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) <https://doi.org/10.7554/eLife.92307.1>

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, Chatzikiyriakidou 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, Uzdavinyas 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, Chatzikiyriakidou 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.

Chatzikiyriakidou 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.

Uzdavinyas P, Coincon C, Nji E, Ndi M, Winkelman 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, Uzdavinys 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, Uzdavinys 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, Uzdavinys 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, Uzdavinys 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, Uzdavinys 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.

Vogl T, Thallinger G, Zellnig G, **Drew D**, Cregg J, Glieder A, Freigassner M.

Towards improved membrane protein production in Pichia pastoris: General and specific transcriptional response to membrane protein overexpression.

N Biotechnol (2014) 31(6):538-52.

Lee C, Kang HJ, von Ballmoos C, Newstead S, Uzdavins P, Iwata S, Beckstein O, Cameron A, **Drew D**.

A two-domain elevator mechanism for sodium/proton antiport.

Nature (2013) 501(7468):573-7.

[News and Views Nature Structural & Molecular Biology 20, 1144 (2013)]

Schlegel S, Löfblom J, Lee C, Hjelm A, Klepsch M, Strous M, **Drew D**, Slotboom DJ, de Gier JW.

Optimizing Membrane Protein Overexpression in the E. coli strain Lemo21(DE3).

Journal of Molecular Biology (2013) 423(4):648-59.

Kang H.J, Lee C, **Drew D**.

Breaking the barriers in membrane protein crystallography.

Int J Biochem Cell Biol. (2013) 45(3):636-44.

Solcan N, Kwok J, Fowler P, Cameron A, **Drew D**, Iwata S, Newstead S.

Alternating access mechanism in the POT family of oligopeptide transporters.

EMBO Journal (2012) 31(16):3411-21.

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.

Sonoda Y, Newstead S, Hu N, Alguel Y, Nji E, Beis K, Yashiro S, Lee C, Leung J, Cameron A.D, Byrne B, Iwata S, **Drew D**.

Benchmarking membrane protein thermostability for improving throughput of high-resolution X-ray structures

Structure (2011) 19(1):17-25.

Newstead S, **Drew D**, Cameron A.D, Postis V.L.G, Xia X, Fowler P.W, Carpenter E.P, Sansom M.S.P, McPherson M.J, Baldwin S.A, Iwata S.

Crystal structure of a prokaryotic homologue of the mammalian oligopeptide-proton symporters, PepT1 and PepT2.

EMBO Journal (2011) 30(2):417-26.

Chae P, Søren G, Rasmussen F, Rana R, Gotfryd K, Chandra R, Goren M, Kruse A, Nurva S, Loland C, Pierre Y, **Drew D**, Popot J, Picot D, Fox B, Guan L, Gether U, Byrne B, Kobilka B, Gellman S.

Maltose-neopentyl glycol (MNG) amphiphiles for solubilization.

Nature Methods (2010) 7(12):1003-8.

Sonoda Y, Cameron A, Newstead S, Omote H, Moriyama Y, Kasahara M, Iwata S, **Drew D**.

Tricks of the trade used to accelerate high-resolution structure determination of membrane proteins.

FEBS Lett. (2010) 584(12):2539-2547.

Suzuki N, Hiraki M, Yamada Y, Matsugaki N, Igarashi N, Kato R, Dikic I, **Drew D**, Iwata S, Wakatsuki S, Kawasaki M.

Crystallization of small proteins assisted by green fluorescent protein.

Acta Crystallogr D Biol Crystallogr (2010) 66:1059-66.

Drew D, Klepsch M, Newstead S, Faig R, de Gier JW, Iwata, S, Beis, K.
The structure of the efflux pump AcrB in complex with bile acid.
Molecular Membrane Biology (2008) 25(8):677-82.

Drew D, Newstead S, Sonoda, Y, Kim, H, von Heijne G, Iwata, S.
GFP-based optimization scheme for the overexpression and purification of eukaryotic membrane proteins in *Saccharomyces cerevisiae*
Nature Protocols (2008) 3(5):784-98.

Newstead S, Kim H, von Heijne G, Iwata S, **Drew D**.
High-throughput fluorescent-based optimization of eukaryotic membrane protein overexpression and purification in *S. cerevisiae*.
Proc Natl Acad Sci U S A (2007) 104 (35):13936-41.

Drew D, Lerch M, Slotboom D, Kunji, E, de Gier JW,
Optimizing membrane protein overexpression and purification using GFP-fusions.
Nature Methods (2006) 3(4):303-313.

Wagner S, Lerch M, **Drew D**, de Gier JW,
Rationalizing membrane protein overexpression.
Trends in Biotechnology (2006) 24(8):364-71.

Baars L, Ytterberg AJ, **Drew D**, Wagner S, Thilo, C, van Wijk KJ, de Gier JW,
Defining the role of the *E. coli* chaperone SecB using comparative proteomics
J Biol Chem (2005) 281(15):10024-10034.

Drew D, Slotboom D, Friso G, Reda T, Genevaux P, Rapp M, Meindl-Beinker N, Lambert W, Lerch M, Daley DO, van Wijk KJ, Hirst J, Kunji E, de Gier JW.
A scalable, GFP-based pipeline for membrane protein overexpression screening and purification.
Protein. Sci (2005) 14(8):2011-7.

Daley DO, Rapp M, Granseth E, Melen K, **Drew D**, von Heijne G.
Global topology analysis of the *E. coli* inner membrane proteome.
Science (2005) 308(5726):1321-3.

Rapp M, **Drew D**, Daley DO, Nilsson J, Carvalho T, Melen K, De Gier JW, von Heijne G.
Experimentally based topology models for *E. coli* inner membrane proteins.
Protein Sci (2004) 13(4):937-45.

Drew D, Froderberg L, Baars L, de Gier JW.
Assembly and overexpression of membrane proteins in *Escherichia coli*.
Biochimica et Biophysica Acta (BBA)-Biomembranes. (2003) 1610(1):3.

Urbanus M, Froderberg L, **Drew D**, Bjork P, de Gier J, Brunner J, Oudega B, Luirink J.
Targeting, insertion, and localization of *E. coli* YidC.
J Biol Chem (2002) 277(15):12718-23.

Drew D, Sjostrand D, Nilsson J, Urbig T, Chin CN, de Gier JW, von Heijne G.
Rapid topology mapping of *E. coli* inner-membrane proteins by prediction and PhoA/GFP fusion analysis.
Proc Natl Acad Sci U S A (2002) 99(5):2690-5.

Drew D, von Heijne G, Nordlund P, de Gier JW.

Green fluorescent protein as an indicator to monitor membrane protein overexpression in E. coli.

FEBS Lett. (2001) 507(2):220-4.