

~FRASER J. MOSS PH. D.~
CURRICULUM VITAE

FEBRUARY 28, 2021

PERSONAL INFORMATION

Education

School: University of Southampton, University Road, Southampton, SO17 1BJ, U.K.
Degree: B.Sc. Hons. 1st Class, Physiology & Pharmacology
Dates: 09/1994 – 06/1998

Post-Graduate Training

Institution: University College London, Gower Street, London, WC1E 6BT, U.K.
Degree: Ph.D. Pharmacology
Dates: 10/1998-05/2002

Ph.D. Thesis

Title: The cloning and functional characterisation of a family of human stargazin-like genes.
Ph.D. Thesis Committee: Annette C. Dolphin (University College London), Jeffrey J. Clare (GlaxoSmithKline), R. Alan North (University of Manchester).

Contact Information

Department: Dept. Physiology & Biophysics, Case Western Reserve University.
Office Address: School of Medicine (E550-B)
Office Phone: (216) 368-5405
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ACADEMIC APPOINTMENTS

Position/Rank: Faculty - Instructor
Institution/Department: Case Western Reserve University, Dept. Physiology & Biophysics
Dates: 07/01/2014-Present

Position/Rank: Postdoctoral Fellow
Institution/Department: Case Western Reserve University, Dept. Physiology & Biophysics
Dates: 11/01/2009-06/30/2014

Position/Rank: Staff Research Scientist
Institution/Department: California Institute of Technology, Div. Biology
Dates: 07/2008-10/2009

Position/Rank: Academic Consultant
Institution/Department: Neurion Pharmaceuticals, Pasadena, CA.
Dates: 2004-2009

Position/Rank: Postdoctoral Fellow
Institution/Department: California Institute of Technology, Div. Biology
Dates: 07/2002-07/2008

OTHER PROFESSIONAL APPOINTMENTS

Position/Rank: Ph.D. Graduate student industry placement
Institution/Department: GlaxoSmithKline Medicines Research Centre, Stevenage, U.K.
Dates: 09/1/1998-08/31/1999

Position/Rank: Undergraduate Research Student
Institution/Department: Eli Lilly Research Centre Ltd. Windlesham, U.K.
Dates: 07/1996-09/1997

HONORS AND AWARDS

2021-Present	Co-Investigator R01 DK128315, NIH
2019-Present	Key personnel Department of Defense—Air Force Research Laboratories, FA8650-19-C-6103
2017-Present	Key personnel & co-author NIH R01 DK113197
2016-Present	Key personnel on ONR grant N00141612535
2014-2019	Key personnel on ONR grant N000141512060
2013	American Physiological Society Postdoctoral Travel Award IUPS 2013
2005-2007	American Heart Association (Western States Affiliate) Postdoctoral Fellowship.
2005-2009	Key personnel & co-authored NIH R01 HL079350
2005-2007	Most Valuable Scientist – www.scientistsolutions.com
1998-2001	GlaxoSmithKline/Medical Research Council CASE Ph. D. Scholarship

MEMBERSHIP IN PROFESSIONAL SOCIETIES

2010-Present	American Physiological Society, Member
2017-Present	AAAS, Member
2004-Present	Biophysical Society, Member
2001-2011, 2013-2016	Society for Neuroscience, Member
1998-2002	Physiological Society (London), Student Member

PROFESSIONAL SERVICES

Journal reviews

2002 – Present: Reviewed articles submitted to Journal of Neuroscience, Nature Neuroscience, Journal of Physiology and Proceedings of the National Academy of Sciences USA, American Journal of Physiology: Renal.

Advisory Groups

2005-2009	Forum Moderator at www.Scientistsolutions.com
2009-Present	President at www.Scientistsolutions.com

COMMITTEE SERVICE

Departmental Committees (CWRU)

Committee Name/Role: Sara Taki PhD student committee, Dept. Physiology & Biophysics, CWRU/ member.
Dates of Service: (2019 – present)

Committee Name/Role: Dept. Physiology & Biophysics, CWRU, Infrastructure committee / member.
Dates of Service: (2018 – present)

Committee Name/Role: Dept. Physiology & Biophysics, CWRU, Web site committee / member.
Dates of Service: (2018 – present)

Ph. D. Program Focus group with Dr. Corey Smith. Dept. Physiology & Biophysics, CWRU
Dates of Service: (Feb-March 2018)

TEACHING

Teaching Activities

a. School of Medicine (CWRU)

1. SAMI Heart failure case: - 6 hours, 10/23/2020
2. SAMI Diabetic ketoacidosis case: - 6 hours, 01/24/2020
3. SAMI Heart failure case: - 6 hours, 10/11/2019
4. Cardiac Muscle Function: Integrated Regulation by Electrophysiological & Neurohumoral Mechanisms. Block 4 Homeostasis, Team-based learning session - 4 hours, 3/7/2018
5. Cardiac Muscle Function: Contractility at the Cellular & Systems Level. Block 4 Homeostasis, Team-based learning session - 4 hours, 2/28/2018.
6. Integrated Cardiac Signaling. Block 4 Homeostasis, Team-based learning session - 4 hours, 10/11/2017
7. Cardiac Muscle Function: Integrated Regulation by Electrophysiological & Neurohumoral Mechanisms. Block 4 Homeostasis, Team-based learning session - 4 hours, 3/1/2017
8. Cardiac Muscle Function: Contractility at the Cellular & Systems Level. Block 4 Homeostasis, Team-based learning session - 4 hours, 2/22/2017.
9. Cardiac Muscle Function: Contractility at the Cellular & Systems Level. Block 4 Homeostasis, Team-based learning session - 4 hours, 2/20/2013.

10. Electrophysiology of cardiac muscle cells and cardiac conduction mechanisms. Block 4 Homeostasis, Team-based learning session - 4 hours, 2/25/2013.

b. Dept. Physiology & Biophysics (CWRU)

1. Regulation of extracellular osmolarity and renal water secretion (PHOL 481), Boron and Boulpaep Chapter 38 "Urine Concentration and dilution" - 8 hours, 11/26/2019
2. Transport of acids and Bases (PHOL 481), Boron and Boulpaep Chapter 39 - 8 hours, 12/02/2019
3. Regulation of extracellular osmolarity and renal water secretion (PHOL 481), Boron and Boulpaep Chapter 38 "Urine Concentration and dilution" - 8 hours, 11/30/2017
4. Regulation of extracellular osmolarity and renal water secretion (PHOL 481), Boron and Boulpaep Chapter 38 "Urine Concentration and dilution" - 8 hours, 11/29/2018
5. Transport of acids and Bases (PHOL 481), Boron and Boulpaep Chapter 39 - 8 hours, 12/03/2018
6. Regulation of extracellular osmolarity and renal water secretion (PHOL 481), Boron and Boulpaep Chapter 38 "Urine Concentration and dilution" - 8 hours, 11/30/2017
7. Transport of acids and Bases (PHOL 481), Boron and Boulpaep Chapter 39 - 8 hours, 12/04/2017
8. Regulation of extracellular osmolarity and renal water secretion (PHOL 481), Boron and Boulpaep Chapter 38 "Urine Concentration and dilution" - 8 hours, 11/29/2016
9. Transport of acids and Bases (PHOL 481), Boron and Boulpaep Chapter 39 - 8 hours, 12/01/2016
10. Regulation of extracellular osmolarity and renal water secretion (PHOL 481), Boron and Boulpaep Chapter 38 "Urine Concentration and dilution" - 8 hours, 11/24/2015
11. Transport of acids and Bases (PHOL 481), Boron and Boulpaep Chapter 39 - 8 hours, 11/24/2015.
12. Regulation of extracellular osmolarity and renal water secretion (PHOL 481), Boron and Boulpaep Chapter 38 "Urine Concentration and dilution" - 8 hours, 11/24/2014
13. Transport of acids and Bases (PHOL 481), Boron and Boulpaep Chapter 39 - 8 hours, 11/25/2014.

c. Other teaching

1. Summer Medical and Dental Education Program (SMDEP), CWRU - 4 hours 07/18/2013

Presentations

1. Substrates & modulation of the electrogenic Na/HCO₃ cotransport NBCe1, post-graduate PHOL 498, CWRU Dept. Physiology & Biophysics 5/27/2014
2. Functional characterization of polymorphisms in SLC4A7 associated with extreme blood-pressure traits, post-graduate, CWRU Dept. Physiology & Biophysics Annual retreat, 09/24/2015.
3. Extracellular sensing of molecular CO₂ and HCO₃⁻, post-graduate, CWRU Dept. Physiology & Biophysics Annual retreat, 10/20/2017
4. Sensors and effectors of acid-base homeostasis, post-graduate, CWRU Dept. Physiology & Biophysics Annual retreat, 09/19/2019.

Trainees / Mentees

1. Sara Taki (CWRU 2018-2022), 2.5 year, Ph. D. student, Dept. Physiology & Biophysics, CWRU.
2. Eva Gilker (CWRU 2019-2023), 1 year, Ph. D. candidate, Dept. Physiology & Biophysics, CWRU.
3. Cassandra Barone (CWRU BSTP 2020), 6 weeks, Ph. D. candidate, Dept. Physiology & Biophysics, CWRU.
4. Ajeet Kalepu (CWRU, Undergraduate, PreMed 2020-2021), 0.6 year, Biology major, research student.
5. Shreyaa Mukund (CWRU, Undergraduate, PreMed 2020-2021), 0.6 year, Psychology & French major, research student.
6. Erik Koritzinsky (CWRU 2019), 0.3 year, MSTP rotation student, Dept. Physiology & Biophysics, CWRU.
7. Abhi Deverakonda (CWRU Summer Student), 0.5 year, High-School Summer Research Student, Senior, Solon High School, Ohio (2019), Undergraduate, NYU, NY, SURP 2020.
8. Steven O'Neill (CWRU 2019-2020), 1 year, undergraduate. SURP and continuing research student.
9. Anosh Akbar (CWRU 2018-20), 2.0 years, Medical Physiology CWRU Class of 2020. Present position: Medical Student, West Virginia School of Osteopathic Medicine.
10. Manfred Cewe (CWRU 2018-20), 2.0 years, Medical Physiology CWRU Class of 2020. Present position: MS Medical Physiology CWRU Class of 2020 graduate. AMCAS Applicant 2021.
11. Taylor Evans (CWRU 2018-20), 2.0 years, Medical Physiology CWRU Class of 2020. Present position: MS Medical Physiology CWRU Class of 2020 graduate. AMCAS Applicant 2021.
12. Candice Miller (CWRU 2018-20), 2.0 years, Medical Physiology CWRU Class of 2020. Present position: MS Medical Physiology CWRU Class of 2020 graduate. AMCAS Applicant 2021.
13. Zainab Molani (CWRU 2018-20), 2.0 years, Medical Physiology CWRU Class of 2020. Present position: Growth Marketing Specialist at Flare Health, IL, USA. AMCAS Applicant 2021
14. Tahaum Saood (CWRU 2018-20), 0.4 years, MS Medical Physiology CWRU Class of 2020. Present position: Dental School student, ATSU-ASDOH in Arizona.

15. Michael Jolly (CWRU 2017-19), 2.0 years, MS Medical Physiology CWRU Class of 2019. Present position: 2020 AMCAS Applicant.
16. Jiyeon Park (CWRU 2017-19), 2.0 years, MS Medical Physiology CWRU Class of 2019. Present position: 2020 AMCAS Applicant.
17. Darpan Kaur, 2.0 years (CWRU 2017-19), MS Medical Physiology CWRU Class of 2019. Present position: Medical Student, 2020 Matriculation, University of Toledo, OH.
18. Mehemet Yilmaz (CWRU 2017-18, 2019), 0.4 years, High-school student. Present position: Senior, Solon High School, Ohio.
19. Jacob Poppo (CWRU 2016 & 2017), 1.5 years, MS Medical Physiology CWRU Class of 2017. Present position: Research Associate 2, Dept. Physiology & Biophysics, CWRU.
20. Yagiz Ozdag (CWRU 2016 & 2017), 0.5 years, summer student. Present position: Medical student, M-4 at Yeditepe University School of Medicine in Istanbul, Turkey.
21. Lorina Haziri (CWRU 2017), 0.3 years, summer student. Present position: Medical student, (CWRU 2017) M-4 at Yeditepe University School of Medicine in Istanbul, Turkey.
22. Shilpa Kamani B.S. (CWRU 2015-16), 1 year, undergraduate. Present position: AmeriCorps Fellow at Tenacity.
23. Ahlam Salameh Ph. D. (CWRU 2012-16), 4 years, Ph. D. Student. Present position: Adjunct Faculty Instructor/Clinical Research Scientist, School of Medicine, CWRU.
24. Shawnalea Frazier Ph. D., (Caltech 2006-9) 3 years, Ph. D. Student. Present position: Postdoctoral Associate at Novo Ventures, San Francisco CA.
25. Kim Scott Ph. D., 2 years, (Caltech 2006-8), undergraduate student. Present position: Research scientist, Brain & Cognitive Sciences, Massachusetts Institute of Technology.
26. Kiowa Bower Ph. D. (Caltech 2005-7), 2 years, Ph. D Student. Present position: Assistant Professor at Dominican University of California.
27. Princess I. Imoukhuede Ph. D. (Caltech 2004-8), 4 years, Ph. D. Student. Present position: Associate Professor at Washington University, St Louis.
28. Teresa A. Murray Ph. D. (Caltech 2008), 0.5 years, visiting Ph. D. student. Present position: Associate Professor at Louisiana Tech University.
29. Alex Graham (UCL, 2001), 1 year, undergraduate student. Present position: Principal Consultant at Egremont Group.

RESEARCH SUPPORT

2021/04/01 – 2026/03/31

R01 DK128315, NIH

Boron, Walter (PI)

Molecular mechanism of Na⁺-coupled HCO₃⁻ transporters: transport of CO₃⁼ and CO₂.

Role: Co-Investigator (30% effort)

2019/09/01-2021/08/31

FA8650-19-C-6103 DoD-Air Force Research Laboratories

Decker, Michael, (PI)

Neurophysiological & Cognitive Effects of Rapid Oscillating Hyperoxic Conditions.

Role: Key personnel – Instructor (20% effort)

2017/06/10-2021/04/30

R01 DK113197, NIH

Boron, Walter (PI)

Role of RPTP γ in sensing and transducing acid-base disturbances in the renal proximal tubule

Role: Key Personnel - Instructor (50% effort)

2016/01/01-2021/12/31

Office of Naval Research N00141612535

Boron, Walter (PI)

Molecular mechanisms and pathways for gas transport across biological membranes and implications for physiology and performance

Role: Key personnel - Instructor (30% effort)

2014/01/05-2019/02/05

Office of Naval Research N000141512060

Boron, Walter (PI)

Gas Channels

Role: Key personnel - Instructor

2009/04/05-2014/08/30
R01 DK081567, NIH
Boron, Walter (PI)
Regulation of Proximal Tubule Transport.
Role: Post-Doctoral Scholar (25% effort)

2008/09/30-2013/09/30
R01 NS18400, NIH
Molecular Physiology of Bicarbonate Transport in the Brain
Role: Post-Doctoral Scholar (25% effort)

2010/07/01-2013/06/30
R01 HL090969, NIH
Morrison, Alanna (PI)
Role of the Solute Carrier Gene Family in Hypertension
Role: Post-Doctoral Scholar (25% effort)

2006/12/01-2012/11/11
R37 DK30344, NIH
Boron, Walter (PI)
Physiology of electrogenic $\text{Na}^+/\text{HCO}_3^-$ cotransporters
Role: Post-Doctoral Scholar (25% effort)

2005/02/01-2010/01/31
R01 HL079350, NIH
Dougherty, Dennis A. (PI)
HERG Channel in Acquired and Inherited Long-QT Syndrome
Role: Post-Doctoral Scholar (25% effort)

2005-2007
American Heart Association (Western States Affiliate) Postdoctoral Fellowship.
Fraser Moss (PI)
hERG K^+ channel block underlying acquired Long-QT syndrome probed with natural and unnatural amino acid mutagenesis in mammalian cells.

EXPERIMENTAL TECHNIQUES

<u>Electrophysiology</u>	Two electrode voltage-clamp of <i>Xenopus</i> oocytes. Ion-sensitive electrode recording of intracellular pH, Na^+ and Cl^- . Whole-cell patch clamp electrophysiology on mammalian cell lines. Extensive use of Axon Instruments (Molecular Devices) amplifiers and software. Multichannel Systems Robocyte and RoboInject <i>Xenopus</i> oocytes electrophysiology devices Celectricon Dynaflow chip-based perfusion system. Single-cell electroporation of mammalian cells (using Axoporation 800A).
<u>Specialized Perfusion</u>	Out-of-equilibrium solution perfusion that varies the $[\text{CO}_2]_o$ while maintaining constant $[\text{HCO}_3^-]_o$ and pH_o , or varies $[\text{HCO}_3^-]_o$ while maintaining constant $[\text{CO}_2]_o$ and pH_o .
<u>Gas flux assay</u>	Co-invented a neutral-buoyancy assay (NBA) to estimate transmembrane gas flux.
<u>Microscopy</u>	Conventional and spectral imaging confocal microscopy. Förster resonance energy transfer (sensitized emission, donor recovery after acceptor photobleach) in live and fixed cell cultures. Pixel-by-pixel analysis of protein stoichiometry and interactions by FRET..
<u>Uptake assays</u>	^3H and ^{14}C neurotransmitter and glycerol uptake assays in mammalian cells and <i>Xenopus</i> oocytes.
<u>Flow-cytometry</u>	Size and shape analysis of red blood cells using BD LSRII for forward- and side-scatter analyses, and the Amnis ImageStream for flow-cytometry integrated with image analysis.
<u>Molecular Biology</u>	CRISPR/Cas 9 knockout/in technology . Rapid integration of large fragments for fusion-protein construction by PCR. RT-PCR, 5' & 3' RACE, Splice-overlap PCR, site directed mutagenesis.

	Northern blot. mRNA and tRNA <i>in vitro</i> transcription. Standard cDNA, total RNA, mRNA isolation techniques. Cloning, subcloning, mutagenesis.
<u>Viral Vectors</u>	AAV and adenovirus vector design and production. Viral transduction of cell lines and neuronal cultures. Stereotaxic microinjection of AAV vectors into mouse brain.
<u>Protein Biochemistry</u>	Expression and purification of recombinant proteins. Rabbit reticulocyte <i>in vitro</i> translation. SDS-PAGE electrophoresis and western blot. Affinity purification of antibodies from sera. ELISA.
<u>Cytochemistry</u>	DAB and fluorescence immunohistochemistry in fixed wax embedded or frozen tissue slices. Fluorescence immunocytochemistry in cultured cell lines and neurons.
<u>Tissue culture</u>	N2a, HEK293, CHO, COS, PC12 mammalian cell lines and rat cerebellar granule cells. Transient and stable cell transfection.
<u>Microfluorimetry</u>	Ratiometric BCECF imaging of intracellular pH in mammalian cells and neuronal cultures. Medium-throughput Fluo-3 calcium imaging.
<u>Mass Spectrometry</u>	Proteomic and lipidomic analysis of erythrocyte ghosts.

SOFTWARE PROFICIENCY

pClamp Electrophysiology Suite	DNA Star Molecular Biology Suite
Image J	SnapGene Molecular Biology Suite
Matlab	Adobe Photoshop
Origin Graphing and Analysis	Microsoft Office
PyMol	EndNote
Zotero	MOLE
IDEAS Flow cytometry analysis	In-house ion-sensitive electrophysiology software
Google G-Suite applications	Microsoft Office

BIBLIOGRAPHY

Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/myncbi/fraser.moss.1/bibliography/public/>

Peer Reviewed Articles

- Lang B, S Waterman, A Pinto, D Jones, **F Moss**, J Boot, P Brust, M Williams, K Stauderman, M Harpold, M Motomura, JW Moll, A Vincent & J Newsom-Davis. The role of autoantibodies in Lambert-Eaton myasthenic syndrome. *Ann N Y Acad Sci* 841:596–605, 1998. (32 –citations)
- Pinto A, S Gillard, **F Moss**, K Whyte, P Brust, M Williams, K Stauderman, M Harpold, B Lang, J Newsom-Davis, D Bleakman, D Lodge & J Boot. Human autoantibodies specific for the $\alpha 1A$ calcium channel subunit reduce both P-type and Q-type calcium currents in cerebellar neurons. *Proc Natl Acad Sci USA* 95:8328–8333, 1998. (93 –citations)
- Pinto A, **F Moss**, B Lang, J Boot, P Brust, M Williams, K Stauderman, M Harpold & J Newsom-Davis. Differential effect of Lambert-Eaton myasthenic syndrome immunoglobulin on cloned neuronal voltage-gated calcium channels. *Ann N Y Acad Sci* 841:687–690, 1998.
- Brodbeck J, A Davies, J-M Courtney, A Meir, N Balaguero, C Canti, **FJ Moss**, KM Page, WS Pratt, SP Hunt, J Barclay, M Rees & AC Dolphin. The ducky mutation in *Cacna2d2* results in altered Purkinje cell morphology and is associated with the expression of a truncated $\alpha 2\delta$ -2 protein with abnormal function. *J Biol Chem* 277:7684–7693, 2002. (108 –citations)
- Moss FJ**, P Viard, A Davies, F Bertaso, KM Page, A Graham, C Cantí, M Plumpton, C Plumpton, JJ Clare & AC Dolphin. The novel product of a five-exon stargazin-related gene abolishes *Cav2.2* calcium channel expression. *EMBO J* 21:1514–1523, 2002. (67 –citations)
- Moss FJ**, AC Dolphin & JJ Clare. Human neuronal stargazin-like proteins, $\gamma 2$, $\gamma 3$ and $\gamma 4$; an investigation of their specific localization in human brain and their influence on *Cav2.1* voltage-dependent calcium channels expressed in *Xenopus* oocytes. *BMC Neurosci* 4:23, 2003. (36 –citations)

7. Ferron L, A Davies, KM Page, DJ Cox, J Leroy, D Waithe, AJ Butcher, P Sellaturay, S Bolsover, WS Pratt, **FJ Moss** & AC Dolphin. The stargazin-related protein $\gamma 7$ interacts with the mRNA-binding protein heterogeneous nuclear ribonucleoprotein A2 and regulates the stability of specific mRNAs, including Cav2.2. *J Neurosci* 28:10604–10617, 2008. (24 –citations)
8. Imoukhuede PI, **FJ Moss**, DJ Michael, RH Chow & HA Lester. Ezrin mediates tethering of the gamma-aminobutyric acid transporter GAT1 to actin filaments via a C-terminal PDZ-interacting domain. *Biophys J* 96:2949–2960, 2009.
9. **Moss FJ**, PI Imoukhuede, K Scott, J Hu, JL Jankowsky, MW Quick & HA Lester. GABA transporter function, oligomerization state, and anchoring: correlates with subcellularly resolved FRET. *J Gen Physiol* 134:489–521, 2009. (Cover article for the journal issue – 31 Citations)
10. Son CD, **FJ Moss**, BN Cohen & HA Lester. Nicotine normalizes intracellular subunit stoichiometry of nicotinic receptors carrying mutations linked to autosomal dominant nocturnal frontal lobe epilepsy. *Mol Pharmacol* 75:1137–1148, 2009. (41 –citations)
11. Srinivasan R, R Pantoja, **FJ Moss**, EDW Mackey, CD Son, J Miwa & HA Lester. Nicotine up-regulates $\alpha 4\beta 2$ nicotinic receptors and ER exit sites via stoichiometry-dependent chaperoning. *J Gen Physiol* 137:59–79, 2011. (118 –citations)
12. Chen L-M, X Qin, **FJ Moss**, Y Liu & WF Boron. Effect of simultaneously replacing putative TM6 and TM12 of human NBCe1-A with those from NBCn1 on surface abundance in *Xenopus* oocytes. *J Membr Biol* 245:131–140, 2012.
13. Srinivasan R, CI Richards, C Dilworth, **FJ Moss**, DA Dougherty & HA Lester. Förster resonance energy transfer (FRET) correlates of altered subunit stoichiometry in cys-loop receptors, exemplified by nicotinic $\alpha 4\beta 2$. *Int J Mol Sci* 13:10022–10040, 2012.
14. Coley AA, VA Ruffin, **FJ Moss**, U Hopfer & WF Boron. Immunocytochemical identification of electroneutral Na^+ -coupled HCO_3^- transporters in freshly dissociated mouse medullary raphe neurons. *Neuroscience* 246:451–467, 2013. PMID: [23500099](https://pubmed.ncbi.nlm.nih.gov/23500099/), PMCID: [PMC3769942](https://pubmed.ncbi.nlm.nih.gov/PMC3769942/), doi: [10.1016/j.neuroscience.2013.02.064](https://doi.org/10.1016/j.neuroscience.2013.02.064)
15. McHugh DR, CU Cotton, **FJ Moss**, M Vitko, DM Valerio, TJ Kelley, S Hao, A Jafri, ML Drumm, WF Boron, RC Stern, K McBennett & CA Hodges. Linaclotide improves gastrointestinal transit in cystic fibrosis mice by inhibiting sodium/hydrogen exchanger 3. *American Journal of Physiology-Gastrointestinal and Liver Physiology* 315:G868–G878, 2018. PMID: [30118317](https://pubmed.ncbi.nlm.nih.gov/30118317/) doi: [10.1152/ajpgi.00261.2017](https://doi.org/10.1152/ajpgi.00261.2017)
16. McHugh DR, CU Cotton, **FJ Moss**, M Vitko, DM Valerio, TJ Kelley, S Hao, A Jafri, ML Drumm, WF Boron, RC Stern, K McBennett & CA Hodges. Linaclotide improves gastrointestinal transit in cystic fibrosis mice by inhibiting sodium/hydrogen exchanger 3. *APSSelect* 5, 2018. doi: [10.1152/ajpgi.00261.2017](https://doi.org/10.1152/ajpgi.00261.2017)
17. **Moss FJ**, P Mahinthichaichan, D Lodowski, T. Kowatz, E Tajkhorshid, A Engel, WF Boron & A Vahedi-Faridi. Aquaporin-7: A dynamic aquaglyceroporin with higher water and glycerol transport capacity than its bacterial homolog GlpF. *Frontiers in Physiology* 11, 2020. PMID: [32695023](https://pubmed.ncbi.nlm.nih.gov/32695023/), PMCID: [PMC7339978](https://pubmed.ncbi.nlm.nih.gov/PMC7339978/) doi: [10.3389/fphys.2020.00728](https://doi.org/10.3389/fphys.2020.00728).
18. **Moss FJ** & WF Boron. Carbonic anhydrase enhances activity of endogenous Na-H exchangers and not the $\text{Na}^+/\text{HCO}_3^-$ cotransporter, NBCe1, when expressed in *Xenopus* oocytes. *J Physiol (Lond)* 598:5821–5856, 2020. PMID: [32969493](https://pubmed.ncbi.nlm.nih.gov/32969493/), PMCID: [PMC7747792](https://pubmed.ncbi.nlm.nih.gov/PMC7747792/), doi: [10.1113/JP280143](https://doi.org/10.1113/JP280143)
19. Boyne K, DA Corey, P Zhao, B Lu, Boron, WF, **Moss, FJ** & TJ Kelley. Carbonic anhydrase and soluble adenylate cyclase regulation of cystic fibrosis cellular phenotypes. *Am J Physiol Lung Cell Mol Physiol* In Revision, 2021.

Pre-prints

1. Zhao P, RR Geyer, AI Salameh, AB Wass, S Taki, Huffman, Dale E, HJ Meyerson, G Gros, R Occhipinti, **FJ Moss** & WF Boron. Role of channels in the oxygen permeability of red blood cells. *bioRxiv* (August 28, 2020). doi: [10.1101/2020.08.28.265066](https://doi.org/10.1101/2020.08.28.265066).

Review Articles

1. Michenkova M, S Taki, MC Blosser, HJ Hwang, T Kowatz, **FJ Moss**, R Occhipinti, X Qin, S Sen, E Shinn, D-K Wang, B Zeise, P Zhao, N Malmstadt, A Vahedi-Faridi, E Tajkhorshid & WF. Boron. CO_2 Transport across membranes. *Interface Focus*, 11:2, 2021. PMID: [33633837](https://pubmed.ncbi.nlm.nih.gov/33633837/), PMCID: [PMC7898146](https://pubmed.ncbi.nlm.nih.gov/PMC7898146/), doi: <https://doi.org/10.1098/rsfs.2020.0090>.

Book Chapters

1. **Moss FJ**, PI Imoukhuede, H Just & HA Lester. GABA Transporter Oligomerization, Trafficking and Pharmacology Determine Neuronal Excitability. In Schwartzkroin PA, ed. *Encyclopedia of Basic Epilepsy*

Patents

1. **Moss FJ**, CD Son, R Srinivasan & HA Lester. Methods and systems for detection of stoichiometry by Förster resonance energy transfer. 2014. <https://www.google.com/patents/US8642352>.

Oral presentations and seminars

1. Moss FJ. “hERG K⁺ channel block underlying acquired Long-QT syndrome probed with natural and unnatural amino acid mutagenesis in mammalian cells.” 6th Annual Aurora Biomed Ion Channel Retreat. Vancouver, BC, Canada. Jun. 24, 2008.
2. Moss FJ. “Extracellular sensing of molecular CO₂ and HCO₃⁻.” 38th Congress of the International Union of Physiological Sciences, 2017. Rio de Janeiro, Brazil. Aug. 3, 2017.

Abstracts

1. **Moss FJ**, M Plumpton, P Sanseau, AC Dolphin & JJ Clare. The identification of a family of voltage-dependent calcium channel γ subunits; distribution and functional effects [Online]. In *European Journal of Neuroscience*. Federation of European Neuroscience Societies 2000 meeting: Prog. No.10.06, 2000.
2. **Moss FJ**, M Plumpton, P Sanseau, JJ Clare & AC Dolphin. Localisation and electrophysiological studies of human neuronal stargazin-like proteins. [Online]. In *Neuroscience Abstracts*. Society for Neuroscience: Prog. No. 381.17. 2001.
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