Curriculum Vitae Candice Fung PhD

University Training

2007-2009: The University of Melbourne, Melbourne, Australia
Bachelor of Biomedical Science

2009-2011: The University of Melbourne, Melbourne, Australia
Master of Science with Distinction; Dean's Honours List (Top 5% of graduates within the Faculty of Science)

PhD

2012-2017, officially completed 31.01.2017
'The role of submucosal neurons in physiological and pathophysiological intestinal secretion.'
Supervisors: Prof. Joel Bornstein, Dr. Jaime Foong
Supported by an Australian Postgraduate Award

Current academic position

2017 – present: Postdoctoral researcher, Translational Research Center for Gastrointestinal Disorders (TARGID) at KU Leuven. Group of Prof. Pieter Vanden Berghe.

Professional Service

2012 – 2013: Teaching and grading undergraduates undertaking 'Human Physiology', 'Research-based Physiology' and Neurophysiology: Neurons and Circuits'; The University of Melbourne

2018 – 2022: Teaching; 'Hot Topics in Microscopy for Biomedical Research'; KU Leuven

2022 – 2025: Peer reviewed for Frontiers in Cellular Neuroscience, The Journal of Nutritional Biochemistry, Neurogastroenterology & Motility, Journal of Neurochemistry, Communications Biology, and Scientific Reports.

2023 – present: Review Editor for Gut-Brain Axis – Frontiers in Neuroscience

2025: Guest lecturer; 'Advances in Gastroenterology' and 'Advances in Microscopy for Biomedical Research'; KU Leuven

Scientific Activity

18 publications 1098 citations h-index 14
3 invited talks (2022: KU Leuven, BE; 2025: Flinders University and University of Melbourne, AU)
Current co-supervisor of 1 PhD; Completed: 1 PhD and 1 MSc (as co-supervisor)

Awards

2013 1st place in "Under the Coverslip" scientific photography competition. The largest annual scientific photography competition at the University of Melbourne, open to all research students from universities and institutes across Melbourne.

Best oral presentation awards:

2020 GIREM Best Oral Presentation; Title: Examining the processing of luminal information by the Enteric Nervous System using Ca^{2+} imaging. Belgian week of gastroenterology (Belgian Network on Gastrointestinal Regulatory Mechanisms), Antwerp, BE.

2021 Best Presentation – 3rd prize; Title: Examining the processing of luminal information by the Enteric Nervous System using Ca^{2+} imaging; 2021 Little Brain Big Brain (LBBB) virtual meeting.

2022 Best Oral Communication; Title: Examining the effects of an acute high fructose diet on luminal signaling in the murine enteric nervous system; 6th International Symposium on "Development of the ENS: the First 1000 Days" held in Ferrara, IT.

2024 Best Podium Presentation; Title: Longitudinal intravital imaging of the enteric nervous system in mouse small intestine; 7th International Enteric Nervous System Development Meeting: Connection, Cross-talk and Collaboration 2024 held in Philadelphia, USA.

2025 Best Presentation – 1st prize; Title: Nutrient signaling in the enteric nervous system of mouse small intestine; 'Sensational Research Day' held in Brussels, BE.

2025 Autonomic Neuroscience: Basic and Clinical - Best Basic Oral Award; Title: Signaling between neurons in the mesentery and myenteric neurons in the mouse ileum; Australasian Society for Autonomic Neuroscience 2025 Meeting held in Adelaide, AU.

Young investigator Awards:

2016 ANMS Young Investigator Award; For abstract submitted to 2016 American Neurogastroenterology and Motility Society Young Investigator Forum held in San Francisco, USA.

2021 FNM Young Investigator Award; For abstract submitted to 4th International Meeting of the Federation of Neurogastroenterology and Motility (FNM 2021) held in Adelaide, AU.

2024 Young Investigator Award; For abstract submitted to 7th International Enteric Nervous System Development Meeting: Connection, Cross-talk and Collaboration 2024 ENS Development Meeting held in Philadelphia, USA.

Travel awards:

2014 Overseas Research Experience Scholarship A limited number of Overseas Research Experience Scholarships are awarded annually on a competitive basis. The University of Melbourne, AU.

2018 Company of Biologists Travel Award; For oral presented at the 5th International Symposium on “Development of the Enteric Nervous System” held in Boston, USA.

2025 Janelia Conference Travel Scholarship; Full travel support for attending the ‘Second Brains: Enteric Nervous Systems Across Phylogeny’ conference. Conference participation was highly selective (limited to 70 participants). Held at the Janelia Research Campus, Howard Hughes Medical Institute, USA.

Publications

C. Fung, T. Venneman, A.M. Holland, T. Martens, M.I. Alata, M.M. Hao, C. Alar, Y. Obata, J. Tack, A. Sifrim, V. Pachnis, W. Boesmans, P. Vanden Berghe (2025) Nutrients activate distinct patterns of small-intestinal enteric neurons. *Nature* 644, 1069–1077.

C. Fung, P. Vanden Berghe (2024) Regenerating enteric neurites navigate the adult intestine using a glial positioning system? *Neuron* 112 (18), 2993-2995.

T. Plum, R. Binzberger, R. Thiele, F. Shang, D. Postrach, **C. Fung**, M. Fortea, N. Stakenborg, Z. Wang, A. Tappe-Theodor, T. Poth, D.A.A. MacLaren, G. Boeckxstaens, R. Kuner, C. Pitzer, H. Monyer, C. Xin, J.V. Bonventre, S. Tanaka, D. Voehringer, P. Vanden Berghe, J. Strid, T.B. Feyerabend, H.R. Rodewald (2023) Mast cells link immune sensing to antigen-avoidance behaviour. *Nature* 620, 634–642.

P. Vanden Berghe, **C. Fung** (2023) Optical Approaches to Understanding Enteric Circuits Along the Radial Axis. *The Enteric Nervous System II*, 71-79.

C. Fung, B. Cools, S. Malagola, T. Martens, J. Tack, Y. Kazwiny, P. Vanden Berghe (2021) Luminal short-chain fatty acids and 5-HT acutely activate myenteric neurons in the mouse proximal colon. *Neurogastroenterology & Motility* 33 (12), e14186.

Y.N. Kang, **C. Fung**, P. Vanden Berghe (2021) Gut innervation and enteric nervous system development: a spatial, temporal and molecular tour de force. *Development* 148 (3), dev182543.

C. Fung, P. Vanden Berghe (2020) Functional circuits and signal processing in the enteric nervous system. *Cellular and Molecular Life Sciences* 77 (22), 4505-4522.

Y. Obata, Á. Castaño, S. Boeing, A.C. Bon-Frauches, **C. Fung**, T. Fallesen, M. Gomez de Agüero, B. Yilmaz, R. Lopes, A. Huseynova, S. Horswell, M.R. Maradana, W. Boesmans, P. Vanden Berghe, A.J. Murray, B. Stockinger, A.J. Macpherson, V. Pachnis (2020) Neuronal programming by microbiota regulates intestinal physiology. *Nature* 578 (7794), 284-289.

C. Fung, P. Vanden Berghe (2020) Breaking it down: the metabolism of neurotransmitters in the colonic wall. *Journal Of Physiology-London* 598 (20), 4431-4432.

M.M. Hao, **C. Fung**, W. Boesmans, K. Lowette, J. Tack, P. Vanden Berghe (2020) Development of the intrinsic innervation of the small bowel mucosa and villi. *American Journal of Physiology-Gastrointestinal and Liver Physiology* 318 (1) G53-G65.

Z. Li, **C. Fung**, P. Vanden Berghe (2020) Electric Activity and Neuronal Components in the Gut Wall, Encyclopedia of Gastroenterology (Second Edition), Academic Press, Pages 133-145.

W. Boesmans, M.M. Hao, **C. Fung**, Z. Li, C. Van den Haute, J. Tack J, V. Pachnis, P. Vanden Berghe. (2019) Structurally defined signaling in neuro-glia units in the enteric nervous system. *Glia,* 67 (6), 1167-1178.

M. Swaminathan, **C. Fung**, D.I. Finkelstein, J.C. Bornstein, J.P.P. Foong. (2019) α-synuclein regulates development and function of cholinergic enteric neurons in the mouse colon. *Neuroscience* 423, 76-85.

C. Fung, K. Koussoulas, P. Unterweger, A.M. Allen, J.C. Bornstein and J.P.P. Foong. (2018) Cholinergic submucosal neurons display increased excitability following *in vivo* cholera toxin exposure in mouse ileum. *Frontiers in Physiology,* 9:260.

K. Koussoulas, M. Swaminathan, **C. Fung**, J.C. Bornstein and J.P.P. Foong (2018) Neurally released GABA acts via GABAC receptors to modulate Ca^{2+} transients evoked by trains of synaptic inputs, but not responses evoked by single stimuli, in myenteric neurons of the mouse ileum. *Frontiers in Physiology,* 9:97.

C. Fung, W. Boesmans, C. Cirillo, J.P.P. Foong, J.C. Bornstein, P. Vanden Berghe. (2017) VPAC receptor subtypes tune purinergic neuron-to-glia communication in the murine submucosal plexus. *Frontiers in Cellular Neuroscience,* 11:118.

C. Fung, P. Unterweger, L.J. Parry, J.C. Bornstein, J.P.P. Foong. (2014) $VPAC_1$ receptors regulate intestinal secretion and muscle contractility by activating cholinergic neurons in guinea pig jejunum. *American Journal of Physiology – Gastrointestinal and Liver Physiology, 306*(9), G748-58.

C. Fung, M. Ellis, and J.C. Bornstein. (2010) Luminal cholera toxin alters motility in isolated guinea-pig jejunum via a pathway independent of $5\text{-}HT_3$ receptors. *Frontiers in Neuroscience,* 4:162.