BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Simon Sipen Wing	Professor, Division of Endocrinology & Metabolism Department of Medicine
eRA COMMONS USER NAME (credential, e.g., agency login)	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
National Research Council Biotech Res Inst	Postdoc	11/92	Ubiquitin
Harvard Medical School, Boston, MA, USA	Postdoc	12/89	Ubiquitin
McGill University, Montreal, QC	FRCPC	06/87	Endocrinology & Metab
McGill University, Montreal, QC	FRCPC	06/84	Internal Medicine
McGill University, Montreal, QC	MDCM	06/81	Medicine
McGill University, Montreal, QC	BSc	06/77	Biochemistry

A. Personal Statement

The focus of my research is to explore the function and regulation of ubiquitin dependent proteolysis in mammalian tissues. Active projects explore the roles of the ubiquitin system in muscle wasting in various conditions such as cancer as well as the role of this system in spermatogenesis/fertilization. Most recently, I have begun studies in the area of ubiquitin in neurodegenerative disorders.

Positions and Honors

Recent Positions and Employment

University

2006-present	Professor, Dept. of Medicine, McGill University
2003-2011	Director, Division of Endocrinology and Metabolism, McGill University
1999-2006	Associate Professor, Dept. of Medicine, McGill University
1993-1999	Assistant Professor, Dept. of Medicine, McGill University
1998-present	Associate Member, Dept. of Biochemistry, McGill University
1993-present	Associate Member, Dept. of Physiology, McGill University

Hospital

2015-present	Chair, Research Program Council, Research Institute of the McGill University Health Centre
2015-present	Leader, Metabolic Disorders & Complications Program, Research Institute of the McGill University Health Centre
2013- 2015	Director, Experimental Therapeutics & Metabolism Program, Research Institute of the McGill University Health Centre
2003-2011	Director, Division of Endocrinology and Metabolism, McGill University Health Centre, Montreal, Canada
1999-present	Associate Physician, Division of Endocrinology and Metabolism, Department of Medicine, Royal Victoria Hospital/McGill University Health Centre, Montreal, Canada

Honors and Awards

Research Salary Awards

Clinician Scientist Award - Phase II from the Medical Research Council of Canada, 1993-1999

Senior Chercheur Boursier Award from the Fonds de Recherche en Santé du Québec, 1999-2003
Chercheur National Award from the Fonds de Recherche en Santé du Québec, 2003-2008

Research Awards
R. Howard Webster Foundation Grant for excellence in research in reproductive endocrinology from the Royal Victoria Hospital Foundation and Research Institute, November, 1999.
Elected to the American Society for Clinical Investigation, May 2000
Staff Award for Excellence in Research, Dept. of Medicine, McGill University Health Centre, May 2007

Teaching Awards:

- Director's Award for best presentation at Endocrine Grand Rounds in 2000, Division of Endocrinology and Metabolism, McGill University Health Centre

B. Selected Peer-reviewed Publications (*my trainee; +my assistant)

1. Joazeiro CAP, Wing SS, Huang H, Leverson JD, Hunter T, and Liu Y-C. The tyrosine kinase negative regulator c-Cbl as a RING-type, E2-dependent ubiquitin-protein ligase. Science 1999; 286: 309-312

2. Liu Z*, Oughtred R*, and Wing SS. Characterization of $E3^{Histone}$, a novel testis ubiquitin protein ligase which ubiquitinates histones. Mol. Cell. Biol. 2005; 25: 2819-2831

3. Lu Y*, Adegoke OAJ*, Nepveu A, Nakayama KI, Bedard N+, Cheng D, Peng J and Wing SS. USP19 Deubiquitinating Enzyme Supports Cell Proliferation by Stabilizing KPC1, a Ubiquitin Ligase for $p27^{Kip1}$. Mol. Cell. Biol. 2009, 29: 547-558

4. Sundaram P*, Pang Z*, Miao M*, Yu L* and Wing SS. USP19 Deubiquitinating Enzyme Regulates Levels of Major Myofibrillar Proteins in L6 Muscle Cells. Amer. J. Physiol. Endo & Metab 2009, 297: E1283-E1290.

5. Bedard N^{+}, Yang Y^{+}, Gregory M, Cyr DG, Suzuki J, Yu X, Clarke H, Chian RC, Hermo L, O'Flaherty C, Smith CE and Wing SS. Mice Lacking the USP2 Deubiquitinating Enzyme have Severe Male Sub-Fertility Associated with Defects in Fertilization and Sperm Motility. Biol. Repro. 2011, 85: 594-604.

6. Wing SS, Lecker SH and Jagoe RT. Proteolysis in illness associated skeletal muscle atrophy: from pathways to networks. Crit. Rev. in Clin. Lab. Sci. 2011; 48:49-70 (Invited review)

7. Robert F, Mills JR, Agenor A, Wang D, DiMarco S, Cencic R, Tremblay ML, Gallouzi IE, Hekimi S, Wing SS, and Pelletier J. Targeting protein synthesis in a Myc/mTOR-driven model of anorexia-cachexia syndrome delays its onset and prolongs survival. Cancer Res. 2012, 72:747-56.

8. Durcan TM, Kontogiannea M, Bedard N^{+}, Wing SS and Fon EA. Ataxin-3 deubiquitination is coupled to parkin ubiquitination via the E2 ubiquitin-conjugating enzyme. J. Biol. Chem. 2012, 287:531-41.

9. Kitzler TM, Papillon J, Guillemette J, Wing SS, and Cybulsky AV. Complement modulates the function of the ubiquitin-proteasome system and endoplasmic reticulum-associated degradation in glomerular epithelial cells. BBA- Mol Cell Res 2012, 1823:1007-16.

10. Yang Y*, Duguay D*, Bedard N^{+}, Rachalski A, Baquirin G, Na CH, Fahrenkrug J, Storch F, Peng J, Wing SS+ and Cermakian N+. Regulation of behavioural circadian rhythms and clock protein PER1 by the deubiquitinating enzyme USP2. Biology Open 2012, 1: 789-801, doi: 10.1242/bio.20121990.
*Equal contributions; +Corresponding authors

11. Manku G, Wing SS and Culty M. Expression of the ubiquitin proteasome system in neonatal rat gonocytes and spermatogonia: role in gonocyte differentiation. Biol. Repro. 2012, 87: 1-18.

12. Wing SS. Deubiquitinases in skeletal muscle atrophy. Inter. J. Biochem. Cell Biol. 2013; 41: 2130-2135 (Invited review).

13. Yang Y*, Duguay D, Fahrenkrug J, Cermakian N, and Wing SS. USP2 regulates the intracellular localization of PER1 and circadian gene expression. J. Biol. Rhythms 2014, 29: 243-256

14. Stojkovic K, Wing SS, and Cermakian N. A central role for ubiquitination within a circadian clock protein modification code. Frontiers in Molecular Neuroscience Journal 2014; 7:69. doi: 10.3389/fnmol.2014.00069.

15. Bédard N+, Jammoul S*, Moore T*, Wykes L, Hallauer PL, Hastings KEM, Stretch C, Baracos V, Chevalier S, Plourde M+, Coyne E*, Wing SS. Inactivation of the USP19 Deubiquitinating Enzyme Protects Against Muscle Wasting. FASEB J 2015, 29:3889-98. doi: 10.1096/fj.15-270579. Epub 2015 Jun 5.

16. Wiles B*, Miao M*, Coyne E*, Larose L, Cybulsky AV, and Wing SS. USP19 deubiquitinating enzyme inhibits muscle cell differentiation by suppressing unfolded-protein response signaling. Mol. Biol. Cell 2015, 26: 913-923

17. Sareen-Khanna K, Papillon J, Wing SS and Cybulsky A. Role of the deubiquitinating enzyme ubiquitin-specific protease-14 in proteostasis in renal cells. Amer J. Physiol – Renal Physiol. 2016, 311: F1035-F1046

18. Coyne ES* and Wing SS. The business of deubiquitination – location, location, location. F1000Research 2016, 5 (F1000 Faculty Rev):163 (doi: 10.12688/f1000research.7220.1) (Invited review).

19. Bilodeau PA*, Coyne ES*, and Wing SS. The ubiquitin proteasome system in atrophying muscle – roles and regulation. Amer. J. Physiol. Cell Physiol. 2016, 311:C392-403. (Invited review).

20. Wing SS. Deubiquitinating enzymes in skeletal muscle atrophy – an essential role for USP19. Inter. J. Biochem. Cell Biol. 2016, 79:462–468 (Invited review).

21. Fok KL*, Bose R*, Sheng K, Chang CW, Katz-Egorov M, Culty M, Su S, Yang M, Ruan YC, Chan HC, Iavarone A, Lasorella A, Cencic R, Pelletier J, Nagano M, Xu W+, Wing SS+. Huwe1 Regulates the Establishment and Maintenance of Spermatogonia by Suppressing DNA Damage Response. Endocrinology. 2017; 158:4000-4016. doi: 10.1210/en.2017-0039

22. Bose R*, Sheng K*, Moawad AR, Manku G, O'Flaherty C, Taketo T, Culty M, Fok KL*, Wing SS. Ubiquitin Ligase Huwe1 Modulates Spermatogenesis by Regulating Spermatogonial Differentiation and Entry into Meiosis. Sci Rep. 2017 Dec 19;7(1):17759. doi: 10.1038/s41598-017-17902-0

23. Tanaka K, Xue Y, Nguyen-Yamamoto L, Morris JA, Kanazawa I, Sugimoto T, Wing SS, Richards JB, and Goltzman D. FAM210A is a novel determinant of bone and muscle structure and strength. Proc Natl Acad Sci USA 2018, 115: E3759-E3768.

24. Hall DT, Griss T, Ma JF, Omer A, Sanchez BJ, Ford RJ, Bedard N+, Wing SS, Di Marco S, Steinberg GR, Jones RG, Gallouzi I. Direct Activators of AMPK Impair Inflammation Associated Muscle Wasting. EMBO Mol Med. 2018 Jul;10(7). pii: e8307. doi: 10.15252/emmm.201708307.

25. Coyne ES*, Bedard N+, Jammoul S*, Zhang K, Wykes L, Sladek RS, Stretch C, Bathe OF, Jagoe RT, Posner BI, Wing SS. Inactivation of USP19 Deubiquitinating Enzyme Prevents Muscle Wasting by Modulating Insulin and Glucocorticoid Signaling. Endocrinology 2018, 159:2966-2977.
26. Coyne ES*, Bedard N, Gong YJ* and Wing SS. The deubiquitinating enzyme USP19 modulates adipogenesis and potentiates high fat diet induced obesity and glucose intolerance. Diabetologia, 2019, 62: 136-146. doi: 10.1007/s00125-018-4754-4

C. Research Support

Ongoing Research Support

United States Dept. of Defense Congressionally Directed Medical Research Programs Grant # PD170110 - USP19 as a Novel Therapeutic Target for Impeding Propagation and Secretion of Tau in Parkinson's Disease. Oct/18 – Sept/21. US$897,852 Total Funding. Principal Investigator: S. Wing; Co-Investigators: T. Durcan, Y. Ye

Almac Discovery – Effectiveness of USP19 inhibitor in rodents. Jan/18-Dec/18. $58,300 Total Funding. Principal Investigator: S. Wing,

Parkinson Canada Pilot Project Grant - USP19 as a novel therapeutic target for impeding cell-to-cell propagation of a-synuclein in Parkinson's disease. Oct/17 – Sept/18; $45,000 Total Funding. Principal Investigator: S. Wing, Co-investigators: T. Durcan, Y. Ye

Natural Sciences and Engineering Research Council – Discovery Grant RGPIN-2016-04054 – Function of the ubiquitin system in spermatogenesis. Apr/16 – Mar/21; $155,000 Total Funding. Principal Investigator: S. Wing