## CURRICULUM VITAE

# 1. NAME:

# Tara L. Haas, Ph.D., Full Professor (tenured)

# 2. DEGREES:

Ph.D., University of Virginia, Department of Physiology, 1995 [supervisor: Dr. Brian Duling]. B.Sc. (Human Kinetics), University of Guelph, Department of Human Biology, 1990.

# 3. EMPLOYMENT HISTORY:

2016-	Full Professor, School of Kinesiology and Health Science, York University.	
2004 -2015	Associate Professor, School of Kinesiology and Health Science, York University.	
1999-2004	Assistant Professor, School of Kinesiology and Health Science, York University.	
1995-1999	Postdoctoral Fellow, Department of Pathology, Yale University [supervisor: Dr. Jo	
	Madri].	

Additional Appointments

July 2006- Adjunct Professor, University of Guelph

# 4. ACADEMIC HONOURS:

- 2013 Canadian Society of Exercise Physiology President Lectureship
- 2010 Fellow of the Cardiovascular Section, American Physiological Society
- 2002 CIHR New Investigator Award
- 2000 Premier's Research Excellence Award
- 1999 Experimental Pathologist in Training Award, American Society for Investigative Pathology
- 1998 Research Career Enhancement Award, American Physiological Society

# 5. SCHOLARLY and PROFESSIONAL ACADEMIC ACTIVITIES:

## Society Member:

American Physiological Society, Microcirculatory Society

## Journal Editorial and Reviewing Service:

2015-2020	Reviewing Editor, Frontiers in Cardiovascular Medicine: Regenerative Cardiology
2010-2013	Associate Editor, Microcirculation
2007-2010	Member of Editorial Board, Am. J. Physiol. Heart and Circ. Phys.

## Ad hoc reviewer for the following journals:

Circulation Research; Arteriosclerosis, Thrombosis and Vascular Biology; Blood; FASEB Journal; Laboratory Investigation; Journal of Physiology (London); Journal of Cellular Physiology; American Journal of Pathology; American Journal of Physiology; Microcirculation; Experimental Physiology; Journal of Cellular Biochemistry; PloS One; Canadian Journal of Applied Physiology; Medicine and Science in Sports and Exercise.

2019	CIHR Project Grant Review, Fall 2019, Cardiovascular C
2018	CIHR Project Grant Review, Fall 2018, Cardiovascular C
2017	Heart and Stroke Foundation of Canada, Committee V
2016	Heart and Stroke Foundation of Canada, Committee V
2016	CIHR Program Grant Review, spring 2016
2015	Heart and Stroke Foundation of Canada, Committee V
2015	CIHR Reviewer, Cardiovascular B (transitional operating grant competition)
2014	CIHR Foundation Scheme Stage 1 Reviewer
2014	Heart and Stroke Foundation of Canada, Committee V

#### Committees:

Extramural Service:

2015-2018	Local Organizing Committee Member, World Congress in Microcirculation, held in
	Vancouver, 2018
2013	Program Committee/Session Chair, Microcirculatory Society Fall conference in Cape
	Cod, October 2013, in conjunction with North American Vascular Biology Organization
2011-2013	Secretary, Microcirculatory Society
2008-2009	Scientific Committee, Vascular Matrix Remodelling and Bioengineering Workshop II,
	North American Vascular Biology Organization, Whistler, BC, March 2009
2008-2011	Institute Advisory Board, Institute of Circulatory and Respiratory Health, CIHR
2007-2012	Vice-Chair; External Advisory Board, Cardiovascular Complications of Diabetes
	Initiative, ICRH
2006-2008	Organizing Committee and Session Chair, American Physiological Society Integrative
	Physiology of Exercise Conference, Hilton Head, SC, September 2008
2006-2007	Scientific Advisory Committee, Vascular Matrix Remodelling and Bioengineering
	Workshop, North American Vascular Biology Organization, Whistler, BC, March 2007
2005-2008	Council Member, Microcirculatory Society
2005-2008	Institute Advisory Board, Institute of Circulatory and Respiratory Health, CIHR
2001-2004	American Society for Investigative Pathology Program Committee Member

### Intramural:

Pan-University

- 2016-2019 Member, Senate Awards Committee
- 2014-2019 Chair, Biosafety Committee
- 2012-2013 Member, University Vivaria User Committee
- 2012-2013 Chair, Farquharson Vivaria User Committee
- 2009-2013 Member, Biosafety Committee
- 2009-2010 KAHS representative on the Users' Committee, Life Sciences Building Planning
- 2008 KAHS representative on Pan-University Subcommittee on Bachelor of Science Degree Expectations

2007-2010 Senate Tenure and Promotions Committee (2009-2010 – Co-Chair of Committee)

Faculty	
2016-2019	Faculty of Health Academic Honesty Panel Member, Chair 2018-2019
2016-2018	Faculty of Graduate Studies Awards Committee

School of Kinesiology and Health Science

Chair, Faculty Search Committee for Applied Cardiovascular Physiology
Tenure and Promotion Core Committee
Academic Executive
Graduate Program Director
Academic Executive, Member
Vision Implementation Team
Task Force on Course Work Only Masters Program, Chair
Academic Executive
Committee on Undergraduate Studies

### 6. TRAINEE SUPERVISION:

Postdoctoral Associates Supervised: 5 total

### PhD Students Supervised: 7

Master's Students Supervised: 17

<u>Undergraduate Supervisions</u>: 65

### 7. TEACHING

### A) GRADUATE COURSES:

Fall 2018	KAHS 6301: Vascular biology in health and disease
Fall 2016	KAHS 6301: Vascular biology in health and disease
Fall 2014	KAHS 6301: Vascular biology in health and disease
Winter 2013	KAHS 6360: Cardiovascular Systems in health and exercise
Fall 2011	KAHS 6301: Vascular biology in health and disease
Winter 2010	KAHS 6301: Vascular biology in health and disease
Fall 2007	KAHS 6301: Vascular biology in health and disease
Winter 2005	KAHS 6301: Vascular biology in health and disease
Winter 2003	KAHS 6301: Vascular biology in health and disease
Winter 2001	KAHS 5301: Vascular biology in health and disease
Winter 2001	KAHS 5360: Advanced Exercise Physiology II: Cardiovascular (Integrated)

B) UNDERGRADUATE TEACHING

Winter 2019 KINE 3012: Human Physiology II (co-taught with M. Connor) CD

Fall 2018	KINE 4453:	Vascular Function in Health and Disease
Winter 2018	KINE 3012:	Human Physiology II (co-taught with M. Connor)
Fall 2017	KINE 4453:	Vascular Function in Health and Disease
Winter 2017	KINE 3012:	Human Physiology II (co-taught with M. Connor) CD
		Vascular Function in Health and Disease
Winter 2016	KINE 3012:	Human Physiology II (co-taught with M. Connor)
Fall 2015	KINE 4453:	Vascular Function in Health and Disease
Winter 2015	KINE 3012:	Human Physiology II (Course director; co-taught with M. Connor)
Fall 2014	KINE 4453:	Vascular Function in Health and Disease
Winter 2013	KINE 3012:	Human Physiology II (co-taught with M. Connor)
Fall 2012	KINE 4453:	Vascular Function in Health and Disease
Winter 2012	KINE 3012:	Human Physiology II (Course director; co-taught with M. Connor)
Fall 2011	KINE 4453:	Vascular Function in Health and Disease
Winter 2011	KINE 3012:	Human Physiology II (Course director; taught full course)
Winter 2010	KINE 3012:	Human Physiology II (Course director; taught full course)
Winter 2009	KINE 3012:	Human Physiology II (Course director; taught full course)
Winter 2008	KINE 3012:	Human Physiology II (Course director; taught full course)
Summer 2006	KINE 4450:	Advanced Exercise Physiology: Cardiovascular
Winter 2006	KINE 4010:	Exercise Physiology (co-taught with D. Hood)
Fall 2005	KINE 3011:	Human Physiology I (Course director; co-taught with T. Hawke)
Summer 2005	KINE 4450:	Advanced Exercise Physiology: Cardiovascular
Winter 2005	KINE 4010:	Exercise Physiology (co-taught with E. Cafarelli)
Fall 2004	KINE 4450:	Advanced Exercise Physiology: Cardiovascular
Summer2004	KINE 4450:	Advanced Exercise Physiology: Cardiovascular
Winter 2004	KINE 3011:	Human Physiology I (Course director; co-taught with T. Hawke)
Fall 2003	KINE 3012:	Human Physiology II (Course director; taught full course)
Fall 2003	KINE 4450:	Advanced Exercise Physiology: Cardiovascular
Winter 2002	KINE 3011:	Human Physiology I (co-taught with J. McDermott)
Fall 2001	KINE 3012:	Human Physiology II (co-taught with E. Cafarelli)
		Advanced Exercise Physiology: Cardiovascular
		Advanced Exercise Physiology: Cardiovascular
Winter 2000	KINE 4450:	Advanced Exercise Physiology: Cardiovascular

8. RESEARCH FUNDING

[Sole PI unless indicated otherwise]

### A) CURRENT EXTERNAL

- 2019-2021 NSERC New Frontiers Grant \$250,000 total funding "Zero-Gravity 3D Bioprinting of Super-Soft Materials" PI; Aleksander Czekanski; coapplicants: T.L. Haas, Kristin Andrews, Roxanne Mykitiuk
- 2018-2023 NSERC Discovery Grant (renewal); \$165,000 total funding (5 years) *"Regulation of angiogenesis in skeletal muscle"*

#### B) PREVIOUS EXTERNAL

- 2017-2018 CIF (Swedish Research Council for Sport Science) 570000 SEK total funding (~\$146,000 Cdn) (2 years) *"Red blood cell-derived nitric oxide: Novel regulator of exercise adaptation"*PI – Thomas Gustafsson (Karolinska Inst, Sweden); Co-applicants: T.L. Haas; C. Perry; J. Pernow (Sweden)
- 2015-2018 Heart and Stroke Research Foundation of Canada \$266,211 total funding (3 years); *"Regulators of angiogenesis in peripheral limb ischemia"* PI – Tara Haas; Co-applicants: C. Ellis (UWO) and O. Birot
- 2015 NSERC Research Tools and Instrumentation; \$150,000 (PI: C. Perry; co-applicants: Haas, Hood, Ceddia, Riddell, Scime) "A core in vivo microCT imaging system for analyzing body composition, circulation and cardiorespiratory function in rodents"
- 2013-2018 NSERC Discovery Grant (renewal); \$165,000 total funding (5 years) "Regulation of capillary sprouting and stabilization in skeletal muscle"
- 2013-2017 CIHR Operating Grant \$390,800 total funding (4 years) (PI; 1 Co-applicant: E. Roudier) "Microvascular remodeling of the adipose and muscle tissues in diet-induced obesity: regulation by FoxO proteins"
- 2013 NSERC Research Tools and Instrumentation; \$40,741 (PI; 1 co-applicant: O. Birot) *"Multi-modal plate reader"*
- 2011 NSERC Research Tools and Instrumentation; \$140,767 (Dr. Imogen Coe, PI, myself + 5 other co-applicants) "Components for Spinning Disc Confocal Microscope"
- 2010 CIHR Operating Grant Priority Announcement; \$98,097 (1 year) "Regulation of FoxO in Ischemic Skeletal Muscle"
- 2010-2013 Heart and Stroke Foundation of Ontario; \$225,000 total funding (3 years) July start "Roles of Protease Inhibitors in Skeletal Muscle Microvascular Remodeling"
- 2009 NSERC Research Tools and Instrumentation; \$63,708 (Dr. Olivier Birot, PI, myself +2 other co-applicants) "Acquisition of a complete imaging workstation for chemiluminescent and fluorescent analysis of gels and blots
- 2008-2013 NSERC Discovery Grant (renewal); \$200,250 total funding (5 years) "*Regulation of matrix metalloproteinases in angiogenesis*"
- 2007-2009 Heart and Stroke Foundation of Ontario; \$159,500 total funding (2 years) "The regulation of angiogenic factors by shear stress"

- 2005 NIH Grant R01 HL042898-11 (Dr. Joe Unthank, PI); \$12,405 (3 years) "Vascular Adaptation in Pathophysiology"
- 2003-2008 NSERC Discovery Grant (renewal); \$200,250 total funding (5 years) "*Regulation of matrix metalloproteinases in angiogenesis*"
- 2002-2007 CIHR New Investigator Award; \$250,000 total funding (5 years) "Role of mechanotransduction in the stimulation of angiogenesis"
- 2002-2005 CIHR Operating Grant; \$305,796 total funding (3 years) "Role of mechanotransduction in the stimulation of angiogenesis"
- 2001 Ontario Innovation Trust; \$216, 877; Infrastructure "Stimulation of angiogenesis by mechanical forces"
- 2001 Canadian Foundation for Innovation New Opportunities; \$216, 877; Infrastructure *"Stimulation of angiogenesis by mechanical forces"*

2001 Premier's Research Excellence Award; \$150,000; Personnel support "Regulation of Genes controlling growth of new Blood Vessels"

- 2001 NSERC Equipment Grant; \$71,720 (PI; + 8 others) "Gel Documentation and Analysis System"
- 2000 NSERC Equipment Grant; \$31,706 "FlexCell Strain Equipment"
- 1999-2003 NSERC Research Grant (operating expenses); \$134,400 total funding (4 years) "Regulation of matrix metalloproteinases in angiogenesis"

#### C) INTERNAL RESEARCH FUNDING:

- 2018 Faculty of Health Conference Travel Funds; \$1000 (Fall)
- 2018 Faculty of Health Conference Travel Funds; \$1000 (Winter)
- 2016 Faculty of Health Minor Research Grant; \$3000
- 2015 Faculty of Health Conference Travel Funds; \$1000 (October)
- 2015 Faculty of Health Conference Travel Funds; \$1000 (March)
- 2014 Faculty of Health Minor Research Grant; \$3000
- 2013 Faculty of Health Conference Travel Funds; \$1000
- 2012 Faculty of Health Conference Travel Funds; \$1000
- 2012 Faculty of Health Minor Research Grant; \$3000
- 2010 Faculty of Health Conference Travel Funds; \$1000
- 2009 Faculty of Health Minor Research Grant; \$3000
- 2009 Faculty of Health Conference Travel Funds; \$850
- 2006 York University Bridge Funding; \$12,000

- 2006 York University Minor Research Grant; \$1,551
- 2005 York University Supplemental Research Grant; \$900
- 2002 York University Supplemental Research Grant; \$900
- 2002 York University Junior Faculty Research Grant; \$615
- 2001 York University Supplemental Research Grant; \$900
- 2001 York University Junior Faculty Research Grant; \$700
- 2000 York University Junior Faculty Research Grant; \$790
- 1999 Start-up Funds; \$90,000

#### 9. PUBLICATIONS:

- (a) Total number of papers in refereed journals (58) Total number of abstracts/conference proceedings (68)
- (b) Publication Details (prior to 1995, published under name of T.L. Little): Underlined names indicate undergraduate or graduate student trainees under my supervision. Journal impact factors refer to those published in the 2014 JCR Science Edition.

### PAPERS IN REFEREED JOURNALS:

- <u>Rudnicki M, Abdifarkosh G, Nwadozi E</u>, Ramos SV, <u>Makki A</u>, Sepa-Kishi DM, Ceddia RB, Perry CGR, Roudier E, Haas TL. Endothelial-specific FoxO1 depletion prevents obesity-related disorders by increasing vascular metabolism and growth. Elife. 2018 Dec 4;7. pii: e39780. doi: 10.7554/eLife.39780.
- 57. <u>Rudnicki M, Abdifarkosh G, Rezvan O, Nwadozi E</u>, Roudier E, Haas TL. Female mice have higher angiogenesis in perigonadal adipose tissue than males in response to high-fat diet. Front Physiol 2018;doi:https://doi.org/10.3389/fphys.2018.01452
- 56. <u>Nwadozi, E., A. Ng</u>, A. Stromberg, <u>H. Liu</u>, K. Olsson, T. Gustafsson\* and T.L. Haas\*. Leptin is a physiological regulator of skeletal muscle angiogenesis and is locally produced by PDGFRα and PDGFRβ expressing perivascular cells. Angiogenesis 2018 Aug 18. DOI: 10.1007/s10456-018-9641-6(\*shared senior author)
- 55. <u>Mandel, E.R.</u> E.C. Dunford, <u>G. Abdifarkosh</u>, P. C. Turnbull, C.G.R. Perry, M.C. Riddell and T.L. Haas. The superoxide dismutase mimetic tempol does not alleviate glucocorticoid-mediated rarefaction of rat skeletal muscle capillaries. Physiol Rep 2017 May;5(10). pii: e13243. doi: 10.14814/phy2.13243
- Dunford, E.C., E. Leclair, J. Aiken, <u>E.R. Mandel</u>, T.L. Haas, O. Birot, and M.C. Riddell. The effects of voluntary exercise and prazosin on capillary rarefaction and metabolism in streptozotocininduced diabetic male rats. J Appl Physiol (1985). 2017 Mar 1;122(3):492-502. doi: 10.1152/japplphysiol.00762.2016.
- 53. Dunford E.C., <u>E.R Mandel</u>, S. Mohajeri, T.L. Haas and M.C. Riddell. The metabolic effects of prazosin on insulin resistance in glucocorticoid-treated rats. Am J Physiol Regul Integr Comp Physiol. 2017 Jan 1;312(1):R62-R73. doi: 10.1152/ajpregu.00146.2016. IF: 3.17
- 52. <u>Mandel, E.R.</u> E.C. Dunford, <u>A. Trifonova</u>, <u>G. Abdifarkosh</u>, T. Teich, M.C. Riddell and T.L. Haas. Prazosin Can Prevent Glucocorticoid-mediated Capillary Rarefaction. PLOS One 2016 Nov 18;11(11):e0166899. doi: 10.1371/journal.pone.0166899. IF: 3.06

- 51. <u>Mandel, E.R., C. Uchida, E. Nwadozi, A. Makki</u> and T.L. Haas. TIMP1 regulates vascular remodeling in response to altered blood flow. J Cell Physiol. 2017 Apr;232(4):831-841. doi: 10.1002/jcp.25491. IF: 4.16
- 50. <u>Nwadozi, E.\*,</u> E. Roudier\*, E. Rullman, <u>S. Tharmalingam, H. Liu</u>, T. Gustafsson<sup>\$</sup>, T.L. Haas<sup>\$</sup>. Endothelial FoxO proteins impair insulin sensitivity and restrain muscle angiogenesis in response to high fat diet. \*/<sup>\$</sup> Shared first/senior authorship, respectively. FASEB J. 2016 Sep;30(9):3039-52. doi: 10.1096/fj.201600245R. IF: 5.04
- 49. Aiken, J., E. Roudier, J. Ciccone, G. Drouin, A. Stromberg, J.Vojnovic, I. M. Olfert, T.L. Haas, T. Gustafsson, G. Grenier, O. Birot. Phosphorylation of Murine Double Minute-2 on Ser166 is downstream of VEGF-A in exercised skeletal muscle and regulates primary endothelial cells migration and FoxO gene expression. FASEB J 2016 Mar;30(3):1120-34; doi: 10.1096/fj.15-276964. IF:5.04
- Haas, T.L. and <u>E. Nwadozi</u>. Regulation of Capillary Growth in Skeletal Muscle in Exercise and Disease. (*Invited review*) Applied Physiology, Nutrition and Metabolism. 2015 Dec;40(12):1221-32. doi: 10.1139/apnm-2015-0336; *Based on CSEP President's award lecture* 2013. Times cited: 7; IF: 2.68
- 47. Beaudry, J., E. Dunford, E. Leclair, <u>E. Mandel</u>, A. Peckett, T.L. Haas and M.C. Riddell. Voluntary exercise improves metabolic profile in high-fat fed glucocorticoid treated rats. J. Appl. Physiol. 2015;118(11):1331-43; doi: 10.1152/japplphysiol.00467.2014 My contribution 5% -my graduate student, E. Mandel, conducted some histological analyses for the study. I reviewed her data, and the completed manuscript draft. Times cited: 7; IF: 3.06
- 46. Uchida, C., E. Nwadozi, A. Hasanee, S. Olenich, I.M. Olfert and T.L. Haas. Muscle-derived vascular endothelial growth factor regulates microvascular remodelling in response to increased shear stress in mice. Acta Physiol (Oxf), 2015 214(3):349-60. doi: 10.1111/apha.12463 Times cited: 23; IF:4.38 Editorial written on this paper and it was short-listed for Acta Physiologica award 2018
- 45. <u>Slopack, D., E. Roudier, S.T.K. Liu, E. Nwadozi</u>, O. Birot, T.L. Haas. Forkhead BoxO transcription factors restrain exercise-induced angiogenesis. J Physiol. 2014, 592(Pt 18):4069-82; doi: 10.1113/jphysiol.2014.275867. *Times cited: 18;* IF:5.04
- 44. Milkiewicz, M., A. Kempinska-Podhorodecka, T. Haas, D.P. Bogdanos, E. Elias, P. Milkiewicz, J. Kopycinska. Ursodeoxycholic acid influences the expression of p27kip1 but not FoxO1 in patients with non-cirrhotic Primary Biliary Cirrhosis. J Immunol Res 2014; 2014:921285. doi:10.1155/2014/921285. My contribution 5% I provided samples that were analyzed for this study and I read and edited the manuscript.
- 43. <u>Uchida, C</u>., T.L. Haas. Endothelial TIMP1 is upregulated by shear stress via Sp1 and the TGFβ1 signaling pathways. Biochem. Cell Biol. 2014; 92:1-7. *Times cited:* 5; **IF:2.35**
- 42. <u>Gorman, J.L., S.T.K. Liu, D. Slopack, K. Shariati, A. Hasanee</u>, S. Olenich, I.M. Olfert and T.L. Haas. Angiotensin II evokes angiogenic signals within skeletal muscle through co-ordinated effects on skeletal myocytes and endothelial cells. PLoS One. 2014 Jan 9;9(1):e85537. doi: 10.1371/journal.pone.0085537 *Times cited: 21;* IF:3.23
- 41. Haas, T.L. Shaping and Remodeling of the Fetoplacental Circulation: Aspects of Health and Disease. Microcirculation 2014 Jan;21(1):1-3. doi: 10.1111/micc.12084 IF:2.56
- 40. Roudier, E., J. Aiken, <u>D. Slopack</u>, F. Gouzi, J. Mercier, T. L. Haas, T. Gustafsson, M. Hayot, O. Birot. Novel Perspective: Exercise training stimulus triggers the expression of the oncoprotein Human Double Minute-2 in human skeletal muscle. Physiol.Rep. 2013 1:e00028; DOI: 10.1002/phy2.28. *My contribution 20% -my graduate student*, *D. Slopack*, *conducted analyses*

for this paper. I was involved heavily in the analysis and interpretation of data and drafting of the final manuscript.

- 39. <u>Mandel, E., C. Uchida</u>, T.L. Haas. Chpt. 16. Regulation of proteolysis in vascular remodeling. In "Roles of Proteolysis in Cellular Dysfunction". S. Chakraborti and N. Dhalla (Eds). Advances in Biochemistry in Health and Disease 8, DOI 10.1007/978-1-4614-9099-9\_16, © Springer Science+Business Media New York 2014
- Roudier, E., M. Milkiewicz, O. Birot, <u>D. Slopack</u>, A. Montelius, T. Gustafsson, J.H. Paik, R.A. DePinho, G.P. Casale, I.I. Pipinos, T.L. Haas. Endothelial FoxO1 is an intrinsic regulator of thrombospondin1 expression that restrains angiogenesis in ischemic muscle. Angiogenesis 2013 16(4):759-772, DOI: 10.1007/s10456-013-9353-x *Times cited:* 25; IF:4.88
- 37. Kopycinska, J., P. Milkiewicz, A. Kempińska-Podhorecka, T.L. Haas, E. Elias, R.A. DePinho, J. Paik, M. Milkiewicz. Activation of FoxO3a/ Bim axis in patients with Primary Biliary Cirrhosis. Liver Int. 2013 Feb;33(2):231-8. doi: 10.1111/liv.12030.
  IF:4.85 My contribution 10% Dr. Milkiewicz conducted transgenic mouse experiments in
  - **IF:4.85** My contribution 10% Dr. Milkiewicz conducted transgenic mouse experiments in my lab and used these samples for her study. I also read and edited the manuscript.
- Shikatani, E.A., A. Trifonova, E.R. Mandel, S.T.K. Liu, E. Roudier, <u>A. Krylova</u>, A. Szigiato, J. Beaudry, M.C. Riddell<sup>1</sup> and T.L. Haas. Inhibition of proliferation, migration and proteolysis contribute to corticosterone-mediated inhibition of angiogenesis. Plos One 2012 Oct, 7: e46625. doi:10.1371/journal.pone.0046625 *Times cited:* 26; IF:3.23
- 35. Haas, T.L., P.G. Lloyd, H-T. Yang and R.L. Terjung. Exercise training and peripheral artery disease. Compr Physiol 2012 Oct, 2: 2933-3017. doi: 10.1002/cphy.c110065 Times cited: 49; IF:5.74 My contribution – 30% - I wrote approximately 1/3 of this review.
- 34. Kobus, K, J. Kopycińska, A. Kozlowska-Wiechowska, E. Urasinska, A. Kempinska-Podhorodecka, T.L. Haas, P. Milkiewicz, M. Milkiewicz. Angiogenesis within the duodenum of patients with cirrhosis is modulated by mechanosensitive Kruppel-like factor 2 and microRNA-126. Liver Int. 2012 32(8):1222-1232. doi: 10.1111/j.1478-3231.2012.02791 *Times cited: 11*;

**IF:4.85** My contribution – 10% - I hosted Dr. Milkiewicz and K. Kobus in my lab and provided samples that were analyzed for this study and read/edited the manuscript.

- 33. <u>Gorman, J.L., E. Ispanovic</u> and T.L. Haas. Regulation of Matrix Metalloproteinase Expression. Drug Discovery Today: Disease Models 2011 8(1):5-11 (DOI: 10.1016/j.ddmod.2011.06.001).
- 32. Unthank, J.L., T.L. Haas and S.J. Millar. Impact of shear level and cardiovascular risk factors on bioavailable nitric oxide and outward remodeling of mesenteric arteries. pp. 89-119 In "Arteriogenesis Molecular regulation, pathophysiology and therapeutics I", E. Deindl and W. Schaper, Editors, Shaker Verlag Aachen, 2011. My contribution 10% I provided data and wrote a segment of this review, as well as edited the entire review paper.
- Milkiewicz, M., E. Roudier, J.L. Doyle, A. Trifonova, O. Birot, T.L. Haas. Identification of a mechanism underlying regulation of the anti-angiogenic forkhead transcription factor FoxO1 in cultured endothelial cells and ischemic muscle. Am. J Pathol. 2011 178(2):935-944. *Times cited:* 31; IF:5.07
- 30. <u>Doyle, J.L</u>. and T.L. Haas. The angiogenic response to skeletal muscle overload is not dependent on mast cell activation. Microcirculation 2010 Oct;17(7):548-56. **IF:2.56**
- 29. <u>Gee, E.</u>, M. Milkiewicz and T.L. Haas. p38 MAPK is Activated by Vascular endothelial growth factor receptor 2 and is essential for shear stress-induced angiogenesis. J Cell Physiol. 2010 Jan;222(1):120-6. *Times cited: 50*; **IF:3.84**
- <u>Doyle, J.L.</u> and T.L. Haas. Differential role of beta-catenin in VEGF and histamine-induced MMP-2 production in microvascular endothelial cells. J. Cell Biochem. 107(2):272-83, 2009. *Times*

*cited: 31*; **IF:3.26** 

- 27. Uchida, C. and T.L. Haas. Evolving Strategies in Manipulating VEGF/VEGFR Signaling for the Promotion of Angiogenesis in Ischemic Muscle. Curr. Pharm. Des. 15(4):411-421, 2009. *Times cited:* 25; **IF:3.45**
- 26. Rullman, E., J. Norrbom, A. Strömberg, D. Wågsäter, H. Rundqvist, T.L. Haas and T. Gustafsson. Endurance exercise activates matrix metalloproteinases in human skeletal muscle. J Appl Physiol 106(3):804-12, 2009. Times cited: 67; IF:3.48 My contribution – 10% - I hosted Dr. Rullman in my lab to learn laser capture microdissection and read/edited the manuscript.
- 25. <u>Ispanovic, E., D. Serio</u> and T.L. Haas. Cdc42 and RhoA have opposing roles in regulating Membrane Type 1-Matrix Metalloproteinase localization and Matrix Metalloproteinase-2 activation. Am. J. Physiol. Cell Physiol., 295(3):C600-10, 2008. *Times cited: 41*; **IF:3.78**
- Milkiewicz, M., <u>C. Uchida, E. Gee, T. Fudalewski</u> and T.L. Haas. Shear stress-induced Ets-1 modulates protease inhibitor expression in microvascular endothelial cells. J Cell Physiol, 217(2):502-10, 2008. *Times cited: 25;* IF:3.84
- 23. Uchida, C., E. Gee, E. Ispanovic and T.L. Haas. JNK as a positive regulator of angiogenic potential in endothelial cells. Cell Biology International 32:769-776, 2008. *Times cited: 42;* IF:1.93
- 22. Milkiewicz, M., J.L. Doyle, T. Fudalewski, E. Ispanovic, M. Aghasi and T.L. Haas. HIF-1α and HIF-2α play a central role in stretch-induced but not shear stress-induced angiogenesis in rat skeletal muscle. J Physiol (London) 583:753-766, 2007. *Times cited: 66*; IF:5.04
- Haas, T.L., J.L. Doyle, M.R. Distasi, L.E. Norton, K.M. Sheridan and J.L. Unthank. Involvement of MMPs in the outward remodeling of collateral mesenteric arteries. Am J Physiol (Heart and Circ Physiol) 293(4):H2429-H2437, 2007. *Times cited: 34;* IF:3.84 My contribution – 70% - I, together with 1 grad student, conducted analyses for this study and I wrote the manuscript.
- Milkiewicz, M., <u>F. Mohammadzadeh, E. Ispanovic, E. Gee</u> and T.L. Haas. Static Strain stimulates expression of matrix metalloproteinase-2 and VEGF in microvascular endothelium via JNK and ERK dependent pathways. J. Cellular Biochem 100:750-61, 2007. Times cited: 43; IF:3.26
- <u>19. Ispanovic, E</u>. and T.L. Haas. JNK and PI3K differentially regulate MMP-2 and MT1-MMP mRNA and protein in response to actin cytoskeleton reorganization in endothelial cells. Am. J. Physiol. Cell Physiol, 291:C579-88, 2006. Times cited: 74; **IF:3.78**
- Milkiewicz, M., <u>C. Kelland, S. Colgan</u> and T. L. Haas. Nitric oxide and p38 MAP Kinase mediate shear stress-dependent inhibition of MMP-2 production in microvascular endothelial cells. J. Cell Physiol. 208:229-37, 2006. *Times cited:* 42; IF:3.84
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### PAPERS IN REVIEW

### PAPERS IN NON-REFEREED JOURNALS/BOOKS

Milkiewicz, M. and T. L. Haas. Regulation of matrix metalloproteinases in vascular remodeling. Recent Research Developments in Physiology, 2:547-565, 2004.

ABSTRACTS (non-refereed); presented at national or international conferences

Rudnicki M, Abdifarkosh G, Nwadozi E, Ramos SV, Makki A, Sepa-Kishi DM, Ceddia RB, Perry CGR,

Roudier E, Haas TL. Endothelial FoxO1 deficiency prevents obesity-related disorders through increased endothelial glycolysis and vascular growth. Metabolism in Cancer and Stromal Cells (2nd edition), Leuven, Belgium, Nov. 2018. *Abstract was selected for an oral presentation*.

- <u>Nwadozi, E, A. Ng</u>, A. Strömberg, K. Olsson, T. Gustafsson, T.L. Haas. Nutrient overload stimulates leptin production by skeletal muscle pericytes by provoking commitment to an adipogenic lineage. World Congress in Microcirculation, Vancouver, BC, Sept. 2018. *Invited for oral presentation*.
- De Ciantis, M., E. Nwadozi, V. Mehra, S. Milkovich, C.G. Ellis, T.L. Haas. High fat diet promotes perfusion recovery and a pro-regenerative phenotype of the ischemic skeletal muscle. World Congress in Microcirculation, Vancouver, BC, Sept. 2018.
- <u>Rezvan, O., M. Rudnicki</u>, T.L. Haas. Different Endothelial Cell Capacity to Respond to Angiogenic Stimuli in Male and Female Mice. World Congress in Microcirculation, Vancouver, BC, Sept. 2018. *Invited for oral presentation*.
- <u>Rudnicki, M., G. Abdifarkosh</u>, E. Roudier, <u>E. Nwadozi</u>, T.L.Haas. FoxO1 deficiency in endothelial cells promotes vascular remodeling and prevents metabolic complications during obesity. ESM/EVBO, Geneva, Switzerland, June 2017. *Received travel award (CIHR and EVBO)*
- Rudnicki, M., G. Abdifarkosh, E. Roudier, <u>E. Nwadozi</u>, T.L.Haas. Impact of endothelial-specific foxo1 depletion on the development of metabolic dysfunction in obesity. Experimental Biology, Chicago IL, April 2017
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- Mandel, E.R. and T.L Haas. The role of TIMP-1 on vascular remodeling in response to hind-limb ischemia. NAVBO/MCS fall conference, Cape Cod, 2013
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- Roudier, E., K. Alim, V. Vu, O. Birot, G. Sweeney and T.L. Haas. Role of FoxO within the microvasculature of the skeletal muscle in diet-induced obesity. Experimental Biology, April 2013.
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- <u>Uchida, C., E. Nwadozi, A. Hasanee, E. Gee</u>, S. Olenich, I.M. Olfert, T.L. Haas. Myocyte-derived VEGF regulates vascular adaptations to increased blood flow in skeletal muscle. Integrative Biology of Exercise conference, Colorado, Oct. 2012
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- Ispanovic, I. and T.L. Haas. Experimental Biology, April 2007.
- Ispanovic, I. and T.L. Haas. Vascular Matrix and Bioengineering Workshop, Whistler, March 2007.
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- Ispanovic, E. and T.L. Haas. Rac and cdc42 regulate early events in angiogenesis. Exp. Clin. Cardiol. 10:44, 2005.
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- Haas, T.L., K. Sheridan, G. Dhanota, L. Tsotsos, J.L. Unthank. Rat mesenteric collateral artery remodeling in response to flow includes production and activation of matrix metalloproteinase-2. Cardiovasc. Path. 13:S164, 2004.
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- S. Egginton, A-L. Zhou, *T.L. Haas*, M.D. Brown, O. Hudlická. Sprouting and non-sprouting angiogenesis in skeletal muscles: role of mechanical factors. World Congress on Microcirculation, August 2001.
- Goldstein, J., M.Milkiewicz, F. Hansen-Smith, M.D. Brown, O. Hudlicka, *T.L. Haas*. Shear stress and stretch induction of angiogenic mediators in rat skeletal muscle. Experimental Biology, April 2001.
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- *Haas, T.L.,* D.Stitelman, S.J. Davis, S.S. Apte, J.A. Madri. Transcriptional upregulation of membrane type 1 matrix metalloproteinase (MT1-MMP) in endothelium via the transcription factor Egr1. Experimental Biology, April, 1999.
- Haas, T.L., S.J. Davis, D.Stitelman, D.H. Lovett, S.S. Apte, J.A. Madri. Regulation of MMP-2 and MT1-MMP mRNA in rat microvascular endothelium *in vitro*. Experimental Biology, April, 1998.
- Haas, T.L., S.J. Davis and J.A. Madri. Upregulation of metalloproteases MMP-2 and MT1-MMP in rat microvascular endothelial cells grown in three-dimensional collagen gels. Vascular Biology, April, 1997.
- *Haas, T.L.*, C.S. Hahn and B.R. Duling. Increased stability of gap junction channel-forming Cx43 in cultured rat aortic vascular smooth muscle and endothelial cells. Experimental Biology, April, 1996.

#### 10. INVITED PRESENTATIONS:

- 2019: Invited speaker; American Heart Association, Philadelphia, USA (Nov); "Endothelial FoxO in Angiogenesis in Hyperlipidemic Mouse"
- 2018: Invited Speaker; Muscle Health Awareness Day, York University, Toronto (May) "Rethinking capillaries: Key determinants of metabolic health?"
- 2017: Invited Speaker; 12th International Symposium on Resistance Arteries, Manchester, UK (September) *"Modulation of angiogenesis by anti-angiogenic factors"*
- 2017: Invited Faculty; Saltin International Graduate Course in Clinical and Exercise Physiology (Ottawa) (September): "Mechanisms of Angiogenesis"
- 2017: Seminar speaker, Dept. Physiology and Pharmacology, U Western Ontario, London (host: Don Welsh) (January): "Sabotaging capillary growth"
- 2016: Invited Faculty; Saltin International Graduate Course in Clinical and Exercise Physiology (Copenhagen) (September: "Mechanisms of Angiogenesis"
- 2016: Invited symposium speaker, Experimental Biology (April): "Shear stress modulation of crosstalk

between endothelial cells and skeletal myocytes"

- 2015: Invited speaker; "New approaches to management cardiovascular health" Symposium at York University (Nov). "Defining molecular markers of angiogenesis in the ischemic muscle of PAD patients"
- 2015: Invited Faculty; Saltin International Graduate Course in Clinical and Exercise Physiology (Toronto) (October): *"Exercise and Angiogenesis"*
- 2015: Invited Speaker, Clinical Physiology, Karolinska Institutet Hospital; Stockholm, SE (July) "Role of FoxO1 in the regulation of skeletal muscle angiogenesis"
- 2015: Seminar speaker, Cell Biology Program, Hospital for Sick Children, Toronto (host: Amira Klip) (January): "FoxOl regulation of angiogenesis"
- 2013: CSEP President's Lecture (APNM Lecture Award), Toronto (October) "Controlling Capillary Growth in Skeletal Muscle"
- 2013: Invited Speaker International Union of Physiologists Society (IUPS) Birmingham UK (July) (declined due to scheduling conflict)
- 2012: Invited Speaker, Clinical Physiology, Karolinska Institutet Hospital, Stockholm, SE (Feb) "Cellular Interactions within the Skeletal Muscle Microenvironment"
- 2011: Featured Topic, Experimental Biology, Washington D.C. (April) "Conditional deletion of FoxO1/3/4 improves recovery from hindlimb ischemia"
- 2010: Invited Speaker, World Congress on Microcirculation, Paris, France (Sept) "Physiological regulation of MMPs in endothelial cells"
- 2010: Invited Speaker, ACSM Integrative Physiology of Exercise Conference, Miami, FL (Sept) "Modulation of exercise-induced angiogenesis"
- 2010: Invited Speaker, European Society of Cardiology Congress, Stockholm, Sweden (Aug) "Contribution of stretch and stress to angiogenesis"
- 2010: Invited Speaker, St. Michael's Hospital Cardiology Research Rounds, Toronto (May) "Supply and Demand: Remodeling of Capillary Networks in Skeletal Muscle"
- 2009: Speaker; Muscle Health Research Centre Colloquium (York U) "Supply Vs. Demand: Regulation of Capillary Networks in Skeletal Muscle"
- 2009: 8<sup>th</sup> Annual USADA Symposium on Anti-Doping Science, Vancouver, BC "Molecular control of capillary growth in skeletal muscle"
- 2008: Symposium Chair and Speaker, APS Integrative Biology of Exercise Conference, Hilton Head NC "At the Interface Between Blood and Myofibers: Divergent Biomechanical Signal Pathways in Endothelial Cells"
- 2008: Workshop Leader, CIHR Heart and Circulatory Institute Young Investigators Forum, Montreal "Achieving Work-Life Balance"
- 2008: Invited Speaker, CIHR Heart and Circulatory Institute Young Investigators Forum, Montreal
- 2008: Speaker, Southlake Regional Health Centre-York University Partnership, Newmarket, Ontario "Strategies to stimulate capillary growth in skeletal muscle"
- 2007: Samuel Lunenfeld Research Institute Seminar Series at Mount Sinai Hospital, Toronto "Shear stress regulation of matrix metalloproteinases and their inhibitors: a role in non-invasive angiogenesis?"
- 2007: McLaughlin Symposium, University of Texas Medical Branch, Galveston TX "Shear stress induced signaling in endothelium: Regulation of matrix metalloproteinases and protease inhibitors"
- 2007: ICRH Town Hall, Toronto, ON "Strategies to stimulate capillary growth in skeletal muscle"
- 2007: Vascular Matrix Biology and Bioengineering, Whistler, BC
- 2005: Speaker, Lawson Research Institute, London, ON "Angiogenesis in Response to Mechanical Factors"
- 2004: Speaker, APS Integrative Physiology Conference, Austin Texas "Microvascular Remodeling in Response to Mechanical Factors"

- 2004: Speaker, International Society for Heart Research American Section Conference, Cancun Mexico
- 2004: Speaker, CIHR Heart and Circulatory Institute Young Investigators Forum, Winnipeg Manitoba
- 2002: Speaker, University of Toronto, Dept. Laboratory Medicine and Pathobiology
- 2002: Speaker, Experimental Biology, New Orleans (ASIP mini-symposium)
- 2002: Speaker, ACSM Conference, Indianapolis, IA (declined due to scheduling conflict)
- 2001: Speaker, Research Day, University of Guelph Dept. Human Biology

### 11. MEDIA RELATIONS:

- 2018: Related to Rudnicki et al (2018) eLIFE paper:
  \*YFile (York University's Daily News): York-led research results in breakthrough discovery for obesity-related health issues. <u>https://yfile.news.yorku.ca/2018/12/04/york-led-research-results-in-breakthrough-discovery-for-obesity-related-health-issues/</u>
  \*Eurekalert: Promising research shows blood vessel growth key to healthy fat tissue <a href="https://www.eurekalert.org/pub\_releases/2018-12/yu-prs120418.php">https://www.eurekalert.org/pub\_releases/2018-12/yu-prs120418.php</a>
- 2018: Related to Rudnicki et al (2018) Frontiers in Physiology paper: \***YFile** (York University's Daily News): *York U study on male and female fat tissue highlights differences in health implications* (related to Front Physiol 2018 paper) <u>https://yfile.news.yorku.ca/2018/10/23/york-u-study-on-male-and-female-fat-tissue-highlights-<u>differences-in-health-implications/</u></u>

\***Medical Express:** Study sheds light on differences between male and female fat tissue and health. <u>https://medicalxpress.com/news/2018-10-differences-male-female-fat-tissue.html</u> \***Eurekalert:** <u>https://www.eurekalert.org/pub\_releases/2018-10/yu-ss1102318.php</u>

- 2012: Interview with York University Radio (CHRY): "Pump you up" Topic: Body adaptations with exercise training
- 2012: YFile (York University's Daily News): Chronic high-levels of stress hormone could lead to heart problems (related to 2012 PlosOne publication)
- 2012: Excerpt within Fall 2012 York U magazine "Fighting Diabetes", related to 2011 Am. J. Pathol. paper
- 2009: YFile: York U researchers identify trigger for blood vessel growth: *Findings may aid diabetic patients* (related to 2010 J Cell Physiol. Paper)

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