

PUBLICATIONS

- **Shahzad, U.**, Nikolopoulos, M., Li, C., Johnston, M., Want, J.J., Sabha, N., Varn, F. S., Riemenschneider, A., Krumholtz, S., Krishnamurthy, P.M., Smith, C.A., Karamchandani, J., Watts, J.K., Verhaak, R.G.W., Gallo, M., Rutka, J.T., and Das, S. (2025). CASCADES, a novel SOX2 super-enhancer-associated long noncoding RNA, regulates cancer stem cell specification and differentiation in glioblastoma. *Molecular Oncology*, 19(3): 764-784.
- **Shahzad, U.**, Taccone, M., Kumar, S., Okura, H., Krumholtz, S., Ishida, J., Mine, C., Gouveia, K., Edgar, J., Smith, C.A., Hayes, M., Huang, X., Derry, W.B., Taylor, M.D., & Rutka, J.T. (2021). Modeling human brain tumours in non-murine species: from proof of principle to novel therapeutic targets. *Neuro-Oncology*, 23(5), 718-731.
- **Shahzad, U.**, Krumholtz, S., Rutka, J.T., & Das, S. (2021). Noncoding RNAs in glioblastoma: Emerging biological concepts and potential therapeutic implications. *Cancers*, 13(7), 1555.
- Sachdeva, R., Wu, Megan, Johnson, K., Hyunsoo, K., Celebre, A., **Shahzad, U.**, Graham, M.S., Kessler, J.A., Chuang, J.H., Karamchandani, J., Bredel, M., Verhaak, R., & Das, S. (2019). BMP signaling mediates glioma stem cell quiescence and confers treatment resistance in glioblastoma. *Scientific Reports*, 9(1), 14569. DOI: 10.1038/s41598-019-51270-1
- Okura, H., Golbourn, B.J., **Shahzad, U.**, Agnihotri, S., Sabha, N., Figueiredo, C., Krieger, J.R., Chalil, A., Landon-Brace, N., Riemenschneider, A., Arai, H., Smith, C.A., Xu, S., Kaluz, S., Marcus, A.I., Van Meir, E.G., & Rutka, J.T. (2016). A role for activated Cdc42 in glioblastoma multiforme invasion. *Oncotarget*, 7(35), 56958-56975.
- Paul, J., Nantha-Aree, M., Buckley, N., **Shahzad, U.**, Cheng, J., Thabane, L., Tidy, A., DeBeer, J., Winemaker, M., Wismer, D., Punthakee, D., & Avram, V. (2015). Randomized controlled trial of gabapentin as an adjunct to perioperative analgesia in total hip arthroplasty patients. *Canadian Journal of Anesthesia*, 62(5), 476-484.
- **Shahzad, U.**, Li, G., Zhang, Y., Li, R.K., Rao, V., & Yau, T.M. (2015). Transmyocardial revascularization enhances mesenchymal stem cell engraftment in infarcted hearts through SCF—c-kit and SDF-1—CXCR4 signaling axes. (2015). *Stem Cell Reviews and Reports*, 11(2), 332-346.
- Zhang, S., Paul, J., Nantha-Aree, M., Buckley, N., **Shahzad, U.**, Cheng, J., DeBeer, J., Winemaker, M., Wismer, D., Punthakee, D., Avram, V., & Thabane, L. (2015). Reanalysis of morphine consumption from two randomized control trials of gabapentin using longitudinal statistical methods. *Journal of Pain Research*, 9(8), 79-85.
- Noiseux, N., Marquis-Gravel, G., Mansour, S., **Shahzad, U.**, Yau, T.M. (2014). The current state of stem cell therapeutics: Canadian approaches in the international context. *Canadian Journal of Cardiology*, 30(11), 1361–1369.
- Zhang, S., Paul, J., Nantha-Aree, M., Buckley, N., **Shahzad, U.**, Cheng, J., DeBeer, J., Winemaker, M., Wismer, D., Punthakee, D., Avram, V., & Thabane, L. (2014). Empirical comparison of four baseline covariate adjustment methods in analysis of continuous outcomes in randomized controlled trials. *Clinical Epidemiology*, 6, 227-235.
- **Shahzad, U.**, Li, G., & Zhang, Y., & Yau, T.M. (2012). Transmyocardial revascularization induces mesenchymal stem cell engraftment in infarcted hearts. *Annals of Thoracic Surgery*, 94(2):556-62.
- **Shahzad, U.** & Yau, T.M. (2012). Stem cell therapy in cardiac regeneration. *Institute of Medical Science Magazine*, 17-18.
- Graham, N., Haines, T., Goldsmith, C., **Shahzad, U.**, Talovikova, E., & Gross, A. Reliability of three assessment tools used to evaluate randomized controlled trials for treatment of neck pain. (2012). *Spine*, 37(6), 515-522.

PUBLISHED ABSTRACTS

- Wang, J.J., Wu, M., Li, C., **Shahzad, U.**, Karamchandani, J., Marsden, P., & Das, S. (2016). A lincRNA orchestrates glioma stem cell-mediated angiogenesis in glioblastoma. [Abstract]. In: Proceedings of the AACR Special Conference on Noncoding RNAs and Cancer: Mechanisms to Medicines; 2015 Dec 4-7; Boston, MA. Philadelphia (PA): AACR; *Cancer Res* 2016;76(6 Suppl):Abstract nr A17.
- Svergun, N., **Shahzad, U.**, Figueiredo, C., Agnihotri, S., Golbourn, B., Luck, A., Smith, C.A., Rutka, J. (2016). The role of profilin I and II in glioma progression. *European Journal of Cancer*, 61(1): S47.
- **Shahzad, U.**, Wang, J.J., Li, C., Wu, M., Rutka, J.T., & Das, S.D. (2015). Long noncoding RNA regulation of the cancer stem cell phenotype in glioblastoma multiforme. [Abstract.] *Neuro-Oncology* 17(Suppl 5): v211.
- **Shahzad, U.**, Wang, J.J., Li, C., Wu, M., Rutka, J.T., & Das, S.D. (2015). Long noncoding RNA regulation of the cancer stem cell phenotype in glioblastoma multiforme. [Abstract.] Canadian Student Health Research Forum, June 2015. Available at: http://umanitoba.ca/outreach/conferences/research_days/media/Abstract_Book.pdf

- **Shahzad, U., Li, G., & Yau, T.M.** (2013). Transmyocardial revascularization enhances mesenchymal stem cell engraftment in infarcted hearts through SCF–c-kit and SDF-1–CXCR4 signaling axes. *The Journal of Heart and Lung Transplantation*, 32(4), S68.
- **Shahzad, U., Li, G., & Yau, T.M.** (2012). The role of stem cell signaling axes in transmyocardial revascularization-enhanced mesenchymal stem cell engraftment in infarcted hearts. [Abstract.] *Canadian Journal of Cardiology*, 28(6), S207.
- **Shahzad, U., Li, G., Zhang, Y., & Yau, T.M.** (2011). A novel mechanism of action of transmyocardial revascularization: Induction of mesenchymal stem cell transmigration and engraftment via upregulation of stem cell factor and stromal derived factor-1. [Abstract.] *Canadian Journal of Cardiology*, 27(5), S318-S319.
- **Yau, T.M., Shahzad, U., Li, G., & Zhang, Y.** (2011). A novel mechanism of action of transmyocardial revascularization: Induction of mesenchymal stem cell transmigration and engraftment via upregulation of stem cell factor and stromal derived factor-1. [Abstract.] American Association for Thoracic Surgery Annual Meeting, May 2011. Available at: <http://www.aats.org/annualmeeting/Abstracts/2011/F6.html>
- **Nantha-Aree, M., Paul, J., Buckley, N., Shahzad, U., Cheng, J., Thabane, L., & Tidy, A.** (2011). Gabapentin does not improve analgesia for total hip arthroplasty. [Abstract.] Canadian Anesthesiologists' Society Annual Meeting, June 2011. Available at: http://www.cas.ca/English/Page/Files/478_1065760.pdf
- **Paul, J., Nantha-Aree, M., Buckley, N., Cheng, J., Thabane, L., Tidy, A., & Shahzad, U.** (2011). Gabapentin does not improve pain outcomes for total knee arthroplasty. [Abstract.] Canadian Anesthesiologists' Society Annual Meeting, June 2011. Available at: http://www.cas.ca/English/Page/Files/478_1067347.pdf
- **Shahzad, U., Talovikova, E., Alshurafa, M., & Haines, T.** (2010). Documentation of occupational exposure history in medical charts of primary health care patients with asthma, hand or arm dermatitis, or carpal tunnel syndrome. *Chronic Diseases in Canada*, 30(2). [Abstract.] Available at: http://www.phac-aspc.gc.ca/publicat/cdic-mcc/30-2/cseb_01-eng.php#ar0104

MANUSCRIPTS IN PREPARATION

- **Shahzad, U., Ishida, J., Weikmann, N., Okura, H., Subramanian, A., Smith, C.A., Derry, W.B., & Rutka, J.T.** (2020). Whole genome RNAi screen in KRAS;PTEN mutant *C. Elegans* to identify novel targets in glioblastoma multiforme. [In Preparation]

INVITED TALKS

- “Hot Research Topics in IMS.” *MSC1010/MSC1011Y Graduate Course*, Banting Institute, University of Toronto, November 21, 2010, Toronto, Ontario.
- “A novel long noncoding RNA CASCADES maintains the cancer stem cell population in glioblastoma multiforme.” *Translational Research Workshop, Department of Surgery*, Banting Institute, University of Toronto, April 29, 2019, Toronto, Ontario.

CONFERENCE PRESENTATIONS

- **Shahzad, U., Li, C., Wang, J.J., Johnston, M., Riemenschneider, A.N., Smith, C.A., Karamchandani, J., Gallo, M., Rutka, J.T., & Das, S.D.** (2019). “A novel long noncoding RNA CASCADES maintains the cancer stem cell population in glioblastoma multiforme.” *Toronto RNA Day*, Peter Gilgan Center for Research and Learning, July 30, Toronto, Ontario.
- **Shahzad, U., Li, C., Wang, J.J., Johnston, M., Riemenschneider, A.N., Smith, C.A., Karamchandani, J., Gallo, M., Rutka, J.T., & Das, S.D.** (2019). “A novel long noncoding RNA CASCADES maintains the cancer stem cell population in glioblastoma multiforme.” *RNA Society Annual Meeting*, ICE Krakow Congress Center, June 13, Krakow, Poland.
- **Shahzad, U., Li, C., Wang, J.J., Johnston, M., Riemenschneider, A.N., Smith, C.A., Karamchandani, J., Gallo, M., Rutka, J.T., & Das, S.D.** (2019). “A novel long noncoding RNA CASCADES maintains the cancer stem cell population in glioblastoma multiforme.” *Institute of Medical Science Scientific Day*, Chestnut Conference Center, May 14, Toronto, Ontario.
- **Shahzad, U., Li, C., Wang, J.J., Johnston, M., Riemenschneider, A.N., Smith, C.A., Karamchandani, J., Gallo, M., Rutka, J.T., & Das, S.D.** (2019). “A novel long noncoding RNA CASCADES maintains the cancer stem cell population in glioblastoma multiforme.” *Gallie Day*, Peter Gilgan Center for Research and Learning, May 3, Toronto, Ontario.
- **Shahzad, U., Li, C., Wang, J.J., Johnston, M., Riemenschneider, A.N., Smith, C.A., Karamchandani, J., Gallo, M., Rutka, J.T., & Das, S.D.** (2019). “A novel long noncoding RNA CASCADES maintains the cancer stem cell population in glioblastoma multiforme.” *Cell Biology Retreat*, Old Mill Inn, April 25, Toronto, Ontario.
- **Shahzad, U., Li, C., Wang, J.J., Wu, M., Rutka, J.T., & Das, S.D.** (2019). “A novel long noncoding RNA lincSox2-AS maintains the cancer stem cell population in glioblastoma multiforme.” *Keystone Symposia*, Whistler Conference Center, February 28, Whistler, British Columbia.

- **Shahzad, U., Li, C., Wang, J.J., Wu, M., Rutka, J.T., & Das, S.D.** (2017). "A novel long noncoding RNA lincSox2-AS maintains the cancer stem cell population in glioblastoma multiforme." *Department of Stem Cell and Biology Talks*, Peter Gilgan Center for Research and Learning, March 15, Toronto, Ontario.
- **Shahzad, U., Li, C., Wang, J.J., Wu, M., Rutka, J.T., & Das, S.D.** (2016). "A novel long noncoding RNA lincSox2-AS maintains the cancer stem cell population in glioblastoma multiforme." *Cell Symposia: Functional RNAs*. Langham Place Hotel, November 8, Guangzhou, China.
- **Shahzad, U., Li, C., Wang, J.J., Wu, M., Rutka, J.T., & Das, S.D.** (2016). "A novel long noncoding RNA lincSox2-AS maintains the cancer stem cell population in glioblastoma multiforme." *EMBL Conference: Transcription and Chromatin*. The European Molecular and Biology Laboratory, August 29, Heidelberg, Germany.
- **Shahzad, U., Li, C., Wang, J.J., Wu, M., Rutka, J.T., & Das, S.D.** (2016). "A novel long noncoding RNA lincSox2-AS maintains the cancer stem cell population in glioblastoma multiforme." *Toronto RNA Day*, Peter Gilgan Center for Research and Learning, August 2, Toronto, Ontario.
- **Shahzad, U., Li, C., Wang, J.J., Wu, M., Rutka, J.T., & Das, S.D.** (2015). Long noncoding RNA regulation of the cancer stem cell phenotype in glioblastoma multiforme. *Canadian Student Health Research Forum*, University of Manitoba Health Sciences Center, June 3, Winnipeg, Manitoba.
- **Shahzad, U., Li, G., & Yau, T.M.** (2014). "Transmyocardial Revascularization Enhances Mesenchymal Stem Cell Engraftment in Infarcted Hearts through SCF—c-kit and SDF-1—CXCR4 Signaling Axes." *Gallie Day*, University of Toronto, May 9, Toronto, Ontario.
- **Shahzad, U., Li, G., & Yau, T.M.** (2013). "Transmyocardial Revascularization Enhances Mesenchymal Stem Cell Engraftment in Infarcted Hearts through SCF—c-kit and SDF-1—CXCR4 Signaling Axes." *International Society for Stem Cell Research Annual Meeting*, Boston Convention and Exhibition Center, June 12, Boston, Massachusetts.
- **Shahzad, U., Li, G., & Yau, T.M.** (2013). "Transmyocardial Revascularization Enhances Mesenchymal Stem Cell Engraftment in Infarcted Hearts through SCF—c-kit and SDF-1—CXCR4 Signaling Axes." *Institute of Medical Sciences Scientific Day*, University of Toronto, May 28, Toronto, Ontario.
- **Shahzad, U., Li, G., & Yau, T.M.** (2013). "Transmyocardial Revascularization Enhances Mesenchymal Stem Cell Engraftment in Infarcted Hearts through SCF—c-kit and SDF-1—CXCR4 Signaling Axes." *International Society for Heart and Lung Transplantation Annual Meeting*, Palais des congrès de Montréal, April 25, Montreal, Quebec.
- **Shahzad, U., Li, G., & Yau, T.M.** (2013). "Transmyocardial Revascularization Enhances Mesenchymal Stem Cell Engraftment in Infarcted Hearts through SCF—c-kit and SDF-1—CXCR4 Signaling Axes." *Heart & Stroke/Richard Lewar Centre of Excellence in Cardiovascular Research Annual Cardiovascular Scientific Day*, University of Toronto, April 18, Toronto.
- **Shahzad, U., Li, G., & Yau, T.M.** (2013). "Transmyocardial Revascularization Enhances Mesenchymal Stem Cell Engraftment in Infarcted Hearts through SCF—c-kit and SDF-1—CXCR4 Signaling Axes." *Collaborative Program in Cardiovascular Sciences Student Day*, University of Toronto, April 17, Toronto, Ontario.
- **Shahzad, U., Li, G., & Yau, T.M.** (2012). "The Role of Stem Cell Signaling Axes in Transmyocardial Revascularization-Enhanced Mesenchymal Stem Cell Engraftment in Infarcted Hearts." *Canadian Cardiovascular Congress*, Metro Toronto Convention Center, October 29, Toronto, Ontario.
- **Shahzad, U., Li, G., Zhang, Y., & Yau, T.M.** (2012). "Transmyocardial revascularization induces mesenchymal stem cell transmigration and engraftment in infarcted hearts." *Muscle Health Awareness Day*, York University, May 25, Toronto.
- **Shahzad, U., Li, G., Zhang, Y., & Yau, T.M.** (2012). "Transmyocardial revascularization induces mesenchymal stem cell transmigration and engraftment in infarcted hearts." *Gallie Day*, University of Toronto, May 4, Toronto, Ontario.
- **Shahzad, U., Li, G., Zhang, Y., & Yau, T.M.** (2012). "Transmyocardial revascularization induces mesenchymal stem cell transmigration and engraftment in infarcted hearts." *Heart & Stroke/Richard Lewar Centre of Excellence in Cardiovascular Research Annual Cardiovascular Scientific Day*, University of Toronto, April 19, Toronto, Ontario.
- **Shahzad, U., Li, G., Zhang, Y., & Yau, T.M.** (2011). "A novel mechanism of action of transmyocardial revascularization: Induction of mesenchymal stem cell transmigration and engraftment via upregulation of stem cell factor and stromal derived factor-1." *Canadian Cardiovascular Congress*, October 25, Vancouver, ON.
- **Shahzad, U., Talovikova, E., & Haines, T.** "What do stakeholders want through collaboration?" (2010). *Center of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD) Retreat*, Queen's University, June 9, Kingston, ON.
- **Shahzad, U., Talovikova, E., Alshurafa, M., & Haines, T.** "Documentation of occupational exposure history in medical charts of primary health care patients with asthma, hand or arm dermatitis, or carpal tunnel syndrome." (2009). *Canadian Society for Epidemiology and Biostatistics and Association of Public Health Epidemiologists in Ontario Joint Conference*, Fairmont Chateau Laurier, May 26, Ottawa, ON.
- **Shahzad, U., Talovikova, E., Alshurafa, M., & Haines, T.** "Documentation of occupational exposure history in medical charts of primary health care patients with asthma, hand or arm dermatitis, or carpal tunnel syndrome." (2009). *Canadian Society for Epidemiology and Biostatistics National Student Conference*, University of Ottawa, May 23, Ottawa, ON.

AWARDS AND HONORS

2019—Meagan's Walk Research Grant, **\$50,000**
2015 & 2019—B.R.A.I.N. Child Canada Research Grant, **\$50,000** total (**\$25,000**/grant awarded twice)
2019—Institute of Medical Science Laidlaw Manuscript Award, **\$400**
2019—Gallie Day Translational Research Award, **\$200**
2019—RNA Society Travel Fellowship, **\$1,000**
2019—School of Graduate Studies Travel Award, **\$1,600**
2018—MAX Women in Science Scholarship, **\$2,500**
2015—Canadian Institutes of Health Research – Frederick Banting and Charles Best Canada Graduate Scholarships: Doctoral Research Award, **\$105,000**
2015—Canadian Institutes of Health Research – Canadian Student Health Research Forum Travel Award, **\$1,000**
2015—Ontario Graduate Scholarship Award, **\$15,000** (Declined)
2014-2015—Ontario Graduate Scholarship Award, **\$15,000**
2014-2015—Frank Fletcher Memorial Scholarship Award, **\$12,841**
2014—University of Toronto Scholarship Award – Institute of Medical Science, **\$5,000**
2013—University of Toronto – School of Graduate Studies Travel Award, **\$500**
2013—University of Toronto – Cardiovascular Sciences Collaborative Program: Medtronic Travel Award, **\$500**
2012-2013—University of Toronto – Cardiovascular Sciences Collaborative Program: Graduate Student Award, **\$500**
2011-2012—Canadian Institutes of Health Research – Frederick Banting and Charles Best Canada Graduate Scholarships: Master's Award, **\$17,500**
2011-2012—University of Toronto Scholarship Award – Institute of Medical Science, **\$5,000**
2006-Present—Golden Key Society
2005-2007—Presidential Scholarship Award for McMaster University, **\$6,000**
2005-2009—Dean's Honor List
2005—Valedictorian for the graduating class of 2005
2005—U.S. President's Volunteer Service Award
2005—U.S. President's Academic Excellence Award
2005—University of Rochester Humanities and Social Sciences Award
2005—Wright State University Allen N. Pope Award, **\$3,500**

RESEARCH GRANTS

2019—Meagan's Walk Grant, **\$50,000**
2019—B.R.A.I.N. Child Canada Research Grant, **\$25,000**
2015—B.R.A.I.N. Child Canada Research Grant, **\$25,000**

MENTORSHIP

- **Summer Student – Natasha Weikmann** 2018-2019
Project: "Genetic screen of C. elegans identifies potential novel therapeutic targets for glioblastoma."
- **Summer Student – Andres Felipe Fajardo** 2016-2017
Project: "Delineating the binding partners of a novel distal enhancer of Sox2 in cancer stem cells."
- **Research Fellow – Nataliia Svergun** 2015-2016
Project: "The role of profilin I and II in glioma progression."

TECHNICAL SKILLS

Bioinformatics, RNA/DNA extractions, qRT-PCR, ddPCR, RNA-seq (including small RNA and single-cell), ChIP-seq, ChIRP-seq, RIP, RNA pulldown & Mass spectrometry analysis, RNAi (using siRNA, shRNA), cloning, flow cytometry, Western blotting, immunohistochemistry/immunocytochemistry, tissue culture, neural and cancer stem cell differentiation & assays, *in vitro* small molecule inhibitor/drug screens, *in vivo* siRNA screens in *C. elegans*, cross-species modeling including *C. elegans*, mouse, and rats

SOFTWARE SKILLS

Python (including Machine Learning and Neural Networks), SQL, R/Bioconductor, Prism, SPSS, Stata, Biolayout, Meditech, Sovera, Citrix, Adobe Illustrator, Photoshop, Affinity Layout, GIMP, Word processing

ADDITIONAL COURSES

▪ MiniMBA	Feb 2017
Graduate Management Consulting Association, University of Toronto, Toronto, Ontario	
▪ Functional Genomics and Systems Biology Course	June 2015
Wellcome Trust Advanced Courses, Wellcome Trust and Sanger Institute, Hinxton, United Kingdom	
▪ Brain Tumors Course	August 2014
Cold Spring Harbor Laboratory Advanced Courses, Cold Spring Harbor, New York	
▪ Bioinformatics Course	Jan-Apr 2014
St. Michael's Hospital, Toronto, Ontario	
▪ Entrepreneurship 101	Sep 2011-May 2012
MaRS Innovation, Toronto, Ontario	
▪ Good Clinical Practice Education	August 2010
McMaster University, Hamilton, Ontario	

SELECTED VOLUNTEER ACTIVITIES

▪ University of Toronto, Toronto, Ontario	2011 – Present
2012-Present—Stem Cell Talks Facilitator	
2012-Present—Toronto Science Fair Volunteer	
2016-2017—University Consulting Group	
2011-2013—Institute of Medical Science Students Association	
▪ McMaster University, Hamilton, Ontario	2005 –2009
2005-2009—Advisor/Editor for Yearbook for the Class of 2009	
2005-2009—BHSc Academic Committee	
2006-2009—Mentor for first year BHSc students	
2006-2009—Muslim Students' Association (MSA)	
2007-2008—Editor-in-chief of McMaster MSA <i>I.M. Magazine</i>	
2007-2008—McMaster MSA Publications Director	
2006-2007—McMaster MSA Social Committee	
2006-2007—Executive Director for Relay for Life (event to raise money for the Canadian Cancer Society)	
2006-2007—Prelude to Mac: mentor for incoming first years	
2006-2007—Bachelor of Health Sciences Society	
2005-2006—BHSc Newspaper, <i>The Collaborator</i>	
2005-2006—BHSc Charity Fashion Show	
2005-2006—Team Captain for Relay for Life	