

Massachusetts General Hospital, Harvard Medical School  
Boston, MA, 02114-  
Cell: 530-302-6143  
Email: bpaul5@mgh.harvard.edu

## Training

Postdoctoral Fellow, 01/2020 – Present  
Massachusetts General Hospital, Harvard Medical School  
Research Interest: Spatial transcriptomics of normal human liver.  
Supervisor: Dr. Alan Mullen

## Education

Ph.D. in Cell Biology, University of Alberta, Canada 05/2015 – 12/2019  
Thesis: Nuclear accumulation of polyadenylated non-coding RNA leads to a breakdown in nuclear RNA homeostasis.  
Supervisor: Dr. Ben Montpetit

M.Sc. in Biochemistry, University of Regina, Canada 01/2009 – 04/2013  
Thesis: Role of  $\beta$ -galactofuranose and  $\beta$ -glucan in *Aspergillus nidulans* hyphal cell wall ultrastructure and physical properties.  
Supervisor: Dr. Tanya Dahms

B.Sc. in Biotechnology and Genetic Engineering 09/2001 – 07/2006  
Khulna University, Bangladesh

## Relevant Experience

Visiting Research Scholar, University of California, Davis 09/2016 – 12/2019

- Performed microscopy to study the impact of ncRNA biogenesis defects on the localization of RNA and associated RNA-binding proteins in yeast.
- Analyzed RNA-Seq data to identify mutation-specific effects on yeast transcriptomes, including custom analysis of NGS data to identify RNA processing defects using shell scripting, R and Python programming.

PhD Candidate, University of Alberta, Canada 09/2013 – 12/2019

- Constructed mutant yeast strains (e.g. gene knock-out / protein tagging) to discover relationship between mRNA decay and RNA processing and export.
- Designed and implemented single molecule fluorescent in situ hybridization experiments to identify mRNA export defects in RNA decay mutants.

Research Assistant, University of Regina, Canada 01/2009 – 04/2013

- Investigation of fungal cell wall ultrastructure by Atomic Force Microscopy.

## Manuscript in Review

- Aguilar, L. C., **Paul, B.**, Pechmann, S., Oeffinger, M., & Montpetit B. (Nucleic Acid Research) Stabilization of polyadenylated non-coding RNA species by multiple mechanisms leads to a generalized disruption in nuclear RNA homeostasis. (Equal Contribution).

## List of publications

1. Milbury, K., **Paul, B.**, Lari A., Fowler C., Montpetit B. & Stirling, C. P. (2019) Exonuclease domain mutants of yeast DIS3 display genome instability. *Nucleus*, 10-1, 21–32.
2. **Paul, B.** & Montpetit B. (2016) Altered RNA processing and export leads to retention of mRNAs near transcription sites, nuclear pore complexes, or within the nucleolus. *Mol Biol Cell*. 27:17, 2742-2756.
3. **Paul, B.**, El-Ganiny, A. M., Abbas, M., Kaminskyj, S. G. & Dahms, T. E.S. (2011) Quantifying the importance of galactofuranose in *Aspergillus nidulans* hyphal wall surface organization by atomic force microscopy. *Eukaryotic Cell* 10, 646-653.

## Invited book Chapters

1. **Paul, B.**, Ma, H., Snook, L. A., Dahms, T. E.S. (2013) High resolution imaging and force spectroscopy of fungal hyphal cells by atomic force microscopy. *Laboratory Protocols in Fungal Biology*, Eds. V.K. Gupta et al., Springer, USA. ISBN 978-1-4614-2355-3.
2. Bhat S., Jun, D., **Paul, B.** and Dahms E. S. T. (2012) Viscoelasticity in biological systems: A special focus on microbes. *Viscoelasticity*, INTECH, European Union, ISBN: 980-953-307-335-9.

## Platform Presentations

1. **Paul, B.**, Yong, B. and Montpetit, B. (2015) Disruption of the nuclear surveillance pathway causes both mRNA and mRNA processing factors to localize to the nucleolus. *Cell Biology Research Day*, University of Alberta, Edmonton, AB, Canada.
2. **Paul, B.**, Yong, B. Porter, C and Montpetit, B. (2015) Identifying essential genes that function in mRNA export. *Western Canada RNA Conference (RiboWest)*, June18-June21, 2014, University of Lethbridge, AB, Canada.
3. **Paul, B.**, Yong, B. Porter, C and Montpetit, B. (2015) Identifying essential genes that function in mRNA export. *Cell Biology Research Day, Loon Lake Cell Biology Retreat*, May 2-4, 2014, BC, Canada.
4. **Paul B.**, El-Ganiny M.A., Abbas M. Kaminskj G.W.S., Dhams E.S.T., The role of  $\beta$ - galactofuranose in the organization of *Aspergillus nidulans* hyphal wall surfaces. *Chemical Biophysics Symposium*, April 9-11, 2010, University of Toronto, ON, Canada.

## Poster Presentation

1. **Paul, B.**, Aguilar, L., Pechmann, S., Oeffinger, M., Montpetit, B. Stabilization of poly(A)-RNA species by multiple mechanisms leads to improper RNA processing and a general disruption in nuclear homeostasis. *Bay Area RNA Club*, 2018, UCSF, CA, USA.

2. **Paul B.** and Montpetit B. (2016) Altered RNA processing and export lead to retention of mRNAs near transcription sites and nuclear pore complexes or within the nucleolus. Yeast Genetics Meeting, 2015 July13-17, Orlando, FL, USA.
3. **Paul, B.,** El-Ganiny, A. M., Abbas, M., Kaminskyj, S. G. & Dahms, T. E.S. The role of  $\beta$ -galactofuranose in cell wall surface structure and elasticity of *Aspergillus nidulans*. Biophysical society 55th annual Meeting, March 5-9, Baltimore, USA.
4. **Paul B.,** El-Ganiny M.A., Abbas M. Kaminskyj G.W.S., Dhams E.S.T., The role of  $\beta$ - galactofuranose in the organization of *Aspergillus nidulans* hyphal wall surfaces. Chemical Biophysics Symposium, April9-11, 2010, University of Toronto. Canada. Poster No-8.

### Scholarships and awards

- FGSR Graduate Travel Award (2016) Faculty of Graduate Study and Research, University of Alberta.
- 75th Anniversary ward (2015-2016), Faculty of Medicine and Dentistry, University of Alberta.
- University of Alberta Doctoral Recruitment Scholarship (2013-2014), University of Alberta.
- Faculty of Graduate Study and Research Scholarship (2012-2013), University of Regina.
- Graduate student association travel award (2011) – University of Regina.
- International graduate student scholarships (2010) - University of Regina.
- Travel award (2010) – Chemical Biophysics Symposium held at University of Toronto.
- Khulna University merit scholarship (2004) - Khulna University.

### References

Dr. Alan C. Mullen  
 Assistant Professor, Department of Medicine  
 Massachusetts General Hospital, Harvard Medical School,  
 Boston, MA, USA  
 Email: [acmullen@mgh.harvard.edu](mailto:acmullen@mgh.harvard.edu)

Dr. Ben Montpetit  
 Associate Professor, Department of Viticulture and Enology  
 University of California, Davis  
 Davis, CA, USA  
 E-mail: [benmontpetit@ucdavis.edu](mailto:benmontpetit@ucdavis.edu)

Dr. Tanya Dahms  
 Professor, Department of Chemistry and Biochemistry  
 University of Regina  
 Regina, SK, Canada  
 E-mail: [tanya.dahms@uregina.ca](mailto:tanya.dahms@uregina.ca)