

## Nicholas W.M. Touikan

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**Field of research:** I am a combinatorial and geometric group theorist.

**Education:**

Ph.D. McGill University, Mathematics. Adviser: Olga Kharlampovich	2004-2009
B.Sc. McGill University, Honours Mathematics	2000-2004

**Prizes and Distinctions:**

Sigma Xi Excellence in Undergraduate Research Award, McGill-Montreal Chapter of Sigma Xi.	2004
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**Research Fellowships:**

Fields Postdoctoral fellowship	08/2012 - 08/2013
NSERC Postdoctoral fellowship (PDF)	09/2009 - 09/2011
NSERC Alexander Graham Bell fellowship (CGS D2)	09/2007 - 09/2009
Bourse de doctorat en recherche du FQRNT (B2)	05/2007 - 08/2007
Bourse de maîtrise en recherche du FQRNT (B1)	09/2004 - 04/2006
NSERC Undergraduate research award (USRA)	05/2003 - 08/2003
Bourse d'étude d'été de l'ISM	07/2002 - 08/2002

**Positions:**

Visiting Associate Professor, Department of Mathematical Sciences Stevens Institute of Technology	09/2014 - 08/2016
Postdoctoral fellow, School of Mathematics and Statistics Carleton University	01/2014 - 03/2014
Fields postdoctoral fellow, School of Mathematics and Statistics Carleton University	09/2012 - 09/2013

Postdoctoral researcher in the ANR project “Geometric, analytic and algorithmical aspects of groups”, Université d’Aix-Marseille	09/2011 - 09/2012
NSERC postdoctoral fellow, Oxford Mathematical Institute	11/2010 - 09/2011
NSERC postdoctoral fellow, CIRGET	09/2009 - 10/2010

**Teaching Experience:**

Instructor for the MA-121 - MA-124 Calculus Sequence Stevens Institute of Technology	2014-2015
Teacher for 201-105/NYC (Linear algebra) Champlain College	Summer 2014
Teacher for 201-103 VA (Calculus 1) Vanier College	Fall 2013
Instructor for MATH 1007 (Calculus 1) Carleton University	Winter 2013
Instructor for MATH 1107 (Linear Algebra) Carleton University	Fall 2012
Postdoctoral co-supervisor of an ISM summer undergraduate research internship. Université du Québec à Montréal	Summer 2010
Graduate mini-course: <i>From Bass-Serre theory to JSJ decompositions</i> McGill University	Fall 2008
Graduate mini-course: <i>Stable group actions on real trees</i> McGill University	Fall 2007
Teaching Assistant for MATH 140 (Calculus I) McGill University	Fall 2006
Teaching Assistant for MATH 141 (Calculus II) McGill University	Winter 2005
Teaching Assistant for MATH 235 (Basic Abstract Algebra) McGill University	Fall 2005

**Conferences Organized:**

Co-organizer of the first two workshops of the CRM Thematic Semester in Geometric, Combinatorial and Computational Group theory.	Summer 2010
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**Miscellaneous Academic Activities:**

Member of the Stevens Strategic Pedagogy in Mathematics committee.	2015
Reviewer for the MathSciNet database.	
Referee for peer-reviewed journals.	
VP Finance of the Carleton University Postdoctoral Association (CUPA)	2013
Member of the Mathematics and Statistics house committee.	2008-2009
Organizer of the ISM inter-university graduate student seminar.	2007-2008
Representative for the department of Mathematics and Statistics in McGill's postgraduate student society.	2006-2007

**Articles published in or accepted by peer-reviewed journals:**

- On the one-endedness of graphs of groups* (accepted by Pacific Journal of Mathematics)  
<http://arxiv.org/abs/1403.6452>
- Bulitko's Lemma for acylindrical splittings*  
 Journal of Algebra, Volume 406 (2014), 251-271.
- The fully residually  $F$  quotients of  $F * \langle x, y \rangle$*   
 Groups, Geometry, and Dynamics, Volume 6 (2012), Issue 1, 155-220.
- The Solvability Problem for Quadratic Equations over Free Groups is NP-Complete*  
 (Joint with Igor Lysenok, Olga Kharlampovich, and Alexei Miasnikov) Theory of Computing systems, Volume 47 (2010), Issue 1, 250-258.
- The equation  $w(x, y) = u$  over free groups: an algebraic approach*  
 Journal of Group Theory, Volume 12 (2009), Issue 4, 611-634.
- A Fast Algorithm for Stallings' Folding Process*  
 International Journal of Algebra and Computation, Volume 16 (2006), Issue 6, 1031-1045.

**Preprints:**

- Isomorphisms using Dehn fillings: the splitting case*  
 (Joint with François Dahmani)  
<http://arxiv.org/abs/1311.3937>
- Strong accessibility for finitely presented groups* (submitted)  
 (Joint with Lars Louder)  
<http://arxiv.org/abs/1302.5451>
- Finding tracks in 2-complexes* (submitted)  
<http://arxiv.org/abs/0906.3902>

**Articles in preparation (working titles):**

*Limit groups for relatively hyperbolic groups*  
(Joint with Inna Bumagin)

*Limit groups are not conjugately residually free (and some positive results as well)*  
(Joint with Lars Louder)

**Personal:** I am the spouse of Charlène Rochefort-Allie and we have a daughter, Simone. Here are some other facts.

Year of birth: 1981

Citizenship: Canadian

Languages: Native speaker of English and French, basic knowledge of Cantonese and Mandarin.

Erdős-Bacon number: 7