

April 21, 2011

**PERSONAL DATA**

**Citizenship:** Canadian  
**Languages:** English  
 French (reading only)  
**Present Position:** Associate Professor  
 Department of Pure Mathematics  
 University of Waterloo  
 Waterloo, Ontario, N2L 3G1  
 CANADA  
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**DEGREES**

Degree	Institution	Period	Area
BSc (Honours)	U. of Alberta	1991/09-1995/04	Mathematics
MMath	U. of Waterloo	1995/09-1997/04	Pure Mathematics
PhD	U. of Waterloo	1997/05-2002/05	Pure Mathematics

**PAST POSITIONS**

Position	Institution	Location	Period
Visiting Assistant Professor	Texas A&M University	College Station, Texas, USA	2002/09– 2004/05

**VISITING POSITIONS**

Institution	Location	Period
Chalmers University	Göteborg, Sweden	2001/04
Lakehead University	Thunder Bay, Ontario, Canada	2001/11
Leeds University	Leeds, United Kingdom	2008/03-04, 2010/05
Université de Metz	Metz, France	2008/07, 2009/06

**TEACHING EXPERIENCE**

## COURSES TAUGHT (at Texas A&amp;M U.)

<b>Course</b>	<b>Title</b>	<b>Term</b>
Math 141	Business Math	2002/09-12
Math 172	Calculus II	2003/09-12
Math 251	Calculus III	2004/01-04
Math 662	VIGRE course: Frames, Wavelets and Group Representations	2003/01-04

All activity below is at University of Waterloo, unless otherwise specified.

## COURSES TAUGHT (at U. of Waterloo)

<b>Course</b>	<b>Title</b>	<b>Number of times (most recent term)</b>
Math 118	Calculus II (for Engineering)	1 (2002/05-08)
Math 127	Calculus I (for Science)	2 (1999/09-12)
Math 137	Calculus I (for Math)	2 (2010/09-12)
Math 237	Calculus III (for Math)	2 (2009/09-12)
Math 247	Calculus III (Advanced Section)	3 (2007/01-04)
Math 331	Applied Real Analysis	1 (2007/09-12)
Math 352	Complex Analysis (Advanced)	1 (2009/09-12)
Math 354 (450)	Lebesgue Measure & Fourier Analysis	6 (2010/01-04)
Math 451	Measure Theory	1 (2010/01-04)
Math 453 (753)	Functional Analysis	2 (2005/09-12)
Math 763	Lie Theory	1 (2010/09-12)
Math 822	Operator Spaces	1 (2006/09-12)
Math 833	Representations of $SL_2(\mathbb{R})$	1 (2009/01-04)

## READING COURSES SUPERVISED

Lie Groups, 2006/01-04; Banach Algebras, 2006/05-08

**MENTORING EXPERIENCE**

## GRADUATE SUPERVISION

<b>Student, degree</b>	<b>terms</b>	<b>thesis/project title</b>	<b>Current position</b>
Mahya Ghandehari PhD	2005/09 -2010/08	Harmonic Analysis of Rachman algebras	AARMS Post-doc Dalhousie U.
Michael Brannan MMath	2006/09 -2008/08	Operator spaces and ideals in Fourier algebras	PhD, R. Speicer & J. Mingo, Queens U.
Laura Marti Perez PhD	2006/09 -present	Fourier algebras of groupoids	
Aaron Tikuisis MMath	2006/09 -2007/08	Amenability for the Fourier algebra	PhD, G. Elliot U. Toronto
Cameron Zwarich MMath	2006/09 -2008/08	Von Neumann algebras for abstract harmonic analysis	Apple Computer Cupertino
Elçim Elgun PhD	2007/09 -present		
Michael Sgambelluri MMath	2009/09 -2011/04	On the Banach- Tarski paradox	Semacode Waterloo

## GRADUATE THESIS COMMITTEES

Dilian Yang, PhD, 2006/05 (represented K. Hare)  
 Magdalena Georgescu, MMath, 2006/08  
 Keon Choi, 2007/08  
 Ion Oancea, PhD, 2008/07  
 Ryan Hamilton, MMath, 2009/04  
 Ted Boey, MMath, 2010/08

## GRADUATE EXAMINATIONS

Analysis comprehensive exam, 2005/01  
 Ion Oancea, Oral comprehensive exam, 2007/03.  
 Analysis comprehensive exam, 2011/06

## UNDERGRADUATE RESEARCH SUPERVISION

<b>student</b>	<b>term</b>
Michael Lipnowski	2006/05-08
Vincent Chan	2008/05-08
Elliot Lipnowski	2009/05-08
Oleg Rykov	2009/05-08
Jiang Xiao	2009/05-08
Ian Charlesworth	2010/05-08
Xuancheng (Bill) Huang	2010/05-08
Peter Prelich	2010/05-08

## POST-DOCTORAL SUPERVISION

<b>Post-doc</b>	<b>dates</b>	<b>present position</b>
Ebrahim Samei	2007/01-2008/12	Assistant prof. U. Saskatchewan
Hun Hee Lee	2007/09-2009/04	Assistant prof. Chungbuk National U.
Pekka Salmi	2010/09-2011/08	
Yin-Hei (Michael) Cheng	2011/01-2011/08	

**SERVICE**

## CONFERENCE ORGANISATION

<b>Conference</b>	<b>location</b>	<b>role</b>	<b>date</b>
Great Plains Operator Theory Symposium	Texas A&M	co-organiser	2004/05
Canadian Operator Symposium	U. Waterloo	co-organiser	2004/05
Operator Algebras, Operator Spaces and Harmonic Analysis session	U. Waterloo	co-organiser	2005/06
Candaian Mathematics Society Summer Meeting			
Banach Algebras 2011	U. Waterloo	main organiser	2011/08

## COMMITTEE MEMBERSHIP

<b>Comittee</b>	<b>role</b>	<b>dates</b>
Curriculum Committee	member	2005/05-2007/04
Scholarship Committee	member	2007/05-2009/04
Library Representative	representative	2007/05-present
Graduate Committee	member	2009/05-present

**SELECTED SCHOLARSHIPS, FELLOWSHIPS AND AWARDS**

- NSERC Post-Doctoral Fellowship, 2002/09-2004/08.
- University of Waterloo Alumni Gold Medal, 2002/10.
- Canadian Mathematical Society Doctoral Prize, 2004/12.

**SOCIETY MEMBERSHIPS**

- Canadian Mathematical Society, lifetime membership, 2004/12-present.
- American Mathematical Society, 2006/01-present.

**RESEARCH GRANTS**

<b>Agency</b>	<b>Grant</b>	<b>Period</b>	<b>Amount</b>
U. Waterloo	Start-up	2004/06-2006/06	\$20000
NSERC	DG 312515-05	2005/05-2010/04	\$65000 <sup>†</sup>
NSERC	DG 312515-05	2010/05-2015/04	\$120000 <sup>‡</sup>

<sup>†</sup> Distributed at \$13000/year, for 5 years. <sup>‡</sup> Distributed at \$24000/year, for 5 years.

**PUBLICATIONS**

## ARTICLES IN REFEREED JOURNALS

- [1] with P. Wood. Diagonal type conditions on group  $C^*$ -algebras. *Proc. Amer. Math. Soc.* 129 (2001), no. 2, 609–616.
- [2] Operator weak amenability of the Fourier algebra. *Proc. Amer. Math. Soc.* 130 (2002), no. 12, 3609–3617.
- [3] with L. Turowska. Spectral synthesis and operator synthesis for compact groups. *J. London Math. Soc. (2)* 66 (2002), no. 2, 361–376.
- [4] with B.E. Forrest, E. Kaniuth and A.T.-M. Lau. Ideals with bounded approximate identities in Fourier algebras. *J. Funct. Anal.* 203 (2003), no. 1, 286–304.
- [5] with O. Aristov and V. Runde. Operator biflatness of the Fourier algebra and approximate indicators for subgroups. *J. Funct. Anal.* 209 (2004), no. 2, 367–387.
- [6] with V. Runde. Operator amenability of Fourier-Stieltjes algebras. *Math. Proc. Cambridge Philos. Soc.* 136 (2004), no. 3, 675–686.
- [7] Measurable Schur multipliers and completely bounded multipliers of the Fourier algebras. *Proc. London Math. Soc.*, 89 (2004), no. 1, 161–192.
- [8] with R.R. Smith. Representations of group algebras in spaces of completely bounded maps. *Indiana Univ. Math. J.* 54 (2005), no. 3, 873–896.
- [9] with M. Ilie. Completely bounded homomorphisms of the Fourier algebras. *J. Funct. Anal.* 225 (2005), no. 2, 480–499.
- [10] with B.E. Forrest. Best bounds for approximate identities in ideals of the Fourier algebra vanishing on subgroups. *Proc. Amer. Math. Soc.* 134 (2006), no. 1, 111–116.
- [11] with V. Runde. Operator amenability of Fourier-Stieltjes algebras. II. *Bull. Lond. Math. Soc.* 39 (2007), no. 2, 194–202.
- [12] with B.E. Forrest and P.J. Wood. Operator Segal algebras in Fourier algebras. *Studia Math.* 179 (2007), no. 3, 277–295.

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- [13] with M. Ilie. The spine of a Fourier-Stieltjes algebra. *Proc. Lond. Math. Soc. (3)* 94 (2007), no. 2, 273–301.
- [14] Operator space structure on Feichtinger’s Segal algebra. *J. Funct. Anal.* 248 (2007), no. 1, 152–174.
- [15] with B.E. Forrest and V. Runde. Operator amenability of the Fourier algebra in the cb-multiplier norm. *Canad. J. Math.* 59 (2007), no. 5, 966–980.
- [16] with M. Ilie. The algebra generated by idempotents in a Fourier-Stieltjes algebra. *Houston J. Math.* 33 (2007), no. 4, 1131–1145.
- [17] with M. Neufang and Z.-J. Ruan. Completely isometric representations of  $M_{cb}A(G)$  and  $UCB(\hat{G})$ . *Trans. Amer. Math. Soc.* 360 (2008), no. 3, 1133–1161.
- [18] with A. Azimifard and E. Samei. Amenability properties of the centres of group algebras. *J. Funct. Anal.* 256 (2009), no. 5, 1544–1564.
- [19] with B.E. Forrest and E. Samei. Weak amenability of Fourier algebras on compact groups. *Indiana Univ. Math. J.* 58 (2009), no. 3, 1379–1393.
- [20] with M. Ghandehari and H. Hatami. Amenability constants for semi-lattice algebras. *Semigroup Forum* 79 (2009), no. 2, 279–297.
- [21] with B.E. Forrest and E. Samei. Convolutions on compact groups and Fourier algebras of coset spaces. *Studia Math.* 196 (2010), no. 3, 223–249.
- [22] with E. Samei and R. Stokke. Biflatness and pseudo-amenability of Segal algebras. *Canad. J. Math.* 62 (2010), no. 4, 845–869.
- [23] with G.A. Bagheri-Bardi and A.R. Medghalchi. Operator-valued convolution algebras. *Houston J. Math.* 36 (2010), no. 4, 1023–1036.

## ARTICLES IN REFEREED CONFERENCE PROCEEDINGS

- [1] Representations of multiplier algebras in spaces of completely bounded maps. *Banach algebras and their applications*, 335–343, *Contemp. Math.*, 363, Amer. Math. Soc., Providence, RI, 2004.

- [2] Amenability properties of Fourier algebras and Fourier-Stieltjes algebras: a survey, *Banach Algebras 2009*, 365–383, Banach Center Publications, Vol. 91, IMPAN, Warsaw, 2010.

#### SUBMITTED TO REFEREED JOURNALS

- [1] with J. Ludwig and L. Turowska. Beurling-Fourier algebras on compact groups: spectral theory. 37 pages.

#### RESEARCH PRESENTATIONS

##### INVITED CONFERENCE LECTURES

- [1] Diagonal type conditions on group  $C^*$ -algebras. *Canadian Mathematical Society Summer Meeting, Harmonic Analysis Session*, Memorial U. of Newfoundland, 1999/06.
- [2] The Banach-Tarski Paradox and Harmonic Analysis. Plenary speaker, *Mathematics Faculty Graduate Symposium*, U. of Waterloo, 2000/06.
- [3] Diagonal type conditions on group  $C^*$ -algebras. *Operator Theory on the Prairies*, U. of Regina, 2000/08.
- [4] Operator weak amenability of the Fourier algebra. *2002 Canadian Symposium on Abstract Harmonic Analysis*, U. of Windsor, 2002/05.
- [5] Representations of multiplier algebras in spaces of completely bounded maps. *Banach algebras 2003*, U. of Alberta, 2003/08.
- [6] On representations of measures in spaces of completely bounded maps. *2004 Canadian Symposium on Abstract Harmonic Analysis*, U. of Western Ontario, 2004/05.
- [7] Completely bounded homomorphisms on Fourier algebras. *2004 Istanbul International Abstract Harmonic Analysis Conference*, Koç U., Istanbul, 2004/07.
- [8] Operator spaces and abstract harmonic analysis. Doctoral Prize Lecture at *Canadian Mathematical Society 2004 Winter Meeting*, Montreal, 2004/12.

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- [9] The spine of a Fourier-Stieltjes algebra. *Canadian Mathematical Society Summer Meeting, Operator Algebras, Operator Spaces and Harmonic Analysis session*, U. of Waterloo, 2005/06.
  - [10] Operator Segal algebras in Fourier algebras. *2006 Canadian Symposium on Abstract Harmonic Analysis*, U. of Manitoba, 2006/05.
  - [11] Amenability of Fourier-Stieltjes algebras. *2006 Istanbul International Abstract Harmonic Analysis Conference*, Koç U., Istanbul, 2006/07.
  - [12] The algebra generated by idempotents in a Fourier-Stieltjes algebra. *First Joint CMS/SMM Meeting, Functional Analysis Session*, CIMAT, Guanajuato, Mexico, 2006/09.
  - [13] Operator space structure on Feichtinger's Segal algebras. *Operator Spaces and Group Algebras*, BIRS, Banff, 2007/08.
  - [14] Convolutions on compact groups and Fourier algebras of coset spaces. *Workshop on Operator Spaces and Quantum Groups*, Fields Institute, 2007/12.
  - [15] Convolutions on compact groups and Fourier algebras of coset spaces. *International Conference on Abstract Harmonic Analysis*, CUHK, Hong Kong, 2007/12.
  - [16] Operator amenability of Fourier-Stieltjes algebras and amenability constants. *International Conference on Abstract Harmonic Analysis*, CUHK, Hong Kong, 2007/12.
  - [17] Cohomology properties of the centres of group algebras. *Functional analysis splinter group, 2008 British Mathematics Colloquium*, U. of York, UK, 2008/03.
  - [18] Convolutions on compact groups and Fourier algebras of coset spaces. *Banach Algebras and Harmonic Analysis*, U. of Leeds, 2008/04.
  - [19] Operator space structure on Feichtinger's Segal algebras. *Classical and Modern Harmonic Analysis: from Theory to Numerical Computation*, ICMS, Edinburgh, 2008/05.
  - [20] Weak amenability of Fourier algebras. *Analyse Harmonique, algèbres d'opérateurs et représentations*, CIRM, Luminy, 2008/11.
  - [21] Weak amenability of Fourier algebras. *AMS Sectional Meeting, Banach Algebras session*, San Francisco State U., 2009/04.

- [22] Amenability of Fourier and Fourier-Stieltjes algebras. Plenary talk. *Laufest*, confernece in honour of A.T.-M. Lau, U. of Alberta, 2009/05.
- [23] Operator-valued convolution algebras. *British-Nordic Mathematics Colloquium, Noncommutative Analysis Session*, U. of Oslo, 2009/07.
- [24] Beurling-Fourier algebras on compact groups. *CMS Winter Meeting, Banach Algebras and Harmonic Analysis session*, Windsor, 2009/12.
- [25] Eberlein compactifications. *Banach algebra and operator space techniques in topological group theory: First Conference*, U. of Leeds, 2010/06.
- [26] Homomorphisms on Fourier and group algebras. 3 expository lectures. *Banach algebra and operator space techniques in topological group theory: workshop*, U. of Leeds, 2010/06.
- [27] Beurling-Fourier algebras on compact groups. *Functional Analysis Valencia 2010*, U. Valencia, 2010/06.
- [28] Beurling-Fourier algebras on compact groups. *Satellite Conference on Harmonic Analysis, ICM, NISER, Bhubaneswar*, 2010/08.

## SEMINAR AND COLLOQUIUM LECTURES

- [1] Diagonal type conditions on group  $C^*$ -algebras. Dalhousie U., 1999/05.
- [2] Diagonal type conditions on group  $C^*$ -algebras. U. of Alberta, 2000/08.
- [3] Operator space structure on the Fourier algebra and amenability theory. Chalmers U., Göteborg, 2001/04.
- [4] Completely bounded multipliers of the Fourier algebra and the similarity problem for locally compact groups. U. of Windsor, 2001/10.
- [5] Operator space structure on the Fourier algebra and amenability theory. Lakehead University, 2001/11.
- [6] On representing group algebras in spaces of completely bounded maps. U. of Illinois, Urbana-Champaign, 2003/10.
- [7] Operator spaces and harmonic analysis. U. of Windsor, 2004/01.
- [8] Completely bounded homomorphisms on Fourier algebras. U. of Guelph, 2004/10.

- [9] Segal algebras in Fourier algebras. Lakehead U., Thunder Bay, 2005/05.
- [10] Amenability of Fourier-Stieltjes algebras. Wayne State U., 2006/04.
- [11] Amenability of Fourier-Stieltjes algebras. U. of Windsor, 2006/11.
- [12] Amenability properties of Fourier-Stieltjes algebras. Laval U., 2007/01.
- [13] Operator-valued Fourier-Stieltjes and measure algebras. Queen's U., Belfast, 2008/04.
- [14] Operator amenability of Fourier-Stieltjes algebras and amenability constants, U. of Lancaster, 2008/04.
- [15] Operator amenability of Fourier-Stieltjes algebras and amenability constants, U. of Glasgow, 2008/04.
- [16] Amenability properties of the centres of group algebras, U. Paul-Verlaine, Metz, 2008/06.
- [17] Amenability properties of the centres of group algebras, U. of Oulu, 2008/07.
- [18] Amenability of Fourier and Fourier-Stieltjes algebras, Queen's U., Belfast, 2009/06.
- [19] Eberlein compactifications, U. of Luxembourg, 2009/07.
- [20] Beurling-Fourier algebras on compact groups, U. of Guelph, 2010/09.
- [21] Complex structures related to algebras of harmonic analysis, Bowling Green State U., Ohio, 2010/11.