Tristram Bogart

Basic Information

Birthdate: February 2, 1980

Citizenship: United States

Languages: English (native), Spanish (fluent)

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Education

Ph.D. Mathematics, University of Washington, June 2007. Adviser: Rekha R. Thomas.

B.A. Mathematics, Oberlin College, 2001; graduated with high honors.

Budapest Semesters in Mathematics. Budapest, Hungary, January–May 2000.

Professional Experience

Associate Professor, Departamento de Matemáticas, Universidad de los Andes, February 2015–present.

Visiting Researcher, Mathematics Department, San Francisco State University, August–December 2017.

Assistant Professor, Departamento de Matemáticas, Universidad de los Andes, August 2011–January 2015.

NSF/MSRI Postdoctoral Fellow, Mathematics Department, San Francisco State University, August 2010–May 2011.

Coleman Postdoctoral Fellow, Department of Mathematics and Statistics, Queen's University, Kingston, Ontario, Canada, July 2007–June 2010.

Postdoctoral Fellow, Mathematical Sciences Research Institute, August–December 2009.

Long-term Visitor, Institute for Mathematics and its Applications, Minneapolis, January–March 2007.

Refereed Publications and Preprints

1. An l–p switch trick to obtain a new elementary proof of a criterion for arithmetic equivalence (with Guillermo Mantilla-Soler.) To appear in *Research in Number Theory*.

2. Parametric Presburger Arithmetic: Complexity of Counting and Quantifier Elimination (with John Goodrick, Danny Nguyen, and Kevin Woods.) Submitted.

3. Parametric Presburger arithmetic: logic, combinatorics, and quasi-polynomial behavior (with John Goodrick and Kevin Woods.) *Discrete Analysis*, 2017, #4.

4. A lower bound for the determinantal complexity of a hypersurface (with Jarod Alper and Mauricio Velasco.) *Foundations of Computational Mathematics*, v. 17 (3), 2017, pp. 829-836.

5. Superlinear subset partition graphs with dimension reduction, strong adjacency, and endpoint-count (with Edward D. Kim.) *Combinatorica*, v. 38 (1), 2018, pp. 75–114.

6. Finitely many smooth d-polytopes with n lattice points (with C. Haase, M. Hering, B. Lorenz, B. Nill, A. Paffenholz, G. Rote, F. Santos, and H. Schenck.) *Israel Journal of Mathematics*, v. 207 (1), 2015, pp. 301-329.

7. Hom-polytopes (with Mark Contois and Joseph Gubeladze.) *Mathematische Zeitschrift*, v. 272 (3–4), 2013, pp. 1267-1296.

8. Enumeration of Golomb Rulers and Acyclic Orientations of Mixed Graphs (with Matthias Beck and Tu Pham.) *Electronic Journal of Combinatorics* v. 19 (3), 2012, P42.

9. Universal Gröbner bases of colored partition identities (with Raymond Hemmecke and Sonja Petrović.) *Experimental Mathematics* v. 21 (4), 2012, pp. 395-401.

10. Obstructions to lifting tropical curves in surfaces in 3-space (with Eric Katz.) *Siam Journal on Discrete Mathematics*, v. 26 (3), 2012, pp. 1050-1067.

11. Riffs on the infinite ping-pong ball conundrum (with Ami Mamolo.) *International Journal of Mathematical Education in Science and Technology* v. 42 (5), 2011, pp. 615–623.

12. Small Chvátal rank (with Annie Raymond and Rekha Thomas.) *Mathematical Programming, Series B* v. 124 (1-2), 2010, pp. 45–68.

13. The circuit ideal of a vector configuration (with Anders Jensen and Rekha Thomas) *Journal of Algebra* v. 309 (2), 2007, pp. 518-542.

14. Computing tropical varieties (with Anders Jensen, David Speyer, Bernd Sturmfels, and Rekha Thomas.) *Journal of Symbolic Computation* v. 42, 2007, no. 1-2, pp. 54-73.

Courses Taught

Course	University	Date
Commutative Algebra	Los Andes	autumn 2018
Linear algebra	Los Andes	most recently autumn 2018
Probabilistic methods in combinatorics	Los Andes	spring 2018
Honors probability	Los Andes	spring 2017
Enumerative combinatorics	Los Andes	autumn 2016
Abstract algebra II	Los Andes	spring 2016
Computational complexity	Los Andes	autumn 2015
Foundations of mathematics	Los Andes	most recently spring 2015
Differential equations	Los Andes	spring 2015
Permutation groups	Los Andes	autumn 2014
Algebraic combinatorics	Los Andes	spring 2014
Number theory	Los Andes	autumn 2013
Introduction to combinatorics	Los Andes	spring 2012
Integral calculus	Los Andes	spring 2012
Differential calculus	Los Andes	autumn 2011
Calculus I	San Francisco State	autumn 2010
Linear algebra	Queen's	winter 2010

Linear algebra II	Queen's	winter 2009	
Calculus I	Queen's	autumn 2008	
Calculus for economics	Queen's	most recently winter 2008	
Linear algebra	Washington	spring 2007	
Calculus III	Washington	most recently spring 2006	
Calculus I	Washington	summer 2003	
Precalculus	Washington	spring 2003	

Theses supervised

Name	Type	Completion Date	Topic
Juan Camilo Torres	Ph.D	continuing	polytopes and algebra
Julián Chitiva	undergraduate	December 2017	tropical geometry
Juan Camilo Azuero	undergraduate	June 2017	polytopes
Daniel Tamayo	undergraduate	June 2017	polytopes
Juan Pablo Henao	undergraduate	December 2015	algorithms
Daniel Ávila	undergraduate	June 2014	computational algebra
Jorge Alberto Olarte	undergraduate	June 2014	matroids
Federico Castillo	undergraduate	June 2012	tropical geometry

Invited Talks

Date	Location	Event
2 June 2018	U. del Norte, Colombia	Encuentro Soc. Mat. Colombia–México
1 June 2018	U. del Norte, Colombia	Encuentro Soc. Mat. Colombia–México
13 March 2018	Freie U. Berlin, Germany	Einstein Workshop
8 January 2018	Oberlin College	Lenora Lecture
5 January 2018	Oberlin College	Faculty Seminar
5 October 2017	Seattle U.	Math Colloquium
20 April 2017	U. de Los Andes	Math Colloquium
23 March 2017	Fond. U. Konrad Lorenz, Colombia	Research Day
February 2017	U. Andrés Bello, Chile	Minicourse on Algebraic Complexity
24 May 2016	U. de Los Andes	Escuela de Física Matemática
9 January 2016	Seattle	Joint Mathematics Meetings
14 October 2015	U. de Cauca, Colombia	Math Colloquium
10 September 2015	U. de Los Andes	Math Colloquium
12 August 2014	Pasto, Colombia	ALTENCOA-6
15 January 2014	U. Washington	Combinatorics Seminar
11 December 2013	San Francisco State	Algebra-Geometry-Combinatorics Seminar
July 2013	Barranquilla, Colombia	XIX Congreso Colombiano de Matemáticas
21 June 2013	Aarhus U., Denmark	Optimization Seminar
31 May 2013	U. de Los Andes	Escuela de Física Matemática
21 January 2013	San Diego	Joint Mathematics Meetings
17 September 2012	U. de Los Andes	Mathematics First-Year Seminar
10 July 2012	Minneapolis	SIAM Annual Meeting
6 October 2011	U. de Los Andes	Math Colloquium
June 2011	Edmonton	CMS Summer Meeting
19 May 2011	Darmstadt, Germany	SIAM Conference on Optimization

12 May 2011	Saarbrücken, Germany	Algebraic Geometry Seminar
14 April 2011	UC Davis	Algebra and Discrete Mathematics Seminar
9 February 2011	Sonoma State	Math Colloquium
16 October 2010	UC Berkeley	Bay Area Discrete Math Day
June 2010	Osaka, Japan	Gröbner Bases and the Industrial Society
20 January 2010	Queen's U.	Algebraic Geometry Seminar
6 November 2009	MSRI	Postdoctoral Seminar
29 May 2009	Heidelberg University	Algebra & Number Theory Seminar
17 February 2009	Ohio State	Algebraic Geometry Seminar
7 January 2009	Washington D.C.	Joint Mathematics Meetings
7 December 2008	Ottawa	CMS Winter Meeting
18 October 2008	Kingston, ON	Route 81 Conference
6 October 2008	Queen's U.	Algebraic Geometry Seminar
22 June 2008	Snowbird, Utah	Computational Algebra and Convexity
9 May 2008	San Francisco State	Algebra-Geometry-Combinatorics Seminar
8 April 2008	Univ. of Washington	Algebra Seminar
24 September 2007	Queen's U.	Algebraic Geometry Seminar
13 February 2007	U. Minnesota	IMA Postdoc Seminar
13 November 2006	UC Berkeley	Combinatorics Seminar
18 January 2006	U. Washington	Combinatorics and Geometry Seminar
21 October 2005	San Francisco State	Algebra-Geometry-Combinatorics Seminar
12 May 2005	U. Washington	Current Problems Seminar

Grants, Scholarships, and Fellowships

Proyecto de Investigación, Los Andes, 2018-2019.

Open Arms Travel Grant to attend the International Congress of Mathematicians, 2018.

Fondo de Apoyo para Profesores Asistentes (startup fund), Los Andes, 2012–2015.

AMS Math. Research Community: *Computational Algebra and Convexity*, 2008–2009.

University of Washington VIGRE fellowship, 2001–02 and 2004–05.

University of Washington Graduate School Merit Award, 2001.

Oberlin Rebecca Cary Orr Memorial Prize in Mathematics, 2001

Professional Activities

Applied mathematics committee, Los Andes, March 2018–present.

Mathematics postgraduate committee, Los Andes, March 2018–present.

Mathematics hiring committee, Los Andes, August 2016-June 2017.

Linear algebra course coordinator, August 2015–June 2016.

Los Andes mathematics colloquium coordinator, January 2013–December 2014.

Scientific committee for *5. Encuentro Colombiano de Combinatoria*, Universidad Nacional de Colombia (Medellin), June 2016.

Local organizer for *4. Encuentro Colombiano de Combinatoria*, Los Andes, June 2014.

Scientific and local committees for *3. Encuentro Colombiano de Combinatoria*, Los Andes, June 2012.

Organizer for *22nd Bay Area Discrete Math Day*. San Francisco State, 30 April 2010.

Local organizing committee for *Formal Power Series & Algebraic Combinatorics 2010*. San Francisco State, 2–6 August 2010.

Grant reviewer for the National Security Agency (United States) and for the Nueva Granada Military University (Colombia)

Referee for the journals *Algebraic Colloquium*, *The American Mathematical Monthly*, *Combinatorica*, *Discrete and Computational Geometry*, *Electronic Journal of Combinatorics*, *International Journal of Algebra and Computation*, *International Transactions in Operational Research*, *Journal of Algebraic Combinatorics*, *Journal of Combinatorial Theory, Ser. A*, *Journal of Pure and Applied Algebra*, *Journal of Symbolic Computation*, *Lecturas Matemáticas*, *Mathematics of Operations Research*, *Revista Integración*, *SIAM Journal on Discrete Mathematics*, and *Discrete and Computational Geometry*.

Guest lecturer in the course *Computational Algebra and Algebraic Geometry*, taught by Susan Colley at Oberlin College, 1–3 December 2008.

Research assistant to Joseph Gubeladze. San Francisco State, 1 May – 20 June 2008.

Assistant at the tutorial *Algebraic Algorithms in Optimization*, Institute for Mathematics and its Applications, Minneapolis, 12–13 January 2007.

Organizer of U. of Washington VIGRE examples seminar, winter and spring 2005.

Organizer of U. of Washington math department's current problems seminar, 2003–2004.

Summer REU under Vic Reiner. U. of Minnesota, June–July 2000.