CURRICULUM VITAE

FEDERICO GALETTO

Contact Information.

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Education.

2009 - 2013	*Ph.D. in Mathematics*, Northeastern University
2007 - 2009	*M.S. in Pure Mathematics*, Northeastern University
2005 - 2008	*Laurea Magistrale in Matematica* (equivalent to M.S.), Università degli Studi di Torino
2001 - 2005	*Laurea in Scienze Matematiche* (equivalent to B.S.), Università degli Studi di Torino

Academic Positions.

2015 - present	*Postdoctoral Fellow*, McMaster University, Hamilton, ON
Fall 2016	*Visiting Researcher*, Fields Institute, Toronto, ON
2013 - 2015	*Coleman Postdoctoral Fellow*, Queen's University, Kingston, ON
2007 - 2013	*Teaching Assistant*, Northeastern University, Boston, MA

Research Interests.

Commutative and homological algebra, algebraic geometry
Computational methods and mathematical software

Refereed Papers.

2018 9. F. Galetto, Y.S. Shin, A. Van Tuyl. Distinguishing k-configurations, `arXiv:1705.09195`. To appear in *Illinois Journal of Mathematics*.

8. H. Abe, L. DeDieu, F. Galetto, and M. Harada. Geometry of Hessenberg varieties with applications to Newton-Okounkov bodies. *Selecta Math. (N.S.)*, 24(3):2129–2163, 2018.

7. F. Galetto, A. V. Geramita, and D. L. Wehlau. Symmetric complete intersections. *Communications in Algebra*, 46(5):2194–2204, 2018.

2017 6. F. Galetto. On the ideal generated by all squarefree monomials of a given degree, `arXiv:1609.06396`. To appear in *Journal of Commutative Algebra*.

5. F. Galetto, A.V. Geramita, D. Wehlau. Degrees of regular sequences with a symmetric group action, `arXiv:1610.06610`. To appear in *Canadian Journal of Mathematics.*
4. F. Galetto. Generators of truncated symmetric polynomials. *Journal of Pure and Applied Algebra*, 221(2):276–285, 2017.

2016 3. F. Galetto. Propagating weights of tori along free resolutions. *Journal of Symbolic Computation*, 74:1–45, 2016.

2015 2. F. Galetto. Free resolutions and modules with a semisimple Lie group action. *Journal of Software for Algebra and Geometry*, 7(1):17–29, 2015.

2014 1. F. Galetto. Computational methods for orbit closures in a representation with finitely many orbits. *Experimental Mathematics*, 23(3):310–321, 2014.

Preprints.

2018 3. F. Galetto, G.G. Smith, J. Weyman. Tangent schemes of determinantal varieties (in preparation)
2. F. Galetto, J. Hofscheier, G. Keiper, C. Kohne, M.E. Uribe-Paczka, and A. Van Tuyl. Betti numbers of toric ideals of graphs: A case study, `arXiv:1807.02154`

2016 1. F. Galetto, A.V. Geramita, Y.S. Shin, A. Van Tuyl. The symbolic defect of an ideal, `arXiv:1610.00176`

Unpublished Papers.

2012 1. F. Galetto. Free resolutions of orbit closures for the representations associated to gradings on Lie algebras of type E_6, F_4 and G_2, `arXiv:1210.6410` (preprint of my doctoral dissertation; an excerpt of this paper was published in my 2014 article "Computational methods for orbit closures in a representation with finitely many orbits")

Expository Papers.

2018 1. F. Galetto. Betti numbers with a dash of representations. *Canadian Mathematical Society Notes*, 50(1):16, 2018.

Dissertations and Theses.

2013 *Free resolutions of orbit closures for representations with finitely many orbits*, Ph.D. Thesis, Northeastern University, supervised by J. Weyman

2008 *Metodi omologici con applicazioni alla teoria degli anelli locali*, Tesi di Laurea Magistrale, Università degli Studi di Torino, supervised by M. Roggero

2005 *Curve ellittiche*, Tesi di Laurea, Università degli Studi di Torino, supervised by M. Roggero

Invited Talks.

2018 Dec *Betti numbers of symbolic powers of star configurations*, CMS Meeting, Scientific Session on Symbolic and Regular Powers of Ideals, Vancouver, BC

Mar *Towards Newton-Okounkov bodies of Hessenberg varieties*, AMS Sectional Meeting, Special Session on Convex Bodies in Algebraic Geometry and Representation Theory, Ohio State University

	Mar	*The symbolic defect of an ideal*, AMS Sectional Meeting, Special Session on Commutative and Combinatorial Algebra, Ohio State University
2017	Dec	*Distinguishing k-configurations*, CMS Meeting, Scientific Session on Applications of Combinatorial Topology in Commutative Algebra, Waterloo, ON
	Oct	*Distinguishing k-configurations*, Mathematics Colloquium, Dalhousie University
	Apr	*Towards Newton-Okounkov bodies of Hessenberg varieties*, AMS Sectional Meeting, Special Session on Combinatorial and Computational Commutative Algebra and Algebraic Geometry, Washington State University
2016	Sep	*Equivariant resolutions of De Concini-Procesi ideals*, AMS Sectional Meeting, Special Session on Combinatorial Aspects of Nilpotent Orbits, Bowdoin College
	May	*Symmetric complete intersections*, Algebra & Geometry Seminar, Università degli Studi di Genova
	Apr	*Symmetric complete intersections*, AMS Sectional Meeting, Special Session on Commutative Algebra and Its Interactions with Combinatorics and Algebraic Geometry, North Dakota State University
	Apr	*Equivariant resolutions of De Concini-Procesi ideals*, Algebra Seminar, University of Nebraska - Lincoln
	Apr	*An introduction to equivariant free resolutions*, Algebra Seminar, University of Nebraska - Lincoln
	Mar	*Symmetric complete intersections*, AMS Sectional Meeting, Special Session on Combinatorial and Computational Algebra, University of Georgia
2015	Oct	*Tangent schemes of determinantal varieties*, Geometry & Topology Seminar, McMaster University
	Jan	*On a family of equivariant resolutions*, Joint Mathematics Meetings, Special Session on Syzygies, San Antonio, TX
2014	Dec	*Equivariant resolutions of De Concini-Procesi ideals*, Welcome Home Workshop, Università degli Studi di Torino
	Nov	*Equivariant resolutions of De Concini-Procesi ideals*, Geometric Methods in Representation Theory, University of Iowa
	Oct	*Equivariant resolutions of De Concini-Procesi ideals*, AMS Sectional Meeting, Special Session on Commutative Algebra and Its Interactions with Algebraic Geometry, Dalhousie University
	Aug	*An algorithm for determining actions of semisimple Lie groups on free resolutions*, Applications of Computer Algebra, Fordham University
	Jan	*An algorithm for determining actions of semisimple Lie groups on free resolutions*, Department Colloquium, Queen's University
2013	Sep	*Free resolutions and representations with finitely many orbits*, Algebraic Geometric Seminar, Queen's University
	Feb	*Representations with finitely many orbits and free resolutions*, Representation Theory, Homological Algebra, and Free Resolutions, MSRI
	Jan	*Representations with finitely many orbits and free resolutions*, Geometry Seminar, Texas A&M University
2012	Nov	*Representations with finitely many orbits and free resolutions*, Commutative Algebra & Algebraic Geometry Seminar, City University of New York, Graduate Center
	Nov	*Representations with finitely many orbits and free resolutions*, Geometric Methods in Representation Theory, University of Missouri, Columbia
2011	Dec	*Risoluzioni libere di ideali determinantali*, Welcome Home Workshop, Università degli Studi di Torino

Conference and Seminar Talks.

2017	Oct	*Equivariant resolutions of De Concini-Procesi ideals*, Dalhousie University
	Sep	*Distinguishing k-configurations*, Algebra Seminar, McMaster University
	Mar	*Regular sequences and symmetric group actions*, Algebra Seminar, McMaster University
2016	Oct	*Geometric technique for syzygies*, Thematic Program on Combinatorial Algebraic Geometry, Fields Institute
	Oct	*An example of an equivariant free resolution of a monomial ideal*, Thematic Program on Combinatorial Algebraic Geometry, Fields Institute
2015	Nov	*An overview of Boij-Soederberg theory*, Algebra Seminar, McMaster University
2014	Nov	*Equivariant resolutions of De Concini-Procesi ideals*, Algebra Seminar, Loyola University Chicago
	Jan	*An algorithm for determining actions of semisimple Lie groups on free resolutions*, Combinatorial Algebra meets Algebraic Combinatorics, Dalhousie University
2012	Nov	*Representations with finitely many orbits and free resolutions*, Cornell Workshop on Syzygies, Cornell University
	Feb	*Algorithms for irreducible decomposition of monomial ideals*, Graduate Student Seminar, Northeastern University
	Feb	*Equivariant criteria for exactness and reducedness*, Quivers and Invariant Theory Seminar, Northeastern University
	Jan	*Free resolutions of orbit closures for representations with finitely many orbits*, Combinatorial Algebra meets Algebraic Combinatorics, Université du Québec à Montréal
2011	Sep	*Free resolutions of orbit closures for representations with finitely many orbits*, Route 81, Cornell University
	Apr	*Orbit closures for the representations associated to graded Lie algebras: an interactive approach*, Maurice Auslander International Conference, Woods Hole Marine Biology Laboratory
	Feb	*Generalized Tanisaki Ideals and the Cohomology of Hessenberg Varieties*, Graduate Student Seminar, Northeastern University
2009	Dec	*Grassmannians and Cluster Algebras*, Topics in Representation Theory, Northeastern University
	May	*An Introduction to Hodge Algebras*, Tapas Seminar, Northeastern University

Conference Attendance.

2018	Sep	Route 81, Syracuse University
	Jun	Combinatorial Algebraic Geometry Retrospective Workshop, Fields Institute
	Jun	Graduate Summer School in Algebraic Group Actions, McMaster University
	Apr	Macaulay2 Workshop at Wisconsin, University of Wisconsin - Madison
	Jan	Combinatorial Algebra meets Algebraic Combinatorics, McMaster University
	Jan	Joint Mathematics Meetings, San Diego, CA
2017	May	Ordinary and Symbolic Powers of Ideals, BIRS-CMO
	Jan	Joint Mathematics Meetings, Atlanta, GA
2016	Dec	CMS Meeting, Scientific Session on Recent Advances in Commutative Algebra, Niagara Falls, ON
	Fall	Thematic Program on Combinatorial Algebraic Geometry, Fields Institute
	Apr	Free Resolutions, Representations, and Asymptotic Algebra, BIRS
	Jan	Combinatorial Algebra meets Algebraic Combinatorics, University of Western Ontario
2015	Oct	Route 81, Queen's University
	Oct	AMS Sectional Meeting, Loyola University Chicago

	Jan	Combinatorial Algebra meets Algebraic Combinatorics, Queen's University
2014	Nov	Symbolic and Numerical Methods for Tensors and Representation Theory, Simons Institute, University of California Berkeley
	Jun	Macaulay2 Research Meeting and School, University of Illinois at Urbana-Champaign
2013	Nov	Route 81, Syracuse University
	May	Maurice Auslander International Conference, Woods Hole Oceanographic Institute
	Jan	Joint Mathematics Meetings, San Diego, CA
2012	Aug	Macaulay2 Developer's Workshop, Wake Forest University
	Jun	MRC: Geometry and Representation Theory Related to Geometric Complexity and Other Variants of P v. NP, Snowbird, UT
	May	PASI: Commutative Algebra and Its Interactions with Algebraic Geometry, Representation Theory, and Physics, CIMAT
	Apr	Maurice Auslander International Conference, Woods Hole Oceanographic Institute
	Apr	Interactions between Commutative Algebra and Representation Theory, Syracuse University
2011	Nov	Commutative Algebra and Algebraic Geometry Conference, University of Illinois at Urbana-Champaign
	Jun	Commutative Algebra Summer Graduate School, MSRI
	May	Geometry of Orbit Closures, Università degli Studi di Roma "Tor Vergata"
2006	Aug	Scuola Matematica Interuniversitaria, Università degli Studi di Perugia

Teaching Experience.

Year	Term	Course No.	Title	Enrolled	Institution
2017-18	Winter	MATH 3V03	Graph Theory	48	McMaster
	Winter	MATH 1AA3	Calculus for Science II (joint with 1ZB3)	55	McMaster
	Winter	MATH 1ZB3	Engineering Mathematics II-A	82	McMaster
	Fall	MATH 3B03	Geometry	26	McMaster
2016-17	Summer	MATH 2R03	Linear Algebra II	46	McMaster
	Winter	MATH 702	Algebra II (graduate)	10	McMaster
2015-16	Summer	MATH 2R03	Linear Algebra II	55	McMaster
	Fall	MATH 1A03	Calculus for Science I	206	McMaster
2014-15	Winter	MATH 281	Introduction to Real Analysis	110	Queen's
	Winter	APSC 171-900	Calculus I	63	Queen's
2013-14	Winter	MATH 281	Introduction to Real Analysis	108	Queen's
	Fall	APSC 171	Calculus I	233	Queen's
2012-13	Spring	MATH 1215	Mathematical Thinking	38	NEU
	Fall	MATH 1215	Mathematical Thinking	23	NEU
2011-12	Spring	MATH 1215	Mathematical Thinking	32	NEU
	Fall	MATH 1215	Mathematical Thinking	47	NEU
2010-11	Summer II	MATH 1215	Mathematical Thinking	23	NEU
	Fall	MATH 1341	Calculus I for Sci/Engr	20	NEU
2009-10	Summer I	MATH 1215	Mathematical Thinking	15	NEU
	Spring	MATH 1341	Calculus I for Sci/Engr	21	NEU
	Fall	MATH 1341	Calculus I for Sci/Engr	30	NEU
2008-09	Spring	MTH U241	Calculus I for Sci/Engr	28	NEU
	Fall	MTH U241	Calculus I for Sci/Engr	25	NEU
2007-08	Summer I	MTH U131	Calculus for Business and Economics	23	NEU
	Spring	MTH U241	Calculus I for Sci/Engr	28	NEU

Fall	MTH U341	Calculus III for Sci/Engr (Recitations)	N/A	NEU

Refereeing.

2017	Journal of Symbolic Computation
2016	Proceedings of the American Mathematical Society
2012 - 2017	Journal of Software for Algebra and Geometry (x2)

Service.

2016	Co-organizer (with S. Faridi and A. Van Tuyl) of the Scientific Session on Recent Advances in Commutative Algebra at the 2016 CMS Winter Meeting in Niagara Falls, ON
2015 - present	Member of the American Mathematical Society
2012 - 2013	Mathematics Graduate Student Association, Northeastern University
2012 - 2013	Teaching Committee, Department of Mathematics, Northeastern University

Professional Development.

2017	H.E.A.R.T. (Human rights, Equity, Accessibility, Respect Toolkit) Workshop Series, McMaster University
2013 - 2015	Positive Space Program, Queen's University

References.

1. A. Ableson (teaching), ableson@queensu.ca, Department of Mathematics and Statistics, Queen's University, Kingston, ON, K7L 3N6, Canada
2. A. Childs (teaching), childsa@mcmaster.ca, Department of Mathematics and Statistics, McMaster University, Hamilton, ON, L8S 4K1, Canada
3. M. Harada, megumi.harada@math.mcmaster.ca, Department of Mathematics and Statistics, McMaster University, Hamilton, ON, L8S 4K1, Canada
4. G.G. Smith, ggsmith@mast.queensu.ca, Department of Mathematics and Statistics, Queen's University, Kingston, ON, K7L 3N6, Canada
5. A. Van Tuyl, vantuyl@math.mcmaster.ca, Department of Mathematics and Statistics, McMaster University, Hamilton, ON, L8S 4K1, Canada
6. J. Weyman, jerzy.weyman@gmail.com, Department of Mathematics, University of Connecticut, Storrs, CT, 06269-3009, U.S.A.