

Curriculum Vitae

INFORMAZIONI PERSONALI

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FORMAZIONE TITOLI

Laurea in Matematica 1972, University of Palermo, Italy

Master of Sciences 1974, University of Chicago, Chicago, Il, USA

Ph. D. in Mathematics 1977, University of Chicago, Chicago, Il, USA

ATTIVITA' DIDATTICA

a.a. 2014-15, 2015-16, 2016-17. Corso di Laurea Magistrale in Matematica: Istituzioni di Algebra (I modulo: Teoria delle Algebre)

a.a. 2014-15, 2015-16, 2016-17. Corso di Laurea Magistrale in Matematica: Algebra Non Commutativa.

RICERCHE FINANZIATE

Coordinatore Nazionale dei seguenti Progetti di Ricerca di Interesse Nazionale

(PRIN) 1999-2000 "Algebre con identità polinomiali",

(PRIN) 2001-2002 "Algebre con identità polinomiali e metodi combinatori",

(PRIN) 2003-2004 "Identità polinomiali in algebre e metodi combinatori",

(PRIN) 2005-2006 "Algebre con identità polinomiali e metodi combinatori",

(PRIN) 2007-2009 "Identità polinomiali e metodi combinatori".

(FIRB) 2003-2006 Coordinatore Nazionale di un Progetto di Ricerca per la Ricerca di Base "Algebre con identità polinomiale".

PUBBLICAZIONE

Articles

- 1) A. Giambruno, Algebraic conditions on rings with involution, *J. Algebra*, 50 (1978), 190-212.
- 2) A. Giambruno, Periodic n -th commutators of traces in rings with involution, *Rend. Circ. Mat. Palermo (2)*, 27 (1978), 61-72.
- 3) A. Giambruno, Some generalizations of the center of a ring, *Rend. Circ. Mat. Palermo (2)*, 27 (1978), 270-282.
- 4) A. Giambruno, Un teorema su anelli con involuzione, *Boll. Un. Mat. It. (5)*, 16-A (1979), 625-629.
- 5) B. Felzenszwalb and A. Giambruno, Centralizers and multilinear polynomials in non-commutative rings, *J. London Math. Soc. (2)*, 19 (1979), 417-428.
- 6) A. Giambruno, Rings f -radical over PI-subrings, *Rend. Mat. (4)*, 13 (1980), 105-113.
- 7) B. Felzenszwalb and A. Giambruno, Periodic and nil polynomials in rings, *Canad. Math. Bull. (4)*, 23 (1980), 473-476.
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- 9) A. Giambruno and I. N. Herstein, Derivations with nilpotent values, *Rend. Circ. Mat. Palermo (2)*, 30 (1981), 199-206.
- 10) B. Felzenszwalb and A. Giambruno, A commutativity theorem for rings with derivations, *Pacific J. Math.*, 102 (1982), 41-45.
- 11) A. Giambruno, On the symmetric hypercenter of a ring, *Canad. J. Math.*, 34 (1984), 421-435.
- 12) B. Felzenszwalb and A. Giambruno, F -algebraic extensions of rings, *Arch. Math.*, 43 (1984), 124-131.
- 13) L. Carini and A. Giambruno, Lie ideals and nil derivations, *Boll. Un. Mat. It. (6)*, 4-A (1985), 497-503.
- 14) A. Giambruno and A. Regev, Wreath products and PI-algebras, *J. Pure Applied Algebra*, 35 (1985), 133-149.
- 15) A. Giambruno, P. Misso and C. Polcino Miles, Derivations with invertible values in rings with involution, *Pacific J. Math.*, 123 (1986), 47-54.
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- 17) A. Giambruno, Rappresentazioni di gruppi simmetrici ed identità polinomiali, *Rend. Sem. Mat. Univ. Milano*, 56 (1986), 13-22.
- 18) A. Giambruno and J. Bergen, f -radical extensions of rings, *Rend. Sem. Mat. Univ. Padova*, 77 (1987), 125-133.
- 19) A. Giambruno, Polynomial identities with involution and the hyperoctahedral group, *Group Theory*, O. H. Kegel, F. Menegazzo and G. Zacher eds., Springer-Verlag, 1987, 18-25.

- 20) O. M. Di Vincenzo and A. Giambruno, Modular representation theory and PI-algebras, *Comm. Algebra*, 16 (1988), 2043-2067.
- 21) A. Giambruno and S. K. Sehgal, A Lie property in group rings, *Proc. Amer. Math. Soc.*, 105 (1989), 287-292.
- 22) A. Giambruno and A. Valenti, Nil $*$ -polynomials in rings, *Linear and Multilinear Algebra*, 24 (1989), 127-134.
- 23) A. Giambruno and S. K. Sehgal, On a polynomial identity for $n \times n$ matrices, *J. Algebra*, 126 (1989), 451-453.
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- 28) A. Giambruno and S. K. Sehgal, Lie nilpotence of group rings, *Comm. Algebra*, 21 (1993), 4253-4261.
- 29) Y. Bahturin and A. Giambruno, Identities of sums of commutative subalgebras, *Rend. Circ. Mat. Palermo*, 43 (1994), 250-258.
- 30) A. Giambruno, J. Z. Goncalves and A. Mandel, Rings with algebraic n -Engel elements, *Comm. Algebra*, 22 (1994), 1685-1701.
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- 32) A. Giambruno, E. Jespers and A. Valenti, Group identities on units of rings, *Arch. Math.*, 63 (1994), 291-296.
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- 34) V. Drensky and A. Giambruno, On the $*$ -polynomial identities of minimal degree for matrices with involution, *Boll. Un. Mat. It. (7)*, 9-A (1995), 471-482.
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- 41) A. Giambruno, Polinomi centrali ed invarianti matriciali, *Atti Acad. Sci. Lett. Arti Palermo*, (5) 17, (1996-97), 117-126.
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- 43) A. Giambruno, On permutations of class sums of alternating groups, *Comm. Algebra* 25 (1997), 2327-2331.
- 44) Y. Bahturin, - A. Giambruno and M. Zaicev, Symmetric identities in graded algebras, *Arch. Math.* 69 (1997), 461-464.
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- 65) A. Giambruno and S. Mishchenko and M. Zaicev, Polynomial identities on superalgebras and almost polynomial growth, *Comm. Algebra*, 29 (2001), [3787-3800](#).
- 66) A. Giambruno and S. Mishchenko and M. Zaicev, Group actions and asymptotic behaviour of graded polynomial identities, *J. London Math. Soc.* (2) 66 (2002), 295-312.
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- 95) A. Giambruno and S. Mishchenko, Super-cocharacters, star-cocharacters and multiplicities bounded by one, *Manuscripta Math.* 128 (2009), 483-504.
- 96) Giambruno, S. Mishchenko and M. Zaicev, Polynomial identities of algebras of small dimension, *Comm Algebra* 37 (2009), 1934-1948.
- 97) A. Giambruno, C. Polcino Milies and S. K. Sehgal, Group identities on symmetric units, *J. Algebra* 322 (2009), no. 8, 2801-2815.
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- 101) A. Giambruno and D. La Mattina, Graded polynomial identities and codimensions: computing the exponential growth, *Adv. Math* 225 (2010), 859-881.
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- 112) A. Giambruno and M. da Silva Souza, Graded polynomial identities and Specht property of the Lie algebra sl_2 , *J. Algebra* 389 (2013), 6–22.
- 113) E. Aljadeff and A. Giambruno, Multialternating graded polynomials and growth of polynomial identities, *Proc. Amer. Math. Soc.* 141 (2013), no. 9, 3055–3065.
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- 119) A. Giambruno and M. Zaicev, Asymptotic growth of codimensions sequences of identities of associative algebras, *Moscow Univ. Math. Bull.* 69 (2104), 125-127.
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- 125) A. Giambruno, A. Ioppolo and F. Martino, Standard polynomials and matrices with superinvolutions, *Linear Algebra Appl.* 504 (2016), 272–291.
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- 127) A. Giambruno, C. Polcino Milies and A. Valenti, Star-polynomial identities: computing the exponential growth of the codimensions, *J. Algebra* 469 (2017), 302–322.
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- 130) A. Giambruno, C. Polcino Milies and S. K. Sehgal, Star-group identities on units of group algebras: The non-torsion case, *Forum Math.* 30 (2018) no. 1, 213–225.
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- 133) A. Giambruno and M. Zaicev, Central polynomials and growth functions, *Israel J. Math.* 226 (2018), no. 1, 15–28.

Books

- 1) A. Giambruno ed., “Recent developments in the theory of algebras with polynomial identities”, *Suppl. Rend. Circ. Mat. Palermo II* Vol. 31, 1993.
- 2) V. Drensky, A. Giambruno and S. K. Sehgal eds., “Methods in Ring Theory”, *Lecture Notes in Pure and Applied Mathematics* Vol. 198, Marcel Dekker, New York, 1998.

~~Pure and Applied Mathematics, Vol. 235, Marcel Dekker, New York, 2008.~~

4) A. Giambruno and M. Zaicev, "Polynomial Identities and Asymptotic Methods", Mathematical Surveys and Monographs Vol. 122, American Mathematical Society, Providence R.I., 2005.

5) A. Giambruno, C. Polcino Milies and S. K. Sehgal eds., "Groups, Rings and Group Rings", Lecture Notes in Pure and Applied Mathematics, Vol. 248, Taylor and Francis, New York, 2006.

6) A. Giambruno, C. Polcino Milies and S. K. Sehgal eds., "Groups, Rings and Group Rings". Contemporary Mathematics, Vol. 499, American Mathematical Society, Providence, R.I., 2009.

ATTIVITA' SCIENTIFICHE

Soggiorni di ricerca presso le seguenti università ed istituzioni scientifiche: Brandeis University, University of Southern California, Pennsylvania State University, M.S.R.I. (USA), University of Alberta, Memorial University of Newfoundland (Canada), Federal University of Rio de Janeiro, University of San Paulo (Brasile), Technion, Weizmann Institute of Science (Israele), Panjab University, India.

E' stato conferenziere invitato in diverse università in Italia, USA, Canada, Brasile, Belgio, Irlanda, Israele, Russia, Spagna.

ed in congressi internazionali tra cui (dal 1997):

Group Rings and Representations, Kananaskis, Canada Feb. 1997 (main speaker).

International Algebraic Conference in honor of Kurosh, Moscow, Russia, June 1998 (main speaker).

Escola de Algebra, Canela, Brazil, July 1998.

Algebra by FNRS, Universite de Mons-Hainaut, Belgium, Feb. 1999 (main speaker).

Meeting on Combinatorics in honor of Gian-Carlo Rota, Maratea, Italy, Sept. 1999 (main speaker).

Combinatorial algebra, MSRI, Berkeley, USA, Jan. 2000.

Combinatorial methods in PI-theory, Pantelleria, Italy, Sept. 2001.

Group Rings, Jasper, Alberta, Canada, Feb. 2002 (main speaker).

Algebras with polynomial identities, St. John's, Canada (main speaker).

Algebraic Geometry, Algebra and Applications, Borovetz, Bulgaria, Sept. 2003 (main speaker).

International Algebraic Conference, Moscow, Russia, June 2004 (main speaker).

Escola de Algebra, Campinas, Brazil, July 2004 (main speaker).

Groups, Rings and Group Rings, Ubatuba, Brazil, August 2004 (main speaker)

International Conference in Algebra, Tainan, Taiwan, March 2005.

XVII Coloquio Latinoamericano de Algebra, Medellín, Colombia, July 2007 (main speaker).

International Conference on algebraic and combinatorial methods in concrete classes of algebras and groups, Alden-Biesen Belgium, Sept. 2007 (main speaker).

59th Séminaire Lotharingien de Combinatoire joint with XIV Incontro Italiano di Combinatoria Algebrica, Bertinoro, Italy, Sept. 2007 (main speaker).

14th Amitsur Symposium, Technion, Haifa Israel, July 2008 (main speaker).

Groups, Rings and Group Rings, Ubatuba, Brazil, July 2008 (main speaker)

XVIII Latin American Algebra Colloquium, San Pedro, Brazil, Aug. 2009 (main speaker).

Groups, Rings, Algebras and Applications, Ubatuba, Brazil, July 2010 (main speaker).

Groups, Rings and Group Rings, Edmonton, Canada, July 2011 (main speaker).

Polynomial Identities in Algebras. II, St. John's Canada, September 2011 (main speaker).

Escola de Algebra, Salvador, Brazil, July 2012 (main speaker).

Lie and Jordan Algebras, their Representations and Applications V, Belem, Brazil, July 2012 (main speaker)

Groups, Rings and Group Rings, Ubatuba, Brazil, August 2012 (main speaker)

Advances in Group Theory and Applications, Porto Cesareo, Italy, June 2013 (main speaker)

Groups, Rings and Group Rings 2014, Ubatuba, Brazil, July 2014 (main speaker)

Groups and Rings, Theory and Applications, GRiTA 2015, Sofia, Bulgaria July 2015 (main speaker)

Brazilian Algebra Meeting, Diamantina, Brasile, July 2016 (main speaker).

22nd Amitsur Memorial Symposium, Haifa, Israele, June 2016 (main speaker).

AMBITI DI RICERCA

Gli interessi di ricerca sono principalmente in algebra associativa, algebra lineare e multilineare, teoria dei gruppi, algebre di Lie e di Jordan. Le aree primarie di ricerca sono: identità polinomiali, rappresentazioni dei gruppi simmetrici e lineari, algebre gruppali, crescita delle algebre, teoria degli invarianti delle matrici, combinatoria algebrica.