

CURRICULUM VITAE

Name: Paola D'Aquino

Positions:

November 2017-today full professor at Dipartimento di Matematica e Fisica, Università della Campania – “L. Vanvitelli”

March 2002 – October 2017 associate professor at Dipartimento di Matematica e Fisica, Seconda Università di Napoli

January 1996 –February 2002 researcher at Dipartimento di Matematica, Seconda Università di Napoli

Education:

- Ph.D. in Mathematics at University of Oxford
- Master in Mathematical Logic (2 years) at Università di Siena
- Laurea in Mathematics at Università di Siena

Visiting positions awarded:

- MSRI, Berkeley, USA during the semester *Decidability, definability and computability in number theory* for six weeks from August 17 to December 18, 2020 (online due to Covid)
- UFR Mathématiques – Université Paris Diderot from 10 January to 10 February 2019
- MSRI, Berkeley, USA, two months in 2014, during the semester *Model Theory, Arithmetic Geometry and Number Theory*.
- ICMS (International Center for Mathematical Sciences), Edinburgh, UK, one month 2013
- DAAD at University of Konstanz, Germany, one month in 2012
- Notre Dame University, USA, one month in 2011
- Notre Dame University, USA, one month in 2009
- Hausdorff Research Institute in Bonn, Germany, one month 2009
- Newton Institute di Cambridge, UK one month 2005 during the semester *Model Theory and Applications to Algebra and Analysis*
- Notre Dame University, USA, one month in 2003
- Notre Dame University, USA one month 2002

Grants:

- CNR grant at Mathematical Institute, Oxford University for 6 months 1997/ 1998
- post-doc at Università di Roma “La Sapienza” for one year 1995
- INDAM grant at Università di Siena for two years 1993 - 1994
- CNR grant at Mathematical Institute, Oxford University for three years 1990 - 1992

Projects:

European grant INTAS 2000-447 2001 – 2003 (local coordinator)

PRIN 1997, Geometrie d'incidenza, grafi e geometrie di Galois (partecipant)

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PRIN 2001, Geometrie d'incidenza, grafi e geometrie di Galois (partecipant)

PRIN 2003, Geometrie d'incidenza, grafi e geometrie di Galois (partecipant)

PRIN 2005, Geometrie finite e geometrie d'incidenza (partecipant)

PRIN 2009, Teoria dei modelli e algebra (partecipant)

PRIN 2012, Logica, modelli e insiemi (partecipant)

PRIN 2017, Mathematical Logic: models, sets, computability (local coordinator)

VALERE 2019 (progetti intra-Ateneo, Università della Campania “L. Vanvitelli”), Groups: overlappings between Algebra, Geometry, Mathematical logic and Mathematics Education (partecipant)

Committees:

(conferences)

- Member of Scientific committee of XXVII Incontro AILA, Caserta September 2020 (postponed due to Covid)
- Member of Scientific committee of Model Theory and Applications 2020, Cetraro, June 2020 (postponed due to Covid)
- Member of Scientific committee of Special session in Mathematical Logic at Congresso Unione Matematica Italiana, Pavia, September 2019
- Member of Scientific committee of Special session in Mathematical Logic at *1st Joint Meeting Brazil-Italy in Mathematics*, Rio de Janeiro (Brasil), August 2016
- Member of Scientific committee *Recent developments in the applications of model theory to algebraic, analytic and diophantine geometry*, ICMS Edinburgh, 2014.

- Member of Scientific committee Model theory 2013, Ravello June 2013
- Member of Scientific committee *Model theory Days*, Seconda Università di Napoli, Caserta 2012
- Member of Scientific committee *Model theory Days*, University of Konstanz, December 2012
- Chair of the Programme Committee of *Logic Colloquium 2012*, Manchester, 2012.
- Member of Scientific committee Journées sur les Arithmétiques Faibles XXII, Napoli, 2004.
- Member of Scientific committee *Euroconference in Model Theory and Applications*, Ravello 2002.
- Member of Scientific committee "*DAYS ON WEAK ARITHMETIC, XX*" S.t Petersburg, 2002

(Associations)

- Member of the Executive Committee of the Association for Symbolic Logic since 1/01/2020
- Member of the Executive Committee of the Italian Association for Logica and Applications (AILA) since September 2017

Editorial activity:

- editor of The Bulletin of Symbolic Logic since January 2017
 - co-editor of "Model theory and Applications", Quaderni di Matematica vol. 11 (2003), Seconda Università di Napoli
 - co-editor dei Proceedings Logic Colloquium 2012, in Annals of Pure and Applied Logic, 167 (10), 2016.
 - editor of the series Quaderni di Matematica published by Seconda Università di Napoli, from 2000 to today
- Referee for Archive for Mathematical Logic, Communications in Algebra, Notre Dame Journal of Formal Logic, Journal of Symbolic Logic, Fundamenta Mathematicae, Journal of Logic and Computation, Annals of Pure and Applied Logic, Studia Logica, Review of Symbolic Logic, NSF

Invited speaker in conferences:

- at Connections for Women: Decidability, definability and computability in number theory, MSRI, August 2020 (cancelled due to Covid)
- "Zero sets of exponential polynomials", Applications of the model theory of fields with operators, Manchester, UK, 17-20 June 2019
- "Generic solutions of equations with iterated exponentials, Pure and Applied Model Theory Conference, 25 – 28 October 2018, Chicago, US
- "Campi differenzialmente chiusi", Accademia delle Scienze, 16 ottobre 2018, Torino, Italy.
- "Complex exponential field", Plenary speaker at Logic Colloquium 2018, 23 – 28 July 2018, Udine, Italy.
- "Spectrum of \mathbf{Z}^{\wedge} and finite adeles over \mathbf{Q} ", Around Functional Transcendence, 26 – 29 June 2018, Oxford, UK.
- "Zero sets of exponential polynomials", Model Theory and Applications to Geometry, September 2017, Padova.
- "Roots of exponential polynomials", Model theory and Applications, January 2017, Mons, Belgium
- "Real closed fields, models of Peano Arithmetic and recursive saturation" tutorial (3 ore) at 10th Panhellenic Logic Symposium, 11-15 giugno 2015, Samos (Greece)
- "Roots of exponential polynomials", conference in honor of prof. C. Dimitracopoulos, 3 October 2014 Athens (Greece)
- "Recursive saturation: a valuation theoretic approach", special session in Model Theory at Joint Meeting UMI-SIMAI-RSME-SCM-SEMA, Bilbao, Spain, July, 2014
- "Recursive saturation: a valuation theoretic approach", 33rd meeting of Journées sur les Arithmétiques Faibles, University of Gothenburg, Sweden, June 2014
- "Exponential polynomials", Postgraduate Model Theory Meeting, University of Leeds, UK, January 2014
- "Recursively saturated real closed fields", Model Theory and Proof Theory of Arithmetic, Bedlewo, Poland, 2012
- "Integer parts of real closed fields", Journées sur les Arithmétiques Faibles 31, Samos, Greece, 2012
- "Exponential polynomials over Zilber's fields", Antalya Algebra Days, Cesme, Turchia, 2012
- "Exponential polynomials over algebraically closed fields", in Definability in Arithmetic, Ghent University, Belgium, 29 August-4 September 2010.
- "Exponential polynomials", in Methods of Logic in Mathematics, at Euler International Mathematical Institute, Steklov Mathematical Institute, St. Petersburg, Russia, 2008.
- "Consequences of Schanuel's conjecture in exponential algebra", in Model Theory and Algebra Meeting, Università di Camerino, 2007
- "Schanuel's conjecture and exponential rings", in Joint International Meeting UMI-DMV, Special session in Model Theory, Perugia, 2007
- "Forme quadratiche su modelli dell'aritmetica limitata", in Teoria dei modelli e teoria degli insieme, Università di Torino, 2007
- "Strong initial segments of models of Δ_0 ", in Journées sur les Arithmétiques Faibles 25, Clermont-Ferrand, France, 2006

- “Quadratic reciprocity law in weak fragments of PA”, in Joint Benelux Mathematical Meeting, Ghent Belgium, 2005
- “Hilbert 10th Problem in weak fragments of Peano Arithmetic”, in Hilbert 10th Problem, American Mathematical Institute, Palo Alto, USA, 2005
- “Quadratic forms over weak fragments of arithmetic”, in Nonstandard models of Arithmetic and Analysis, Pisa, 2004
- “Primes in weak fragments of Arithmetic”, in Logic Colloquium 2001, ASL Summer Meeting, Model theory session, Vienna, Austria 200
- “Around quadratic reciprocity law”, in Alfred Tarski Centenary Conference, Warsaw Poland, 2001
- “Around quadratic reciprocity law”, in Journées sur l’Arithmétique Faible 19, Clermont-Ferrand, France, 2000
- “Classical arithmetic in weak fragments”, ASL Annual Meeting, Urbana-Champaign, USA, 2000
- “Non standard residue fields of models of $\mathcal{I}\Delta_0+\Omega_1$ ”, in Arithmétique Faible, Mons, Belgium 1997
- “Exponentiation and Pell equations over weak fragments of arithmetic”, in MidAtlantic Meeting in Logic, Lafayette College, Pennsylvania, USA, 1996
- “Some classical number theory in fragments of arithmetic”, in Foundation of Arithmetic, Banach Center, Warsaw, Poland, April 1996
- “A sharpened version of McAloon theorem”, Utrecht Symposium on Provability, Interpretability and Arithmetic, Utrecht – Holland, 1991

Seminars

- “Spectrum of the profinite completion of the integers”, University of Manchester, UK, March 2019
- “Ultraproducts and $\text{Spec}(\widehat{\mathbb{Z}})$ ”, Université de Lyon 1, Lyon, France, May 2017
- “Ultraproducts and $\text{Spec}(\widehat{\mathbb{Z}})$ ”, University of Oxford, UK, April 2017
- “Exponential polynomials and Zilber’s fields”, Universidad de Buenos Aires, Argentina, August 2016
- “Quotient fields of models of fragments of Arithmetic”, University of Konstanz, Germany, June 2015
- “Generic solutions of exponential polynomials”, University of Konstanz, Germany, January 2015
- “Roots of exponential polynomials”, MSRI, UC Berkeley, USA, February 2014
- “Exponential polynomials”, series of lectures (5 hours) at Universidad Autonoma di Madrid, Spain, Aprile 2014
- “Exponential polynomials over Zilber’s fields”, University of Athens, Greece, May 2012
- “Factorization of exponential polynomials”, Notre Dame University, USA, February 2011
- “Exponential polynomials”, Universidad de Sevilla, Spain, May 2011
- “Exponential polynomials”, Universitaat Konstanz, Germany, October 2010
- “Integer parts of real closed fields”, Université de Mons, Belgium, September 2010
- “Exponential polynomials”, Université de Mons, Belgium, September 2010
- “Fragments of Peano Arithmetic: Open Induction”, Université Claude Bernard, Lyon 1, May 2010
- “Exponential polynomials over Zilber fields”, Università Paris VII, France, December 2008
- “Around quadratic reciprocity law in weak fragments of PA”, Universidade Lisbon, Portugal, February 2007
- “Forme quadratiche su sottoteorie deboli dell’Aritmetica”, Università di Camerino, March 2006
- “Quadratic forms over weak fragments of Arithmetic”, Newton Institute, Cambridge, UK February 2005
- “Primes in bounded arithmetic”, Notre Dame University, USA May 2004
- “Quadratic forms over bounded arithmetic”, Wesleyan University, USA May 2004
- “Weak fragments of Peano Arithmetic”, University of Athens, Greece, May 2003
- “Around quadratic reciprocity law in weak arithmetic”, Department of Mathematics, University of Illinois of Chicago, February 2003.
- “Campi finiti non standard di modelli di $\mathcal{I}\Delta_0+\Omega_1$ ”, Dipartimento di Matematica, Università di Trento, October 1998
- “Quozienti di modelli non standard di $\mathcal{I}\Delta_0+\Omega_1$ ”, Dipartimento di Matematica, Università di Roma “La Sapienza” April 1998
- “Non standard residue fields of models of $\mathcal{I}\Delta_0+\Omega_1$ ”, Department of Mathematics, Leeds University, February 1998
- “Non standard residue fields of models of $\mathcal{I}\Delta_0+\Omega_1$ ”, Mathematical Institute, Oxford University, December 1997
- “Pell equations over weak fragments of arithmetic”, Department of Mathematics, City University of New York, USA, December 1996
- “On the Tennenbaum phenomenon”, Department of Mathematics, Wesleyan University, USA, October 1996
- “Sottoteorie deboli dell’Aritmetica di Peano e teoria della complessità”, Facoltà di Scienze, Università di Verona, maggio 1995
- “Equazioni di Pell in sottoteorie dell’Aritmetica di Peano”, Dipartimento di Matematica, Università di Roma “La Sapienza”, marzo 1996
- “Definitions of exponentiation in Arithmetic”, Mathematical Institute, Oxford University, dicembre 1992
- “Definitions of exponentiation in Arithmetic”, Department of Mathematics, QMW College, London, UK, November 1992
- “Exponentiation and Pell equations in models of $\mathcal{I}\Delta_0$ ”, Department of Mathematics, University of California at Irvine, Irvine, USA, February 1992
- “A sharpened version of McAloon theorem on initial segments of models of $\mathcal{I}\Delta_0$ ”, Department of Mathematics, University of Illinois at Chicago, USA, novembre 1991

- “Il teorema di Chebyshev in modelli non standard di IA_0 ”, Dipartimento di Matematica, Università di Trento, October 1990

Teaching:

Undergraduate

- Mathematical Logic, at Università degli Studi di Napoli “Federico II”, (2014/2015, 2015/2016, 2016/2017, 2017/2018, 2019/2020)
- Commutative Algebra, at Università della Campania “L. Vanvitelli”, since 2017/2018
- Advanced algebra, Seconda Università di Napoli (2013/2014, 2014/2015, 2015/2016, 2016/2017)
- Galois Theory, Seconda Università di Napoli, (2014/2015, 2015/2016 e 2016/2017, 2018/2019)
- Mathematical Logic, Seconda Università di Napoli and Università della Campania “L. Vanvitelli”, (from 1998/1999 to today)
- Model Theory, at Seconda Università di Napoli and Università della Campania “L. Vanvitelli”, (from 2005/2006 to 2017/2018, 2019/2020)
- Algebra 2, Seconda Università di Napoli, (from 2002/2003 to 2013/2014)
- Algebra (classes) Seconda Università di Napoli (from 1996/1997 to 2001/2002)
- Calculus I, Università di Verona, (1993/1994 and 1994/1995)
- Instructor di Precalculus, University of California at Irvine, USA 1991/1992
- Instructor di Basic statistics, University of California at Irvine, USA 1991/1992
- Tutor of undergraduate dissertations at Seconda Università di Napoli, Università della Campania “L. Vanvitelli” and Università di Napoli “Federico II”.
- Organizer of undergraduate seminars at Seconda Università di Napoli and Università della Campania “L. Vanvitelli”

Graduate course:

- Weak fragments of Peano Arithmetic, graduate course, at Universidad de Concepción, January 2018
- Model Theory, Dottorato in Scienze Matematiche e Informatiche, Università di Napoli "Federico II", 2013/2014
- Model Theory, Summer School in Mathematica Logic, Gargnano August 2012
- Weak fragments of Peano Arithmetic, graduate course, at Notre Dame University, Autumn 2000
- Graduate course at 11th European Summer School in Logic, Language and Information, Utrecht 9-15 August 1999.
- Peano Arithmetic, Dottorato in Logica matematica dell' Università di Siena, February 1994

Graduate students

- Angela Borrata (Università della Campania “L. Vanvitelli”) 2nd year
- Anna De Mase (Università della Campania “L. Vanvitelli”) 1st year
- Martina Liccardo (Università di Napoli “Federico II”) 2nd year

Past Graduate students

G. Terzo
M. Bovenzi

Training School for Teachers:

- Instructor of Mathematical logic at SICSI, TFA, PAS (2004/2005, 2005/2006, 2006/2007 e 2007/2008 2008/2009, 2013/2014)
- Tutor of 3 dissertations of PAS.

Institutional duties:

- Coordinator of the Commission of Libraries of (first) Seconda Università di Napoli and (then) Università della Campania “L. Vanvitelli”
- Erasmus coordinator for the Department of Mathematics and Physics, Seconda Università di Napoli since 2002 and Università della Campania “L. Vanvitelli”.
- Scientific coordinator of the Library of the Department of Mathematics and Physics at (first) Seconda Università di Napoli and (then) Università della Campania “L. Vanvitelli”
- Member of the Commission for Quality of Teaching (2014 – 2019)

Publications

- [1] “Generic solutions of equations with iterated exponentials” (in collaborazione con A. Fornasiero and G. Terzo) in Transactions of the American Mathematical Society, 370, (2018), pp. 1393-1407.
- [2] “Model theory of some local rings” (in collaboration with A. Macintyre), in IfCoLog Journal of Logics and their Applications, vol 4, N. 4, (2017), College Publications, pp. 885-899.
- [3] “On the value group of a model of Peano Arithmetic”, (in collaborazione con M. Carl and S.Kuhlmann), in Forum Mathematicum, vol. 29, n. 4, (2017), pp. 951-958.
- [4] “A note on \aleph_{α} -saturated o-minimal expansions of real closed fields”, (in collaboration with S. Kuhlmann), in Algebra and Logic, vol. 54, n. 6, (2016), pp. 502-506
- [5] “Comparing \mathbb{C} and Zilber’s Exponential fields: zero sets of exponential polynomials” (in collaboration with A. Macintyre and G. Terzo) in Journal of the Institute of Mathematics Jussieu, vol. 15, (1), (2016), pp. 71-84
- [6] “A valuation theoretic characterization of recursively saturated real closed fields” (in collaboration with S. Kuhlmann and K. Lange), in The Journal of Symbolic Logic, 80, (2015), 194-206
- [7] “From Schanuel’s Conjecture to Shapiro’s Conjecture” (in collaboration with A. Macintyre and G. Terzo) in Commentarii Mathematici Helvetici, 89, (2014), pp. 597-616
- [8] “Primes in models of $\mathcal{I}\Delta_0+\Omega_1$ ”, (in collaboration with A. Macintyre), in Studies in Weak Arithmetic (Cégielski P, Cornaros C, Dimitracopoulos C.ed.) CSLI Publications, Journées sur les Arithmétiques Faibles 31, (2013), pp. 85-92
- [9] “Real closed exponential fields”, (in collaboration with J. Knight, S. Kuhlmann and K. Lange), in Fundamenta Mathematicae, 219, (2012), pp. 163-190.
- [10] “Limit computable integer part”, (in collaboration with J. Knight and K. Lange), in Archive of Mathematical Logic vol. 50, (2011), pp. 681-695.
- [11] “Quadratic forms over models of $\mathcal{I}\Delta_0+\Omega_1, \text{II}$ ”, (in collaboration with A. Macintyre), in Annals of Pure and Applied Logic. 162, (2011), 447-456.
- [12] “Schanuel Nullstellensatz for Zilber fields” (in collaboration with A. Macintyre and G. Terzo) in Fundamenta Mathematicae, 207, (2010), pp. 123-143.
- [13] “Real closed fields and models of Peano Arithmetic” (in collaboration with J. Knight and S. Starchenko), in The Journal of Symbolic Logic, vol.75, N. 1, pp. 1-11.
- [14] “A note on the decidability of exponential terms” (in collaboration with G. Terzo), in Mathematical Logic Quarterly, 53, N. 3 (2007), pp. 306-310.
- [15] “Strong initial segments of models of $\mathcal{I}\Delta_0$ ” (in collaboration with J. Knight) in Fundamenta Mathematicae, 195, N. 2, (2007), pp. 155-176.
- [16] “Quadratic forms over models of $\mathcal{I}\Delta_0+\Omega_1, \text{I}$ ”, (in collaboration with A. Macintyre), in Annals of Pure and Applied Logic, 148 (2007), pp.31-48
- [17] “Weak Fragments of Arithmetic”, in The Notre Dame Lectures, Association for Symbolic Logic 18, A K Peters, 2005, pp. 149-184.
- [18] “Coding in $\mathcal{I}\Delta_0$ ”, (in collaboration with J. Knight) in Contemporary Mathematics vol.361, (2004), pp. 23-36
- [19] “Quotient fields of models of $\mathcal{I}\Delta_0+\Omega_1$ ”, in Mathematical Logic Quarterly 47 (2001) 3, pp. 305-314.
- [20] “Non standard finite fields over $\mathcal{I}\Delta_0+\Omega_1$ ”, (in collaboration with A. Macintyre), Israel Journal of Mathematics 117 (2000), pp. 311-333
- [21] “Solving Pell equations locally in models of $\mathcal{I}\Delta_0$ ”, Journal of Symbolic Logic, vol 63, 1998, pp. 402-410
- [22] “Towards the limits to the Tennenbaum phenomenon”, Notre Dame Journal of Formal Logic, 38, 1997, pp. 81-92
- [23] “Pell equations and exponentiation in fragments of arithmetic”, Annals of Pure and Applied Logic 77, 1996, pp. 1-34
- [24] “ Δ_0 -complexity of the relation $y=\prod_{i<n}F(i)$ ”, (in collaboration with A. Berarducci) Annals of Pure and Applied Logic, 75, 1995, pp. 49-56
- [25] “A sharpened version of McAloon theorem”, Annals of Pure and Applied Logic 61, 1993, pp. 49-62
- [26] “Local behaviour of Chebyshev theorem in models of $\mathcal{I}\Delta_0$ ”, Journal of Symbolic Logic, vol 57, (1), 1992, pp. 12-27
- [27] “The structure of countable recursively saturated models”, in Bollettino Unione Matematici Italiani, (7), 5B, 1991, pp. 815-838
- [28] “Topological duality for diagonalizable algebras”, (joint with C. Bernardi) Notre Dame Journal of Formal Logic, vol. 29, (3) 1988, pp. 345-364
- [29] “A weak version of the strong exponential closure”, (joint with A. Fornasiero and G. Terzo) to appear in Israel Journal of Mathematics
- [30] “Truncations of ordered abelian groups”, (joint with J. Derakhshan and A. Macintyre) to appear in Algebra Universalis