

CURRICULUM VITAE

Martina Lanini

14 July, 2022

Dipartimento di Matematica
Università di Roma “Tor Vergata”,
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Education

Nov 2008 - Mar 2012	PhD position at the Dipartimento di Matematica, Università degli Studi di Roma Tre From October 2009: bi-nationally-supervised doctoral thesis project with the FAU Erlangen-Nürnberg, Germany Defense: 16 March 2012, Dipartimento di Matematica, Roma Tre Grade: Magna cum Laude Concentration: Representation Theory Thesis: Kazhdan-Lusztig combinatorics in the moment graph setting Advisors: Prof. Lucia Caporaso and Prof. Dr. Peter Fiebig
2006 - 2008	Laurea Specialistica at the Università degli Studi di Roma La Sapienza, Italy Grade: 110/110 cum laude Concentration: Representation Theory Thesis: Aspetti combinatorici delle Teoria di Kazhdan-Lusztig (= Combinatorics of Kazhdan-Lusztig Theory).
2003 - 2006	Laurea Triennale at the Università degli Studi di Roma La Sapienza, Italy Grade: 110/110
1998 - 2003	Liceo Ginnasio Statale Torquato Tasso, Rome, Italy Grade: 100/100

Academic Qualifications

May 2021	Abilitazione Scientifica Nazionale (Settore Concorsuale: 01/A2) from the Italian Ministry of Education, Universities and Research (MIUR) to become Full Professor
July 2017	Abilitazione Scientifica Nazionale (SSD MAT/02) from the Italian Ministry of Education, universities and research (MIUR) to become Associate Professor in Italy
Feb 2015	Qualification from the Conseil National des Universités (CNU) to become Maître de conférence in France (CNU Section 25: Mathématiques)

Research Interests

My research is on various aspects of representation theory (of algebraic groups, Kac-Moody algebras, quantum groups, Cherednik algebras, quivers) and its interaction with combinatorics (Kazhdan-Lusztig polynomials, Schubert Calculus, moment graphs) and geometry (perverse sheaves and parity sheaves, degenerate flag varieties, semi-infinite flag varieties, quiver Grassmannians, toric varieties, generalized cohomology theories).

Academic Positions

Nov 2019 - present	Professoressa Associata (associate professor) at the Dipartimento di Matematica at the University of Rome “Tor Vergata”, Italy
Nov 2016 - Oct 2019	Ricercatore tipo b (tenure track) position at the Dipartimento di Matematica at the University of Rome “Tor Vergata”, Italy
Sept 2015 - Oct 2016	Postdoctoral Fellow at the School of Mathematics at the University of Edinburgh, UK
Feb 2014 - Aug 2015	Research assistant at the Department Mathematik der Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany (<i>on leave May 2014 and Feb 2015</i>)
Feb 2015	Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellow at the Research Institute for Mathematical Sciences, Kyoto, Japan
May 2014	Visiting Professor at the Département de mathématiques de Saint-Etienne Université Jean Monnet, France
Oct 2012 - Jan 2014	Postdoctoral fellow at the Department of Mathematics and Statistics at the University of Melbourne, Australia (<i>on leave 10 Jan- 10 May 2013</i>)
10 Jan - 10 May 2013	Postdoctoral fellow at the Brown University, Providence, Rhode Island, during the special research programme on “Automorphic Forms, Combinatorial Representation Theory and Multiple Dirichlet Series”.
March 2012 - Sept 2012	Research assistant at the Department Mathematik der Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
Jan - Apr 2011	Visiting student (with fellowship) at the Hausdorff Research Institute for Mathematics in Bonn, Germany, during the trimester programme “On the interaction of Representation Theory with Geometry and Combinatorics”.

Papers

Publications

1. E. Feigin, M. Lanini, A. Pütz, Totally nonnegative Grassmannians, Grassmann necklaces and quiver Grassmannians, *Canad. J. of Math.*, in press, DOI: 10.4153/S0008414X22000232.
2. M. Lanini, K. Zainoulline, Twisted quadratic foldings of root systems, *St. Petersburg Math. J.*, **33**-1 (2022), 65–84.
3. M. Lanini, P. J. McNamara, Singularities of Schubert Varieties within a Right Cell, *SIGMA*, bf 17 (2021), 070.
4. M. Lanini, K. Zainoulline, A Riemann-Roch type theorem for twisted fibrations of moment graphs, *Arkiv för Matematik*, **59**-2 (2021), 359–384.

5. P. Fiebig, M. Lanini, Sheaves on the alcoves and modular representations I, *Transformation Groups*, **25**-3 (2020), 725–753.
6. P. Fiebig, M. Lanini, Sheaves on the alcoves and modular representations II, *Transformation Groups*, **25**-3 (2020), 755–791.
7. R. Devyatov, M. Lanini, K. Zainoulline, Oriented sheaves on double moment graphs, *Documenta Mathematica*, **24** (2019), 563–608.
8. M. Lanini, A. Ram, The Steinberg-Lusztig tensor product theorem, Casselman-Shalika and LLT polynomials, *Representation Theory* **23**-5 (2019), 188–204.
9. M. Lanini, E. Strickland, Cohomology of the flag variety under PBW degenerations, *Transformation Groups*, **24**-3 (2019), 835–844.
10. M. Lanini, A. Ram, P. Sobaje, A Fock space model for decomposition numbers for quantum groups at roots of unity, *Kyoto Journal of Mathematics*, **59**-4 (2019), 955–991.
11. L. Bossinger, X. Fang, G. Fourier, M. Hering, M. Lanini, Toric degenerations of $\text{Gr}(2, n)$ and $\text{Gr}(3, 6)$ via plabic graphs, *Annals of Combinatorics*, **22**-3 (2018), 491–512.
12. S. Griffeth, A. Guseinbaur, D. Juteau, M. Lanini, Parabolic degeneration of rational Cherednik algebras, *Selecta Math.* **23** (2017), 2754–2705.
13. M. Lanini, Semi-infinite combinatorics in representation theory, *Representation Theory –Current Trends and Perspectives*, EMS Ser. Congr. Rep., Eur Math. Soc (2016), 501–518.
14. G. Cerulli Irelli, M. Lanini, P. Littelmann, Degenerate flag varieties and Schubert varieties: a characteristic free approach, *Pac. J. of Math.* **284**-2 (2016), 283–308.
15. P. Fiebig, M. Lanini, The combinatorial category of Andersen, Jantzen and Soergel and filtered moment graph sheaves, *Abh. Math. Semin. Univ. Hamburg* **86**-2 (2016), 203–212.
16. G. Cerulli Irelli, M. Lanini, Degenerate flag varieties of type A and C are Schubert varieties, *Int. Math. Res. Notices* **15** (2015), 6353–6374.
17. M. Lanini, On the stable moment graph of an affine Kac-Moody algebra, *Trans. Amer. Math. Soc.*, **367** (2015), 4111–4156.
18. M. Lanini, Categorification of a parabolic Hecke module via sheaves on moment graphs, *Pacific Journal of Mathematics* **271**-2 (2014), 415–444.
19. M. Lanini, Moment graphs and Kazhdan-Lusztig polynomials, *DMTCS Proceedings, 24th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2012)*, 491–502.
20. M. Lanini, Kazhdan-Lusztig combinatorics in the moment graph setting, *J. of Alg.* **370** (2012), 152–170.

Preprints

21. M. Lanini, A. Pütz, Permutation actions on Quiver Grassmannians for the equioriented cycle via GKM-Theory, arXiv:2105.10122
22. M. Lanini, A. Pütz, GKM-Theory for Torus Actions on Cyclic Quiver Grassmannians, arXiv:2008.13138.

Invited Research Talks

Conference Talks

1. TBA, *Second ANTIPODE workshop*, ULB – Université Libre de Bruxelles, 12–13 September 2022.
2. Symmetric quivers and symmetric varieties, *LMS Workshop: Combinatorial Algebraic Geometry*, Bath, 1–5 August, 2022.
3. Symmetric quivers and symmetric varieties, *AMS-SMF-EMS Joint International Meeting - Special Session on Modular Representation Theory*, Grenoble, 18–22 July, 2022.
4. Symmetric quivers and symmetric varieties, *Geometric Representation Theory, a satellite conference of the virtual ICM 2022*, 27 June–2 July, 2022.
5. Simple minded collections arising from perverse sheaves, *Representation Theory and Geometry*, online, 14–16 February 2022.
6. Totally nonnegative Grassmannians, Grassmann necklaces and quiver Grassmannians, *Representation theory's hidden motives*, Münster (Germany) and Sydney (Australia), 27 September–1 October 2021.
7. Totally nonnegative Grassmannians, Grassmann necklaces and quiver Grassmannians, *Combinatorics and Representation Theory in Lausanne*, Lausanne, Switzerland, 13–17 September, 2021.
8. Splines arising in Geometry, Topology and Representation Theory, *Dimension of Multivariate Splines: An Algebraic Approach*, online, 31 May 2021.
9. Attractive forests and torus actions, *Monoidal and 2-categories in representation theory and categorification*, HIM Bonn, online, 30 November – 4 December 2020.
10. Torus actions on cyclic quiver Grassmannians, *Regional Conference in Lie Theory*, Centre de Recherches Mathématiques de Montréal, online, 2–3 October, 2020.
11. Singularities of a Schubert variety within a right cell, *ABCD Seminar*, online, 29 July 2020.
12. Singularities of a Schubert variety within a right cell, *Bicontinental Conference on Geometric Representation Theory*, Perimeter Institute of Waterloo & MPI Bonn, online, 22–26 June, 2020.
13. Moment graphs and localisation of Verma flags, *Representation Theory in Venice - A conference in honour of Corrado De Concini*, Venice, 16–19 September 2019.
14. Quadratic foldings of root systems, *Algebraic Combinatorics in Genova*, Università di Genova, 11–13 September, 2019.
15. Quadratic folding of root systems, *Flag, galleries, ad reflections groups*, University of Sydney, 5–9 August 2019.
16. Sheaves on the alcoves and modular representations, *Interactions between Representation Theory and Model Theory*, University of Kent, UK, 1–5 July 2019.
17. Combinatorial Fock Space and representations of quantum groups at a root of unity, *Island V: Integrability, Special functions and combinatorics, Island of Skye*, 23–28 June 2019.
18. Quadratic folding of root systems, *Southeastern Lie Theory Workshop XI*, Louisiana State University, USA, 13–15 May 2019.
19. Cohomology of the flag variety under PBW degenerations, *Geometry and representation theory at the interface of Lie algebras and quivers*, Bochum, Germany, 10–14 September, 2018.

20. Combinatorial Fock space and representations of quantum groups at a root of unity, *Seminar on Conformal Field Theory*, RIMS, Kyoto, Japan, 23–27 April, 2018.
21. Sheaves on the alcoves and modular representation theory, Geometry and Representation Theory of Algebraic Groups, *Geometry and Representation Theory of Algebraic Groups*, Bad Honnef, Germany, 5–9 March, 2018.
22. Sheaves on the alcoves and modular representation theory, *Quantum geometric and algebraic representation theory*, HIM, Bonn, Germany, 16–18 October, 2017.
23. Cohomology of the flag variety under PBW degenerations, *Toric degenerations of Grassmannians and flag varieties*, Bristol, UK, 21–22 August, 2017.
24. Sheaves on the alcoves and modular representation theory, *Geometric Representation Theory*, Glasgow, UK, 3–7 July, 2017.
25. Combinatorial Fock spaces and representations of quantum groups at a root of unity, *Algebraic and geometric combinatorics of reflection groups*, Centre des Recherches Mathématiques, Montreal, Canada, 5–9 June, 2017.
26. Toric degenerations of Grassmannians and plabic graphs, *Newton-Okounkov Bodies, Test Configurations, and Diophantine Geometry*, Banff International Research Station, Canada, 6–10 February, 2017.
27. Combinatorial Fock spaces and representations of quantum groups at a root of unity, *Algebraic and Geometric Combinatorics of Reflection Groups*, Montreal, Canada, 5–9 June, 2017.
28. Degenerate flags and Schubert varieties, *Convexity in algebraic geometry*, Fields Institute, Toronto, Canada, 3–7 October, 2016.
29. Parking spaces and Catalan combinatorics, *Combinatoire algébrique en théorie des représentations*, CIRM, Luminy, France, 29 August–2 September, 2016.
30. Degenerate Flags and Schubert varieties, *Representation Theory in Samos*, Samos, Greece, 4–8 July, 2016.
31. Periodic patterns in representation theory and moment graphs, *Nilpotent Orbits and Representation Theory*, Pisa, Italy, 13–18 June, 2016.
32. Filtered modules on moment graphs, *BLOC meeting*, City University, London, UK, 27 May, 2016.
33. Phénomènes périodiques dans la théorie des représentations et graphes moment, *Groupes algébriques, géométrie et représentations*, Caen, France, 16–18 March, 2016.
34. Parabolic degeneration of rational Cherednik algebras, *Categorical and geometric representation theory*, Mooloolaba, Australia, 14–18 December, 2015.
35. Moment graph combinatorics for semi-infinite flags, *GLEN Algebraic Geometry Seminar*, Edinburgh, UK, 10 December, 2015.
36. Degenerate flags and Schubert varieties, *Algebra and Representation Theory in the North (ARTIN)*, Glasgow, UK, 6–7 November, 2015.
37. Filtered modules on moment graphs, *DMV Tagung 2015*, Hamburg, Germany, 21–25 September, 2015.
38. Semi-infinite combinatorics in representation theory, *DFG Tagung 2015*, Bad Honnef, Germany, 9–13 March, 2015.
39. Variétés de drapeaux dégénérées et variétés de Schubert, *Journées de Lie du GDR TLAG*, Poitiers, France, 4–5 June, 2015.

40. Degenerate flags and Schubert varieties, *Representation Theory and Related Topics*, Irako, Japon, 16-20 February, 2015.
41. Degenerate flags and Schubert varieties, *Algebraic Geometry and Representation Theory in Rome*, Rome, Italie, 18–19 December, 2014.
42. Periodic structures in the representation theory of affine Kac-Moody algebras, *Algebraic Lie theory and representation theory*, ICMS, Edinburgh, UK, 1–5 September, 2014.
43. Degenerate flags and Schubert varieties, *Conference: Representations of algebraic groups*, Lyon, France, 7-11 July, 2014.
44. Moment graph combinatorics for semi-infinite flags, *Workshop: Representations of algebraic groups*, Lyon, France, 30 June-4 July, 2014.
45. Moment graph combinatorics for semi-infinite flags, *Combinatorial Representation Theory*, The Centre de recherches mathématiques - CRM - Université de Montréal, Canada, 21–25 April, 2014.
46. Finite dimensional representations of rational Cherednik algebras, *DFG Tagung 2014*, Soltau, Germany, 24–27 March, 2014.
47. Moment graph combinatorics for semi-infinite flags, *Topology and Representation Theory at Kioloa*, ANU Costal Campus, Kioloa, Australia, 9-14 December 2013.
48. Fock Spaces and Hecke Algebras, *Combin' 'a Tours*, LMPT Tours, Tours, France, 3–5 July, 2013.
49. The stable moment graph and periodic structures in the affine category \mathcal{O} , *2013 Spring Western Section Meeting, Special Session on Combinatorial Avenues in Representation Theory*, University of Boulder, Boulder, Colorado, USA, 13–14 Avril 2013.
50. The stable moment graph of an affine Kac-Moody algebra, *DMV Tagung 2012*, Universitaet des Saarlandes, Saarbruecken, Germany, 17–19 Septembre, 2012.
51. Moment graphs and modular representation theory, *Modular Algebras: Representations, Invariants, Lie Theory*, Friedrich-Schiller-Universitaet, Jena, Germany, 23–25 May, 2012.
52. Sheaves on moment graphs and categorification, *Incontro natalizio di algebra e geometria degli ex-studenti del Castelnuovo*, La Sapienza Universita di Roma, Rome, Italie, 20–21 December, 2011.
53. KL-combinatorics in the moment graph setting, *DFG Tagung 2011*, Muenster, Germany, 1–4 March, 2011.
54. KL-combinatorics in the moment graph setting, *Geometry and Combinatorics in Representation Theory of Lie Algebras*, Cologne, Germany, 4-8 October, 2010.
55. KL-combinatorics in the moment graph setting, *Representations of Lie Groups and Algebraic Groups*, Erlangen, Germany, 14–17 September, 2010.

Research Seminar Talks

On top of conference talks, I have delivered about **fifty research seminar** talks at various institutions in Australia, Austria, France, Germany, Italy, Japan, Russia, Switzerland, the UK, and the USA. Among these institutions: Columbia University (29/04/2019), Cornell University (31/10/2014), EPFL (02/06/2021), Higher School of Economics in Moscow (27/04/2021), Institut Henri Poincaré (11/02/2020), University of Bonn (29/01/2016), University of Sydney (30/08/2013).

Colloquia

1. Combinatorics of Schubert Varieties in Representation Theory, *CRM Colloquium*, University of Ottawa, Canada, 2 June 2017.
2. Moment graphs and Coxeter groups, *Colloquium of the Department of Mathematics*, Cornell, Ithaca, NY, USA, 30 October 2014.

Lecture Series

1. Moment graphs and Schubert calculus, *Forms, Flags, Graphs, and Beyond*, Ottawa, Canada, 9–12 May 2019.
2. Modular representation theory, alcove combinatorics and a category of sheaves, *Interactions of low-dimensional topology and “higher” representation theory*, Zurich, Switzerland, 17–21 September, 2018.
3. Introduction to Schubert varieties, *Hokkaido-Pisa-Rome Tor Vergata Summer School*, Centro De Giorgi, Pisa, Italy, 27 August–7 September 2018, 8 hours.
4. Introduction to Schubert varieties, *LMS Undergraduate Summer School*, The University of Glasgow, UK, 16–27 July 2018, 5 hours.
5. Moment graph tasting plate, *Mini workshop on Representation Theory in Geometry, Topology, and Combinatorics*, The University of Melbourne, Australia, 28–31 October 2013, 4 hours.

Scientific Visits

Since 2009, I have visited **about 100 different scientific institutions** (for stays of various lengths, going from a few days to up to several months). Among them:

University of Melbourne	April 2012, 20 Dec 2015–6 Jan 2016, 21 Dec 2017–5 Jan 2018, 25 Jul–4 Aug 2019, Host: Arun Ram
Australian National University	4–8 Dec 2013, Host: Tony Licata
Cornell University	26 Oct–2 Nov 2014, Host: Allen Knutson
Albert-Ludwigs-Universität Freiburg	9 Nov–7 Dec 2014, 15–21 July 2018, Host: Wolfgang Soergel
Centro De Giorgi	10 Dec 2014–4 Feb 2015 for the intensive research period “Perspectives in Lie Theory”
FAU Erlangen-Nürnberg	June–July 2017, Host: Peter Fiebig
Paris Jussieu	17–24 March 2019, Host: David Hernandez
Columbia University	23 Apr–1 May 2019, Host: Andrei Okounkov
University of Ottawa	1–12 May 2019, Host: Kirill Zainoulline
Institut Henri Poincaré	19 Jan–16 Mar 2020 for the programme “Representation Theory” interrupted because of COVID-19

Awards and Honours

2017 Recipient of the Funding for Basic Activities Related to Research (FFABR), 2000 €
Oct 2011 *Fakultätsfrauenpreis 2011* der Naturwissenschaftlichen Fakultät der Friedrich-Alexander-Universität
Erlangen-Nürnberg, Germany

Participation in By-invitation-only Workshops

1. *Enveloping Algebras and Geometric Representation Theory*, Mathematisches Institut Oberwolfach, 4–10 March 2012.
2. *Enveloping Algebras and Geometric Representation Theory*, Mathematisches Institut Oberwolfach, 10–16 May 2015.
3. *Newton-Okounkov Bodies, Test Configurations and Diophantine Geometry*, Banff International Research Station, 5–10 February 2017.
4. *Beyond Toric Geometry*, Casa Matemática Oaxaca, 7–12 May 2017.
5. *Enveloping Algebras and Geometric Representation Theory*, Mathematisches Institut Oberwolfach, 25 November–1 December 2018.
6. *Toric Geometry*, Mathematisches Institut Oberwolfach, 22–28 September 2019.
7. *Enveloping Algebras and Geometric Representation Theory*, Mathematisches Institut Oberwolfach, 31 October–06 November 2021.
8. *Character Theory and Categorification*, Mathematisches Institut Oberwolfach, 28 August–3 September 2022.
9. *Toric Degenerations*, Banff International Research Station for Mathematical Innovation and Discovery, 4–9 December 2022.

Conference and Research Programme Organisation

1. *Sezione “S16: Combinatoria” of the XXII Congresso dell’Unione Matematica Italiana*, Pisa, 4–9 September 2023.
2. *INdAM Meeting: Approximation Theory and Numerical Analysis meet Algebra, Geometry, Topology*, 4–10 September 2022.
Coorganisers: Carla Manni, Hal Schenck.
3. *May 12–“The Transport Equation”*, Università di Roma Tor Vergata, 14 May, 2021.
Coorganisers: Domenico Marinucci, Alfonso Sorrentino, Elisabetta Strickland.
4. *Algebraic groups and Representation theory*, Euler International Mathematical Institute (EIMI), St. Petersburg, Russia, 3–7 August, 2020.
Coorganisers: Victor Petrov, Kirill Zaynullin
Cancelled due to COVID–19
5. *May 12–“Varieties of Varieties after Maryam Mirzakhani”*, Università di Roma Tor Vergata, 9 June, 2020.
Coorganisers: Domenico Marinucci, Alfonso Sorrentino, Elisabetta Strickland.
6. *Mini-Workshop: Degeneration techniques in Representation theory*, Mathematisches Forschungsinstitut Oberwolfach, Germany, 6–12 October, 2019.
Coorganisers: Evgeny Feigin, Ghislain Fourier
7. *Forms, Flags, Graphs, and Beyond*, Ottawa, Canada, 9–12 May 2019.
Coorganisers: Nikita Karpenko, Kirill Zaynullin.
8. *Representation Theory in Rome and Beyond – An afternoon in honour of Welleda Baldoni and Elisabetta Strickland*, Università di Roma Tor Vergata, 16 November, 2018.
Coorganiser: Fabio Gavarini.

9. *Algebraic Combinatorics in Ancona*, Università politecnica delle Marche, 12–15 June, 2018
Coorganisers: Mario Marietti, Agnese Ilaria Telloni
10. *Mini-Workshop: PBW Structures in Representation Theory*, Mathematisches Forschungsinstitut Oberwolfach, Germany, 28 February–5 March, 2016.
Coorganisers: Evgeny Feigin, Ghislain Fourier
11. *Aspects of Lie Theory*, INdAM, Rome, Italy, 7–10 January 2015.
Coorganisers: Paolo Bravi, Nicoletta Cantarini, Alessandro D’Andrea, Alberto De Sole, Paolo Papi.
12. *Perspectives in Lie Theory*, Centro de Giorgi, Pisa, Italy, 9 December 2014–28 February 2015.
Coorganisers: Filippo Callegaro, Giovanna Carnovale, Fabrizio Caselli, Alessandro D’Andrea, Alberto De Sole, Giovanni Gaiffi, Mario Salvetti.
13. *Algebra and Representation Theory for Young researchers 2 (ARTY 2)*, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany, 8–10 May 2014.
Coorganisers: B. Schalke, F. Steglich.
14. *Representation Theory in Geometry, Topology, and Combinatorics*, The University of Melbourne, Australia 28 October–7 November, 2013.
Coorganisers: A. Licata, A. Ram, G. Williamson.
15. *Algebra and Representation Theory for Young researchers (ARTY)*, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany, 23–25 May 2013.
Coorganisers: B. Schalke, N. Sivanesan, F. Steglich.

As an organiser, I wrote several grant applications and secured funding for the above mentioned activities. For example, I filed the funding application for the upcoming *INdAM Meeting: Approximation Theory and Numerical Analysis meet Algebra, Geometry, Topology*, which was successful (15.000€).

Research Seminar Organisation

1. *Algebra and Representation Theory Seminar (ARTS)*, Dipartimento di Matematica, University of Rome “Tor Vergata”, Italy, April 2017-present.
Coorganiser: Fabio Gavarini.
2. *MAXIMALS Algebra and Number Theory Seminar*, School of Mathematics, University of Edinburgh, UK, September 2015–December 2016.

Further Organised Activities

1. Co-organiser of the *Giornata di Dipartimento* of the Department of Mathematics of the University of Rome “Tor Vergata”, 2019, 2021, 2022.
2. *General Audience Maths Edinburgh Seminar (GAMES)*, School of Mathematics, University of Edinburgh, UK, October 2015–December 2016.
Coorganiser: Martin Kalck.

Teaching Experience

Undergraduate (=Bachelor and Master) Courses

Sem 1 2021/2022	Lecturer of a year 1 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Algebra 1
Sem 1 2021/2022	Lecturer of a year 3 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Crittografia (Cryptography)
Sem 1 2020/2021	Lecturer of a year 3 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Algebra 3
Sem 1 2020/2021	Lecturer of a year 3 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Crittografia (Cryptography)
Sem 1 2020/2021	Tutor of a year 1 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Algebra 1
Sem 1 2019/2020	Lecturer of a year 3 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Algebra 3
Sem 1 2019/2020	Lecturer of a year 3 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Crittografia (Cryptography)
Sem 1 2018/2019	Tutor of a year 2 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Geometry 3 (Set topology)
Sem 1 2018/2019	Lecturer of a Master course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Teoria delle Rappresentazioni 1 (Algebraic Groups)
Sem 2 2017/2018	Co-lecturer of a Master course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Teoria delle Rappresentazioni 2 (Representation Theory 2)
Sem 1 2017/2018	Tutor of a year 2 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Algebra 2
Sem 1 2017/2018	Lecturer of a year 3 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Algebra 3
Sem 2 2016/2017	Lecturer of a year 3 Bachelor course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Preparazione Esame Cultura – parte di Algebra e Geometria (various topics in Algebra and Geometry encountered by the students during the previous years)
Sem 2 2016/2017	Co-lecturer of a Master course at the Dipartimento di Matematica at the University of Rome “Tor Vergata” Course: Teoria delle Rappresentazioni 1 (Representation Theory 1)
Sem 1 2016/2017	Lecturer of a year 3 course at the School of Mathematics of the University of Edinburgh, UK Course: Group Theory
Sem 2, 2015/2016	Tutor at the School of Mathematics of the University of Edinburgh, UK Course: Algebra Honours, Prof. Iain Gordon

SS 2014/2015	Responsible for a master seminar at the Department of Mathematics of the Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany Course: Coxeter Gruppen
SS 2011/2012	Tutor at the Department of Mathematics of the Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany Course: AL2 (=Linear Algebra 2), Prof. Peter Fiebig
WS 2011/2012	Tutor at the Department of Mathematics of the Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany Course: AL1 (=Linear Algebra 1), Prof. Peter Fiebig
Sem 2 2009/2010	Tutor at the Department of Mathematics of the Università degli Studi di Roma Tre, Italy Course: TN1 (=Elementary Number Theory), Prof. Marco Fontana
Sem2 2008/2009	Tutor at the Department of Mathematics of the Università degli Studi di Roma Tre, Italy Course: TN1 (=Elementary Number Theory), Prof. Florida Girolami
Sem 2 2007/2008	Tutor at the Department of Mathematics of the Università degli Studi di Roma La Sapienza, Italy Course: Algebra 1, Prof. Antonio Machì

PhD Courses

Mar-June 2021	<i>Yangians in Geometry and Representation Theory</i> , 30 hours. joint course of the Universities of Pisa, Parma and Rome Tor Vergata Co-lecturers: Andrea Appel, Francesco Sala
Jan-April 2018	<i>Moment Graphs in Geometry, Combinatorics, and Representation Theory</i> at the University of Roma Tor Vergata, 25 hours.
Jan-April 2015	<i>Perverse Sheaves and the Decomposition Theorem</i> at the University of Edinburgh, 10 hours Co-lecturer: Johan Martens.

Student Supervision

Bachelor Students

At the Department of Mathematics of the University of Roma Tor Vergata, the students who are completing their bachelor degree have to pass a written exam and to give a brief presentation. I supervised several of these presentations:

Roberta Rella	<i>Il Lemma del serpente</i> , September 2018,
Federica Di Leo	<i>Equivalenza di Morita</i> , March 2019,
Alessio Proietti	<i>Schemi in gruppo e algebre di Hopf</i> , May 2019,
Claudia Agulini	<i>Il Teorema dei quattro quadrati</i> , July 2019,
Fabiola Martucci	<i>La legge di reciprocità quadratica</i> , March 2020,
Daniele Milana	<i>Alcuni attacchi all'RSA</i> , July 2020,
Mariachiara Gulinello	<i>Primi di Mersenne</i> , March 2021,
Giulia Santoni	<i>Lemma di Zolotareff e Reciprocità quadratica</i> , March 2021,
Gioia Vallifuoco	<i>L'algoritmo di Berlekamp</i> , March 2021,
Matteo Tortolano	<i>Omologia di intersezione simpliciale</i> , March 2022,
Francesca Carla Pacilé	<i>Il Teorema di Dirichlet sulle progressioni aritmetiche</i> , 20 July 2022.
Andrea Padellini	<i>Il Lemma di Yoneda</i> , expected October 2022.

Master Theses

Valentina Ciuchini *Categoria \mathcal{O} , Proiettivi indecomponibili e quiver*, May 2019
Giulia Iezzi *Towards a study of the equivariant cohomology of quiver Grassmannians*, December 2021.

PhD Students

Giulia Iezzi Co-supervised with Ghislain Fourier (RWTH Aachen University), March 2022–present.
the binationally-supervised PhD Thesis agreement between the University of Rome Tor Vergata and the RWTH Aachen University is being currently negotiated.

As a member of the Doctoral Board of the Department of Mathematics of the University of Rome “Tor Vergata”, I serve(d) as a tutor for several PhD students: Viola Siconolfi (defended on September 2020), Guido Lido (defended on October 2021), Andrea Marino (expected defense Spring 2023), Alessio Bottini (expected defense Fall 2023 or Spring 2024), Nelson Alvarado (expected defense Spring 2025), Laura Tomassi (expected defense Summer 2025).

The tutor’s duty is to regularly meet the students and make sure they are on track.

Mitacs Globalink Research PhD Students

Maiko Serizawa Host Supervisor for the Mitacs Globalink Research Award for graduate student research at a university outside Canada for the project “Twisted foldings and double moment graphs”, Oct–Dec 2019.

Postdoc Supervision

Alexander Pütz January–December 2020,
Alessio Cipriani May 2021–April 2022.

Other Services

Scientific Responsibilities

PI of the project “Combinatorial, Algebraic and Geometric Problems Arising from Representation Theory” on the Fondi di Ricerca Scientifica di Ateneo 2021, April 2022–present (7.200€).

Local coordinator for the 3 year Research project of national interest (PRIN) “Moduli and Lie Theory”, (national coordinator K.O’Grady, 537.000€), August 2018–present.

Institutional/hiring/fellowship/PhD Sdmission Committee Member

Member of the *Giunta di Dipartimento* for the Academic Years 2021/2022-2022/2023-2024/2025.

Math Department representative in the Young Universities For Europe (YUFE) Board of the Macroarea di Scienze, November 2021–present.

Member of the Doctoral Board of the Department of Mathematics of the University of Rome “Tor Vergata”, January 2019–present.

Member of the Scientific Committee (=Commissione Scientifica) of the Department of Mathematics of the University of Rome “Tor Vergata”, January 2019–present.

Member of the hiring committee for a Ricercatore a Tempo Indeterminato INdAM, III livello professionale 1° gruppo - Aree ERC: da PE1_1 a PE1_7, March–July 2022.

Member of the hiring committee for a Ricercatore a Tempo Determinato a) position at Università di Pisa, December 2021–March 2022.

Member of the hiring committee for a Ricercatore a Tempo Determinato a) position at Sapienza Università di Roma, December 2020–February 2021.

Jury member for the Premio Cuozzo 2019 for young PhD graduates in Mathematics, sponsored by Vincenzo and Stefania Cuozzo in memory of Michele Cuozzo.

Member of the admission committee for the PhD programme in Mathematics at the University of Rome “Tor Vergata”, May–June 2019.

Member of the hiring committee for a maître de conference position at Paris 7, March–May 2019.

Committee member for the INdAM Fellowships for Master Students A.A.2018-2019, July–October 2018.

PhD defense committee member

Member of the committee for the PhD defense of Mattia Coloma, Università degli Studi di Roma “Tor Vergata”, 7 April 2022.

Member of the committee for the PhD defense of Uran Meha, University of Lyon, 7 September 2021.

Member of the examination committee for all Phd students in Mathematics of the University of Padova, 18 January & 14 April 2021.

Member of the committee for the PhD defense of Khanh Nguyen, University of Lyon, 25 September 2020.

Referee duties (journal articles and PhD Theses)

Referee for the PhD Thesis “Gradings and Soergel Bimodules” by Benjamin McDonnell University of Freiburg, Germany, 2019.

Referee for *Advances in Mathematical Physics*, *Canadian Journal of Mathematics*, *IMRN*, *Journal of Algebra*, *Journal of Algebra and Its Applications*, *Kyoto J. of Math.*, *Journal of Algebraic Combinatorics*, *Linear Algebra and its Applications*, *Representation Theory*, *Transactions of the AMS*, *Transformation Groups*.

Language proficiency

Italian	native
English	fluent
German	fluent
French	fluent
Spanish	fluent

Le dichiarazioni rese nel presente curriculum corrispondono a verità e sono da ritenersi rilasciate ai sensi degli articoli 46 e 47 del D.P.R. 445 del 2000.

Roma,

Firma

MARTINA LANINI