

Curriculum Vitae Stella Salvatore

Last update: 5th October, 2022

General informations:

Born in Rome on 14th January, 1984

Current position : RDT-B MAT/03, Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica, Università degli Studi dell'Aquila

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Past positions & Research stays:

- *14th January, 2020 – 31st January, 2021*: RDT-a, Dipartimento di Matematica “G. Castelnuovo”, Università di Roma “La Sapienza”
- *13th March, 2019 – 31st December, 2019*: Lecturer in Mathematics, Department of Mathematics, University of Leicester, UK
- *1st June, 2017 – 12th March, 2019*: Postdoc, Department of Mathematics & Department of Computer Science, University of Haifa, Haifa, Mount Carmel 31905, Israel
- *1st June, 2015 – 31st May, 2017*: INdAM - Marie Curie cofund fellow, Dipartimento di Matematica “G. Castelnuovo”, Università degli studi di Roma “Sapienza”
- *12th October, 2015 – 18th December, 2015*: Grey College Math Fellow, Department of Mathematical Sciences, Durham University
- *16th August, 2013 – 31st May, 2015*: Post Doctoral Research Scholar, North Carolina State University
- *20th August, 2012 – 20th December, 2012*: Program Associate, Cluster Algebras Program, MSRI, Berkeley
- *1st September, 2008 – 3rd May, 2013*: Research/Teaching Assistant, Northeastern University, Boston

Education:

- Abilitazione Scientifica Nazionale: professore di prima fascia, SC 01/A2 Geometria e Algebra, 02/10/2022
- Abilitazione Scientifica Nazionale: professore di seconda fascia, SC 01/A2 Geometria e Algebra, 18/09/2018
- Qualifié aux fonctions de maître de conférences, 25-Mathématiques, No. 17225302330, 02/02/2017
- *2008 – 2013*: Ph.D. in Mathematics, Northeastern University, Boston
Advisor: Prof. Andrei Zelevinsky
Thesis (5th April, 2013): “Discrete structures in finite type Cluster Algebras”
- *2006 – 2008*: Laurea Specialistica in Matematica, Università degli studi di Roma “Sapienza”, con lode
- *2003 – 2006*: Laurea Triennale in Matematica, Università degli studi di Roma “Sapienza”, con lode
- *1998 – 2003*: Maturità Scientifica, Liceo “A. Righi”, Roma, 100/100

Prizes:

- *2011*: Ling Ma fellowship, Northeastern University, Boston
- *2008 – 2013*: Excellence Fellowship, Northeastern University, Boston

Grants:

- *2021*: Università degli Studi dell'Aquila, fondi per l'avvio alla ricerca – Research project “Cluster algebras, scattering diagrams, and Poisson-Lie groups”
- *2020 - 2024*: Agence nationale de la recherche, Appel à projets générique 2019 – ANR PRC 2019 – Research project “Clusters, Homological Algebra, Representations and Mirror Symmetry” – PI: Yann Palu
- *August 2018*: Principal Investigator – Research project “Kac-Moody groups and cluster algebras” – INdAM starting grant – (1 postdoc to be hired for 1 year and research funds; renounced)
- *June 2015 – May 2017*: INdAM - Marie Curie cofund fellowship – (research funds)

Publications:

- (14) [Joint with N. Reading] “The action of a Coxeter element on an affine root system”, Proceedings of the AMS Vol. 148, Issue 7 (2020), pp. 2783-2798, [arXiv:1808.05090](https://arxiv.org/abs/1808.05090); <https://doi.org/10.1090/proc/14769>

- (10) [Joint with N. Reading] “An affine almost positive roots model”, *Journal of Combinatorial Algebra* Vol 4 (2020) no. 1 pp. 1–59, [arXiv:1707.00340](https://arxiv.org/abs/1707.00340); <https://doi.org/10.4171/jca/37>
- (12) [Joint with D. Rupel] “Some consequences of categorification”, *SIGMA* 16 (2020), 007, 8 pages; [arXiv:1712.08478](https://arxiv.org/abs/1712.08478); <https://doi.org/10.3842/SIGMA.2020.007>
- (13) [Joint with D. Rupel, H. Williams] “Affine cluster monomials are generalized minors”, *Compositio Mathematica* Vol. 155, Issue 7 July 2019, pp. 1301–1326; [arXiv:1712.09143](https://arxiv.org/abs/1712.09143); <http://dx.doi.org/10.1112/S0010437X19007292>
- (11) [Joint with V. Pilaud, P.-G. Plamondon] “A τ -tilting approach to dissections of polygons”, *SIGMA* 14 (2018), 045, 8 pages; [arXiv:1710.02119](https://arxiv.org/abs/1710.02119); <https://doi.org/10.3842/SIGMA.2018.045>
- (8) [Joint with D. Rupel, H. Williams] “On generalized minors and quiver representations”, *International Mathematics Research Notices*, rny053, (2018), [arXiv:1606.03440](https://arxiv.org/abs/1606.03440); <https://doi.org/10.1093/imrn/rny053>
- (9) [Joint with C. Hohlweg, V. Pilaud] “Polytopal realizations of finite type \mathfrak{g} -vector fans”, *Advances in Mathematics*, Vol. 328, (2018), 713–749, [arXiv:1703.09551](https://arxiv.org/abs/1703.09551); <https://doi.org/10.1016/j.aim.2018.01.019>
- (4) [Joint with N. Reading] “Initial-seed recursions and dualities for \mathbf{d} -vectors”, *Pacific Journal of Mathematics*, Vol. 293 (2018), No. 1, 179–206, [arXiv:1409.4723](https://arxiv.org/abs/1409.4723); <https://doi.org/10.2140/pjm.2018.293.179>
- (6) [Joint with L. Demonet, P. Plamondon, D. Rupel, P. Tumarkin] “ SL_2 -tilings do not exist in higher dimensions (mostly)”, *Séminaire Lotharingien de Combinatoire*, B76d (2018), 6 pp; [arXiv:1604.02491](https://arxiv.org/abs/1604.02491); <https://www.mat.univie.ac.at/~slc/wpapers/s76stella.html>
- (5) [Joint with M. Cheung, M. Gross, G. Muller, G. Musiker, D. Rupel, H. Williams] “The greedy basis equals the theta basis”, *Journal of Combinatorial Theory, Series A*, Volume 145, January 2017, Pages 150–171; [arXiv:1508.01404](https://arxiv.org/abs/1508.01404); <http://dx.doi.org/10.1016/j.jcta.2016.08.004>
- (7) [Joint with P. Tumarkin] “Exchange relations for finite type cluster algebras with acyclic initial seed and principal coefficients”, *SIGMA* 12 (2016), 067, 9 pages; [arXiv:1604.06286](https://arxiv.org/abs/1604.06286); <http://dx.doi.org/10.3842/SIGMA.2016.067>
- (3) [Joint with T. Nakanishi] “Wonder of sine-Gordon Y -systems”, *Transactions of the AMS*, 368 (2016), 6835–6886; [arXiv:1212.6853](https://arxiv.org/abs/1212.6853); <http://dx.doi.org/10.1090/tran/6505>
- (2) [Joint with T. Nakanishi] “Diagrammatic description of \mathbf{c} -vectors and \mathbf{d} -vectors of cluster algebras of finite type”, *Electronic journal of Combinatorics* Volume 21, Issue 1 (2014) P1.3; [arXiv:1210.6299](https://arxiv.org/abs/1210.6299); <http://www.combinatorics.org/ojs/index.php/eljc/article/view/v21i1p3>
- (1) “Polyhedral models for generalized associahedra via Coxeter elements”, *Journal of Algebraic Combinatorics* 38 (2013), no. 1, 121–158; [arXiv:1111.1657](https://arxiv.org/abs/1111.1657); <http://dx.doi.org/10.1007%2Fs10801-012-0396-7>

Preprints:

- (15) [Joint with A. Chandler, R. Sazdanovic, M. Yip] “On the Strength of Chromatic Symmetric Homology for graphs”, [arXiv:1911.13297](https://arxiv.org/abs/1911.13297)
- (16) [Joint with N. Reading] “Cluster scattering diagrams of acyclic affine type”, [arXiv:2205.05125](https://arxiv.org/abs/2205.05125)
- (16) [Joint with D. Rupel] “Dominance Regions for Rank Two Cluster Algebras”, [arXiv:2206.04778](https://arxiv.org/abs/2206.04778)

Teaching:

- *Spring 2022*: “Geometria e topologia algebrica”, Università degli Studi dell’Aquila
- *Spring 2021*: “Geometria e topologia algebrica”, Università degli Studi dell’Aquila
- *Fall 2020*: “Matematica” per il corso di laurea in “Chimica e Tecnologia Farmaceutiche (LT)”, Università “La Sapienza”
- *Fall 2020*: “Istituzioni di Algebra Superiore”, Università “La Sapienza”
- *Spring 2020*: “Gruppi di Coxeter - Percorso di Eccellenza - Matematica”, Università “La Sapienza”
- *Spring 2020*: “Istituzioni di Matematica II - Chimica”, Università “La Sapienza”
- *2019 – 2020*: “MMath Project”, University of Leicester
- *Fall 2019*: “Investigations in Maths”, University of Leicester
- *Spring 2015*: “Introduction to cluster algebras” (Graduate course), North Carolina State University
- *Fall 2014*: Two sections of “Calculus 1”, North Carolina State University
- *Spring 2014*: “Linear Algebra”, North Carolina State University
- *Fall 2013*: Two sections of “Calculus 1”, North Carolina State University
- *Spring 2011*: “Discrete mathematics”, Northeastern University
- *Fall 2010*: “Calculus 2”, Northeastern University
- *Spring 2009*: “Calculus for business and economics”, Northeastern University
- *Fall 2008*: “Recitation for Calculus 3”, Northeastern University

Organizer of:

- *September 2023*: Conference “Cluster algebras and Poisson geometry”
- *September 2023*: Sezione di Teoria di Lie, XXII Congresso UMI, Pisa
- *Fall 2019*: Pure Math Seminar, University of Leicester
- *December 2018*: Conference “Cluster structures in geometry, physics, combinatorics and representation theory”, Notre Dame University Global Gateway, Jerusalem
- *October 2016*: Workshop “Lie theory and cluster algebras”, Notre Dame University Global Gateway, Rome
- *June 2015*: Workshop “Sage Days 64.5”, IMA, Twin Cities, Minnesota
- *2014 – 2015* “Algebra and Combinatorics seminar”, North Carolina State University
- *Spring 2013* “Brandeis-Northeastern joint seminar on cluster algebras”, Boston
- *Fall 2011* “MIT-Northeastern University joint seminar on cluster algebras” Boston

Referee for:

- Journal of Algebra
- Transactions of the AMS
- Memoirs of the AMS
- International Mathematics Research Notices (IMRN)
- Mathematische Zeitschrift
- Pacific Journal of Mathematics
- Symmetry, Integrability and Geometry: Methods and Applications (SIGMA)
- Formal Power Series and Algebraic Combinatorics (FPSAC)
- Journal of Combinatorial Theory, Series A
- Journal of Algebraic Combinatorics
- Algebras and Representation Theory
- Bulletin of the London Mathematical Society
- Canadian Journal of Mathematics
- Canadian Mathematical Bulletin
- SageMath
- Annals of Combinatorics

Selected Invited Talks:

- *September 2021*: Workshop: “Ricercatori in Algebra e Geometria 2020“, Scuola Normale Superiore, Pisa
- *June 2020*: Seminario ARTS, Università di Roma “Tor Vergata”
- *September 2019*: Congresso UMI: sezione di Combinatoria
- *September 2019*: Congresso UMI: sezione di Teoria di Lie
- *June 2019*: Conference: Cluster Algebras, RIMS, Kyoto
- *May 2019*: Conference: Representation Theory and Homological Mirror Symmetry, Leicester University
- *July 2018*: Conference: FPSAC
- *February 2018*: Colloque tournant du GDR Théorie de Lie 2018
- *November 2017*: Conference: Two Cluster Days in Paris, IHP
- *October 2017*: Plateau Saclay Combinatorics Seminar, École Polytechnique
- *June 2017*: Workshop: Algebraic and Geometric Combinatorics of Reflection Groups, Montreal
- *May 2017*: Workshop: Quinto incontro di combinatoria dei sistemi di radici, Cortona
- *April 2017*: Oberseminar, Universität Köln
- *January 2017*: Algebra Seminar, University of Haifa
- *November 2016*: Algèbre et Géométrie seminar, LMNO, Université de Caen
- *November 2016*: Séminaire Quantique, IRMA, Strasbourg
- *November 2016*: Oberseminar Darstellungstheorie, Universität Bonn
- *June 2016*: Yau Mathematical Sciences Center, Tsinghua University, Beijing
- *April 2016*: Séminaire Philippe Flajolet, IHP
- *April 2016*: Séminaire Lotharingien de Combinatoire 76
- *December 2015*: Algebraic combinatoric session, CMS winter meeting, Montreal
- *October 2015*: Colloquium, Department of Mathematics, Durham university
- *January 2015*: MRC special section, AMS Joint Meeting, San Antonio
- *December 2014*: Séminaire du LaCIM, UQAM, Montreal
- *November 2014*: Workshop on Cluster algebras and Representation theory, KIAS, Seoul
- *October 2014*: Applied Algebra Seminar, Toronto

- *October 2014*: Generalized Catalan Algebraic Combinatorics, AMS sectional meeting, Halifax
- *September 2014*: Seminario di algebra e geometria, Università di Roma “Sapienza”
- *May 2014*: Workshop on Hall and cluster algebras, CRM (Montreal)
- *May 2013*: 6th Southeastern Lie Theory Workshop
- *April 2013*: Maurice Auslander International Conference
- *April 2013*: AMS Sectional Meeting, Special Session on Cluster Algebras and Related Combinatorics