

# ROSANNA LAKING

## PERSONAL INFORMATION

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DATE OF BIRTH: 28 February 1989  
NATIONALITY: British  
WORK ADDRESS: Università di Verona, Strada le Grazie 15, 37134 Verona, Italy  
EMAIL: [rosanna.laking@univr.it](mailto:rosanna.laking@univr.it)  
LANGUAGES: English (native), Italian

## EMPLOYMENT HISTORY

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DEC 2021 Tenure-track Lecturer (RtdB), **University of Verona**, Verona, Italy.  
- PRESENT

APR 2021 Postdoctoral Researcher, **University of Verona**, Italy.  
- DEC 2021 Mentor: Prof. Lidia ANGELERI HÜGEL

JAN 2021 Marie Skłodowska-Curie Fellow, **University of Verona**, Italy.  
- MAR 2021 Mentor: Prof. Lidia ANGELERI HÜGEL

OCT 2020 Research Fellow, **Hausdorff Research Institute for Mathematics**, Germany.  
- DEC 2020 Part of Junior Trimester Program: New Trends in Representation Theory

JAN 2019 Marie Skłodowska-Curie Fellow, **University of Verona**, Italy.  
- SEPT 2020 Mentor: Prof. Lidia ANGELERI HÜGEL

OCT 2017 Postdoctoral Researcher, **Max Planck Institute for Mathematics**, Germany.  
- SEPT 2018 Mentor: Prof. Jan SCHRÖER

OCT 2016 Postdoctoral Researcher, **University of Bonn**, Germany.  
- SEPT 2017 Mentor: Prof. Jan SCHRÖER

JUN 2016 Postdoctoral Researcher, **University of Manchester**, UK.  
- AUG 2016 Mentor: Prof. Mike PREST

## EDUCATION HISTORY

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SEPT 2012 PhD in **PURE MATHEMATICS**, **University of Manchester**, UK  
- MAY 2016 Thesis title: "String algebras in representation theory" | Advisor: Prof. Mike PREST

SEPT 2008 MSci (1st class) in **MATHEMATICS**, **University of Bristol**, UK  
- JULY 2012 Project title: "Equivalences of categories" | Advisor: Prof. Jeremy RICKARD

## PUBLISHED PAPERS

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- *Simples in a cotilting heart* (with L. ANGELERI HÜGEL and I. HERZOG).  
*Mathematische Zeitschrift*, Volume 307, Article number 12 (2024).
- *Infinite-dimensional representations of algebras*.  
in *Modern Trends in Algebra and Representation Theory*.  
*Cambridge University Press*, LMS Lecture Note Series, Number 486, 146–168 (2023).
- *Cosilting modules over cluster-tilted algebras of type  $\tilde{A}$*  (with K. BAUR).  
*Journal of Pure and Applied Algebra*, Volume 226, Issue 10 (2022).
- *Cotilting sheaves over weighted noncommutative regular projective curves* (with D. KUSSIN).  
*Documenta Mathematica*, Volume 25, 1029–1077 (2020).
- *Definability and approximations in triangulated categories* (with J. VITÓRIA).  
*Pacific Journal of Mathematics*, Volume 306, 557–586 (2020).
- *Purity in compactly generated derivators and t-structures with Grothendieck hearts*.  
*Mathematische Zeitschrift*, Volume 295, 1615–1641 (2020).

- *Krull-Gabriel dimension and the Ziegler spectrum.*  
in *Proceedings of the 17th Workshop and International Conference on Representations of Algebras.*  
*American Mathematical Society, Contemporary Mathematics Series, Volume 705, 115–130 (2018).*
- *Krull-Gabriel dimension of a domestic string algebra* (with M. PREST and G. PUNINSKI).  
*Transactions of the Amererican Mathematical Society, Volume 370, 4813–4840 (2018).*
- *The Ziegler spectrum for derived-discrete algebras* (with K.K. ARNESEN, D. PAUKSZTELLO and M. PREST). *Advances in Mathematics, Volume 319, 653–698 (2017).*
- *Morphisms between indecomposable complexes in the bounded derived category of a gentle algebra* (with K.K. ARNESEN and D. PAUKSZTELLO).  
*Journal of Algebra, Volume 467, 1–46 (2016).*

## PREPRINTS AND PAPERS IN PREPARATION

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- *Mutation of torsion pairs for a finite-dimensional algebra* (with L. ANGELERI HÜGEL and F. SENTIERI). In preparation.
- *Bricks and mutation* for the proceedings of the 20th Workshop and International Conference on Representations of Algebras to be published by the European Mathematical Society in the *EMS series of congress reports*. Submitted for peer review.
- *Torsion pairs via the Ziegler spectrum* (with L. ANGELERI HÜGEL and F. SENTIERI). Preprint arXiv:2403.00475, 2024.
- *Mutation and torsion pairs* (with L. ANGELERI HÜGEL, J. STOVICEK and J. VITÓRIA). Preprint arXiv:2201.02147, 2022.

## PRIZES AND OTHER DISTINCTIONS

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JAN 2023 Abilitazione Scientifica Nazionale  
*Professore universitario di Seconda Fascia 01/A2 - GEOMETRIA E ALGEBRA*

OCT 2022 Fellowship to attend Trimester Programme - Hausdorff Institute, Bonn

-Nov 2022 *Research program "Spectral Methods in Algebra, Geometry and Topology"*

AUG 2022 International Conferences on Representations of Algebras (ICRA) Award  
*Awarded by scientific committee of the ICRA for outstanding work by young mathematicians in the field of Representations of Finite-Dimensional Algebras*

OCT 2020 Fellowship to attend Junior Trimester Programme - Hausdorff Institute, Bonn

-DEC 2020 *Research program "New Trends in Representation Theory"*

JAN 2019 Marie Skłodowska-Curie Individual Fellowship

-MAR 2021 *Two year research fellowship*

## MEMBERSHIP OF PROJECTS

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OCT 2023 Member of PRIN (SQUARE)

-SEP 2025 *Project on Structures for Quivers, Algebras and Representations (SQUARE)*

MAR 2021 Member of the Network on Silting

-FEB 2024 *Network of 18 researchers funded by the the Deutsche Forschungsgemeinschaft*

JAN 2020 External member of the REDCOM project

-DEC 2022 *Project funded by the Fondazione Cariverona*

## MAIN SPEAKER AT CONFERENCES, MEETINGS AND WORKSHOPS

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SEP 2024 **Women in Representation Theory: Quivers, mutations, and beyond,**  
*Bielefeld University, Germany*  
Title: “Torsion pairs and the Ziegler spectrum”

JUL 2024 **Simple-mindedness, silting and stability,**  
*University of Cumbria, Ambleside Campus, U.K*  
 Title: "Mutability criteria for rigid subcategories"

JUL 2024 **Perspectives in Representation Theory, 9ECM Satellite Conference,**  
*University of Coimbra, Portugal (invited speaker)*  
 Title: "Tilts of the module category and cosilting pairs"

DEC 2023 **Representation Theory and Non-Commutative Geometry / ARTIG 3,**  
*University of Paderborn, Germany (invited speaker, delivered online)*  
 Title: "Extending the brick/ $\tau$ -rigid correspondence"

SEPT 2023 **Silting in Representation Theory, Singularities, and Noncommutative Geometry,**  
*CMO-BIRS, Casa Matemática Oaxaca, Mexico (invited participant and selected speaker)*  
 Title: "Simple tilts and mutation"

MAR 2023 **Combinatorial aspects of representation theory,**  
*Norwegian Academy of Sciences and Letters, Oslo, Norway (invited speaker)*  
 Title: "Mutation of cosilting sets"

FEB 2023 **Representation Theory of Quivers and Finite Dimensional Algebras,**  
*Mathematisches Forschungsinstitut Oberwolfach, Germany (selected plenary)*  
 Title: "Mutation of closed sets of the Ziegler spectrum"

OCT 2022 **A Path in Algebra,**  
*University of Padova, Italy (invited speaker)*  
 Title: "Simple objects in the heart"

SEPT 2022 **Representation Theory and Triangulated Categories,**  
*University of Paderborn, Germany (invited speaker)*  
 Title: "Injective-like objects in triangulated categories"

SEPT 2022 **Silting Theory, Algebras and Representations,**  
*Prague, Czech Republic (invited speaker)*  
 Title: "Mutation and the Ziegler Spectrum"

AUG 2022 **20th International Conference on Representations of Algebras,**  
*Buenos Aires, Argentina (ICRA prizewinner talk)*  
 Title: "Simples in a cotilting heart"

AUG 2022 **20th International Conference on Representations of Algebras,**  
*Montevideo, Uruguay (invited workshop speaker)*  
 Title: "Torsion pairs and mutation" (series of three talks)

JAN 2022 **Flash Talks in Representation Theory,**  
*NTNU, Norway (invited speaker)*  
 Title: "Simples objects in the heart and their injective envelopes"

OCT 2021 **Homological Methods in Representation Theory,**  
*Fraueninsel, Germany (invited speaker)*  
 Title: "Mutation in large silting theory"

SEPT 2021 **Celebration of the work of Bill Crawley-Boevey (online)**  
*University of Manchester, UK (invited speaker)*  
 Title: "Mutation in large silting theory"

JAN 2020 **Representation Theory of Quivers and Finite Dimensional Algebras,**  
*Mathematisches Forschungsinstitut Oberwolfach, Germany (selected plenary)*  
 Title: "Torsion pairs for cluster-tilted algebras of type  $\tilde{A}$ "

SEPT 2019 **Representation Theory in Bielefeld - Past and Future,**  
*University of Bielefeld, Germany (invited speaker)*  
 Title: "Infinite-dimensional representations over finite-dimensional algebras"

JUN 2019 **Conference: Interactions between Representation Theory, Algebraic Topology and Commutative Algebra (IRTACA) follow up,**  
*Centre de Recerca Matemàtica, Spain (invited speaker)*  
 Title: "Definability and t-structures in triangulated categories"

APR 2019 **Isfahan Conference on Representations of Algebras,**  
*University of Isfahan, Iran (invited speaker)*  
Title: “Cosilting modules over cluster-tilted algebras”

AUG 2018 **18th International Conference on Representations of Algebras,**  
*Prague, Czech Republic (selected plenary)*  
Title: “Finiteness conditions on the heart of a  $t$ -structure”

APR 2018 **Conference in Memory of Gena Puninski,**  
*University of Manchester, UK (invited speaker)*  
Title: “Purity in compactly generated derivators”

APR 2018 **Discrete Categories in Representation Theory,**  
*University of Bielefeld, Germany (invited speaker)*  
Title: “Discrete categories and indecomposable objects”

AUG 2016 **17th International Conference on Representations of Algebras,**  
*University of Syracuse, USA (selected plenary)*  
Title: “Indecomposable objects in the homotopy category of a derived-discrete algebra”

## CONTRIBUTED TALKS AT CONFERENCES, MEETINGS AND WORKSHOPS

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AUG 2019 **Two weeks of silting theory,**  
*University of Stuttgart, Germany*  
Title: “Cosilting modules over cluster-tilted algebras of type  $\tilde{A}$ ”

AUG 2017 **Workshop on the Model Theory of Modules, Algebras and Categories,**  
Ettore Majorana Centre for Scientific Culture, Erice, Italy  
Title: “Locally coherent hearts and elementary cogenerators”

JUN 2016 **Young Women in Representation Theory,**  
*University of Bonn, Germany*  
Title: “The Krull-Gabriel dimension of a category”

JUN 2015 **Workshop on Cluster Algebras and Finite-dimensional Algebras,**  
*University of Leicester, UK*  
Title: “Transfinite powers of the radical and the Ziegler spectrum”

OCT 2014 **Workshop on Cluster Algebras and Preprojective algebras,**  
University of Cardiff, UK  
Title: “Morphisms in  $\mathcal{K}^b(\text{proj } \Lambda)$  for  $\Lambda$  a gentle algebra”

AUG 2014 **16th International Conference on Representations of Algebras,**  
*Tsinghua Sanya International Mathematics Forum, China*  
Title: “Morphisms in  $\mathcal{K}^b(\text{proj } \Lambda)$  for  $\Lambda$  a gentle algebra”

## OTHER INVITED SEMINARS

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OCT/Nov 2023 **Aarhus Homological Algebra Symposium,**  
*Aarhus University, Denmark*  
Title: “Cosilting sets and the Ziegler spectrum”

JUN 2023 **Algebra and Representation Theory Seminar,**  
*Roma Tor Vergata, Italy*  
Title: “Cosilting complexes and asymptotic triangulations of the annulus”

Nov 2022 **Seminar series at Hausdorff Trimester Program,**  
*Spectral Methods in Algebra, Geometry and Topology, HIM Bonn, Germany*  
Title: “Grothendieck hearts in the derived category of a finite-dimensional algebra”

Nov 2021 **Representation Theory of Algebras and Applications (Brazil),** online  
Title: “Wide intervals and mutation”

Nov 2021 **Africa math seminar,** online  
Title: “Wide intervals and mutation”

OCT 2021 **Seminar Alexander Zavadskij on Representation of Algebras (Columbia),** online  
Title: “Wide intervals and mutation”

MAR 2021 **NTNU algebra seminar**, online  
 Title: "Mutation and minimal inclusions of torsion classes"

MAR 2021 **Aarhus algebra seminar**, online  
 Title: "Mutation and minimal inclusions of torsion classes"

DEC 2020 **Bristol algebra seminar**, online  
 Title: "Mutation of large cosilting complexes"

DEC 2020 **Northeastern representation theory seminar**, online  
 Title: "Mutation of large cosilting complexes"

JUN 2020 **MALGA seminar**, online  
 Title: "Minimal inclusions of torsion classes and cosilting mutation"

APR 2019 **Pure Maths Colloquium**,  
*University of St Andrews, UK*  
 Title: "Cosilting modules over cluster-tilted algebras"

MAR 2019 **MALGA seminar**,  
*University of Verona, Italy*  
 Title: "Definability and approximation theory in triangulated categories"

DEC 2017 **Bristol Algebra Seminar**,  
*University of Bristol, UK*  
 Title: "Derived equivalences arising from cotilting modules and finiteness conditions"

MAY 2017 **Oberseminar Algebra**,  
*University of Stuttgart, Germany*  
 Title: "Functor categories and techniques for classifying indecomposable objects"

MAR 2017 **BLOC Meeting**,  
*City University London, UK (invited speaker)*  
 Title: "Indecomposable objects in the homotopy category of derived-discrete algebras"

FEB 2017 **MALGA Seminar**,  
*University of Verona, Italy*  
 Title: "Classification of indecomposable modules via categories of functors"

Nov 2016 **Oberseminar Darstellungstheorie**,  
*University of Bonn, Germany*  
 Title: "Krull-Gabriel dimension for string algebras"

Nov 2016 **BIREP Seminar**,  
*University of Bielefeld, Germany*  
 Title: "Krull-Gabriel dimension, Ziegler spectra of module categories and applications to compactly generated triangulated categories"

JAN 2016 **Algebra and Number Theory Seminar**,  
*University of Graz, Austria*  
 Title: "The Krull-Gabriel dimension of a category"

APR 2016 **47th meeting of the ARTIN network**,  
*University of Glasgow, UK (invited speaker)*  
 Title: "The Ziegler spectrum of a derived-discrete algebra."

DEC 2015 **Lancashire Yorkshire Model Theory Seminar**,  
*University of Central Lancashire, UK*  
 Title: "Morphisms between pointed modules and pp formulas"

JUN 2015 **Oberseminar Darstellungstheorie**,  
*University of Bonn, Germany*  
 Title: "Morphisms in the bounded derived category of a gentle algebra"

DEC 2014 **Leicester Pure Mathematics Seminar**,  
*University of Leicester, UK*  
 Title: "Morphisms in  $\mathcal{K}^b(\text{proj}\Lambda)$  for  $\Lambda$  a gentle algebra"

Nov 2014 **Leeds Algebra Seminar**,  
*University of Leeds, UK*

## TEACHING EXPERIENCE

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MAR 2024 **Algebraic Geometry**, University of Verona, Italy  
- JUN 2024 *Lectures and exercise classes for Masters students (6 CFU)*

MAR 2024 **Algebra lineare**, University of Verona, Italy  
- JUN 2024 *Lectures for first year computer science undergraduate students (6 CFU)*

MAR 2023 **Algebraic Geometry**, University of Verona, Italy  
- JUN 2023 *Lectures and exercise classes for Masters students (6 CFU)*

MAR 2023 **Algebra lineare**, University of Verona, Italy  
- JUN 2023 *Lectures for first year computer science undergraduate students (6 CFU)*

NOV 2022 **Torsion pairs in abelian categories**, University of Padova, Italy  
- FEB 2023 *Reading course in PhD program, joint with J. Vitória (24 hours)*

MAR 2022 **Algebra**, University of Verona, Italy  
- JUN 2022 *Leading tutorials and setting exercises for second year undergraduate students*

MAR 2022 **Algebraic Geometry**, University of Verona, Italy  
- JUN 2022 *Lectures and exercise classes for Masters students (4 CFU)*

MAR 2022 **Algebra lineare**, University of Verona, Italy  
- JUN 2022 *Lectures for first year computer science undergraduate students (6 CFU)*

APR 2021 **Representation theory**, University of Verona, Italy  
- JUN 2021 *Lectures for Masters students (3 CFU)*

OCT 2020 **London Mathematical Society Autumn Algebra School**, online  
*Three online lectures for new PhD students at UK universities*

MAR 2020 **Algebraic Geometry**, University of Verona, Italy (online)  
- JUN 2020 *Leading tutorials and setting exercises for Masters students*

MAR 2019 **Representation Theory**, University of Verona, Italy  
- JUN 2019 *Leading tutorials and setting exercises for Masters students*

JAN 2019 **Lectures on Purity in Triangulated Categories**, University of Verona, Italy  
*Short lecture series for graduate students*

OCT 2015 **Foundation year mathematics (ON1)**, University of Manchester, UK  
- JAN 2016 *Leading tutorials for groups of 30-40 students introducing basic pure mathematics*

JUL 2015 **MSc Writing Clinic**, University of Manchester, UK  
- SEPT 2015 *One-to-one tutoring MSc students to improve their mathematical writing skills*

OCT 2014 **Foundation year mathematics (OB1)**, University of Manchester, UK  
- JAN 2015 *Leading tutorials for groups of 30-40 students introducing basic pure mathematics*

FEB 2014 **Linear algebra**, University of Manchester, UK  
- JUN 2014 *Leading tutorials for groups of 8-10 undergraduate students in concurrence with lectures*

FEB 2013 **Propositional logic**, University of Manchester, UK  
- JUN 2013 *Assisting the lecturer in exercise classes for groups of 30-40 undergraduate students*

## STUDENT SUPERVISION

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DEC 2023 **Viola Conte**, University of Padova, Italy  
- SEPT 2024 *Master's Thesis*

## ORGANISATION OF CONFERENCES AND SEMINARS

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MAY 2020 **FD seminar**  
- MAY 2024 *Weekly online seminar with international audience of around 30-70 participants*

NOV 2020 **19th International Conference on Representations of Algebras**  
*Online international conference with 770 registered participants*

Nov 2019 **Reading Seminar on  $\infty$ -Categories**  
-FEB 2020 *University of Verona, Italy*

JAN 2016 **British Postgraduate Model Theory Conference**  
*University of Manchester, UK*

SEPT 2015 **Infinite-dimensional Representations of Finite-dimensional Algebras**  
*University of Manchester, UK*

## RESEARCH VISITS

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OCT/NOV 2023 Aarhus University, Denmark (1 week)  
*Hosts: Dr. Amit Shah and Dr. Raphael Bennett-Tennenhaus.*

SEP 2021 University of Stuttgart, Germany (1 week)  
*Host: Dr. Alexandra Zvonareva.*

JAN 2016 University of Graz, Austria (1 week + 1 week)  
AND FEB 2019 *Host: Prof. Karin Baur.*

JAN 2017 University of Verona, Italy (1 month)  
-FEB 2017 *Host: Prof. Lidia Angeleri Hügel.*

JUN 2014 NTNU, Trondheim, Norway (1 week)  
*Host: Kristin Krogh Arnesen.*

## OUTREACH AND OTHER RESPONSIBILITIES

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NOV 2022 **Member of editorial board of the London Mathematical Society newsletter**  
-PRESENT *Commissioning of features articles and other editorial duties*

MAY 2020 **MSCA-IF webinar**, University of Verona (online)  
*Short presentation at careers event, speaking about my experience as a MSCA Fellow*

JUL 2015 **Athena Swan Committee member**, University of Manchester, UK

-AUG 2016 *Student representative on committee promoting the advancement of gender equality*

JUL 2015 **Making Maths at Manchester**, University of Manchester, UK  
*Outreach event for school students in their final year of study*

SEPT 2011 **Maths Café tutor**, University of Bristol, UK  
*Informal drop-in sessions for second year students to accompany formal lecture courses*