

# Oded Yacobi

## Curriculum Vitae

### Education

- 2004–2009 **Ph.D. Mathematics**, THE UNIVERSITY OF CALIFORNIA, SAN DIEGO.  
Thesis: An analysis of multiplicity spaces in classical symplectic branching  
Advisor: Nolan R. Wallach
- 1999–2003 **B.A. Mathematics**, CORNELL UNIVERSITY.

### Employment

- 2021–Present **Associate Professor**, UNIVERSITY OF SYDNEY.
- 2016–2020 **Senior Lecturer**, UNIVERSITY OF SYDNEY.
- 2013–2015 **Lecturer**, UNIVERSITY OF SYDNEY.
- 2010–2013 **Postdoctoral Fellow**, UNIVERSITY OF TORONTO.  
Mentor: Joel Kamnitzer
- 2009–2010 **Postdoctoral Fellow**, UNIVERSITY OF TEL AVIV.  
Mentor: Joseph Berntstein

### Grants, Fellowships & Awards

#### Research

- 2023–2025 **Discovery Project**, AUSTRALIAN RESEARCH COUNCIL.  
Grant ID DP230100654  
Title: Braid groups via representation theory and machine learning  
co-Chief Investigator: G. Williamson, Partner Investigator: B. Elias  
Amount funded: 382,000 AUD
- 2019 **Visiting Faculty Program Fellow**, WEIZMANN INSTITUTE OF SCIENCE.
- 2019 **Simons CRM Scholar**, CENTRE DE RECHERCHES MATHÉMATIQUES.  
Administered jointly by the CRM and the Simons Foundation  
Part of semester program "Quiver Varieties and Representation Theory"
- 2018–2021 **Discovery Project**, AUSTRALIAN RESEARCH COUNCIL.  
Grant ID DP180102563  
Title: New dualities in modular representation theory  
co-Chief Investigator: K. Coulembier, Partner Investigator: J. Pevtsova  
Amount funded: 273,485 AUD
- 2015–2017 **Discovery Early Career Research Award**, AUSTRALIAN RESEARCH COUNCIL.  
Grant ID DE150101161  
Title: Quantum groups and categorification in geometric representation theory  
Amount funded: 330,000 AUD

*School of Mathematics and Statistics – University of Sydney*

📞 04 1223 1781 • 📠 02 9351 5460 • ✉ [oded.yacobi@sydney.edu.au](mailto:oded.yacobi@sydney.edu.au)

🌐 [www.maths.usyd.edu.au/u/oyacobi](http://www.maths.usyd.edu.au/u/oyacobi)

1/6

- 2012–2014 **AMS-Simons Travel Grant**, UNIVERSITY OF TORONTO.  
Administered jointly by the AMS and the Simons Foundation  
Amount funded: 5,000 USD
- 2007–2009 **ARCS Research Fellow**, UNIVERSITY OF CALIFORNIA, SAN DIEGO.  
Administered by the ARCS Foundation  
Amount funded: 50,000 USD
- Teaching**
- 2019 **2020 Strategic Education Education Grant**, UNIVERSITY OF SYDNEY.  
Title: Reading and Writing Mathematics (Revisited)  
co-developer: S. Tillmann  
Amount funded: 12,000 AUD
- 2017 **DVC Education/Small Education Grant**, UNIVERSITY OF SYDNEY.  
Title: Reading and Writing Mathematics (OLE - Undergraduate)  
co-developer: S. Tillmann  
Amount funded: 10,000 AUD
- 2013 **Atkinson Award for Outstanding Teaching**, UNIVERSITY OF TORONTO.
- 2008 **Outstanding Teaching Award**, UNIVERSITY OF CALIFORNIA, SAN DIEGO.

## Publications

1. A. Haidar, O. Yacobi, "Relations between generalised Gelfand-Tsetlin and Kazhdan-Lusztig bases of  $S_n$ ". To appear in **FPSAC Proceedings**. Arxiv: 2411.04432
2. J., Gibson, G. Williamson, O. Yacobi, "4-Strand Burau is unfaithful modulo 5". To appear in **Journal of Experimental Mathematics**. Arxiv:2310.02403
3. F. Gossow, O. Yacobi, "On the action of the Weyl group on canonical bases". To appear in **Mathematische Zeitschrift**. Arxiv:2306.08857
4. J. Kamnitzer, B. Webster, A. Weekes, O. Yacobi, "Lie algebra actions on module categories for truncated shifted Yangians", **Forum of Mathematics, Sigma** (2024), Vol. 12, 1-69.
5. I. Halacheva, A. Licata, I. Losev, O. Yacobi, "Categorical braid group actions and cactus groups". **Advances in Math.**, Vol. 429, 2023
6. J. Lim, O. Yacobi, "On Schutzenberger modules of the cactus group". **Algebraic Combinatorics**, Volume 6, no. 3 (2023), p.773-788..
7. F. Gossow, O. Yacobi, "On the action of the long cycle on Kazhdan-Lusztig basis", **Seminaire Lotharingien de Combinatoire**, FPSAC Proceedings 2022.
8. D. Muthiah, A. Weekes, O. Yacobi, "On a conjecture of Pappas-Rapoport about the standard local model of  $GL_d$ ", **Journal für die Reine und Angewandte Mathematik** 772 (2021), 175-185 .
9. D. Muthiah, A. Weekes, O. Yacobi, "The equations defining affine Grassmannians in type A and a conjecture of Kreiman, Lakshmibai, Magyar, and Weyman", **IMRN**, 3 (2022), 119, 1922-1972.
10. B. Webster, A. Weekes, O. Yacobi, "The quantum Mirković-Vybornov isomorphism", **Representation Theory**, 24 (2020), 38-84.
11. J. Kamnitzer, P. Tingley, B. Webster, A. Weekes, O. Yacobi, "On category  $\mathcal{O}$  for affine Grassmannian slices and categorified tensor products", **Proceedings of the London Mathematical Society**, (3) 119 (2019), no. 5, 1179-1233.
12. J. Kamnitzer, P. Tingley, B. Webster, A. Weekes, O. Yacobi, "Highest weights for truncated shifted Yangians and product monomial crystals", **Journal of Combinatorial Algebra**, 3 (2019), no. 3, 237-303.
13. A. Arunasalam, J. Ciappara, D. M. H. Nguyen, S. J. Tan, O. Yacobi, "A Note on Categorification  
*School of Mathematics and Statistics – University of Sydney*

☎ 04 1223 1781 • 📞 02 9351 5460 • ✉ oded.yacobi@sydney.edu.au

🌐 [www.maths.usyd.edu.au/u/oyacobi](http://www.maths.usyd.edu.au/u/oyacobi)

2/6

- and Spherical Harmonics”, **Algebras and Representation Theory**, (2019),  
<https://doi.org/10.1007/s10468-019-09886-4>.
14. H. Queffelec, A. Savage, O. Yacobi, “An equivalence between truncations of categorified quantum groups and Heisenberg categories”, **Journal de l’École Polytechnique**, Tome 5 (2018), 197-238.
  15. J. Kamnitzer, D. Muthiah, A. Weekes, O. Yacobi, “Reducedness of affine Grassmannian slices in type A”, **Proceedings of the American Mathematical Society**, 146, No. 2, 861-874, (2018).
  16. J. Hong, O. Yacobi, “Quantum polynomial functors”, **Journal of Algebra** (479), 326-367, (2017).
  17. A. Savage, O. Yacobi, “Categorification and Heisenberg doubles arising from towers of algebras”, **J. Comb. Th. Series A** 129, 19-56, (2015).
  18. J. Kamnitzer, B. Webster, A. Weekes, O. Yacobi, “Yangians and quantizations of slices in the affine grassmannian”, **Algebra & Number Theory** 8-4, 857-893 (2014).
  19. J. Hong, O. Yacobi, “Polynomial functors and categorifications of Fock space II”, **Advances in Math.** Volume 237, 360-403, (2013).
  20. J. Hong, O. Yacobi, “Polynomial representations of general linear groups and categorifications of Fock space”, **Algebras and Representation Theory** 16 (2013), no.5, 1273-1311.
  21. J. Hong, A. Touzé, O. Yacobi, “Polynomial functors and categorifications of Fock space I”, **Symmetry: Representation Theory and its Applications in honor of Nolan Wallach**, Progress in Mathematics, Birkäuser, (2012).
  22. S. Kim, O. Yacobi, “A basis for the symplectic group branching algebra”, **Journal of Algebraic Combinatorics**, Volume 35, Issue 2 (2012), 269-290
  23. A. Aizenbud, O. Yacobi, “A quantum analogue of Kostant’s theorem”, **Journal of Algebra**, 343 (2011), 183-194.
  24. O. Yacobi, “An analysis of the multiplicity spaces in branching of symplectic groups”, **Selecta Math N.S.**, Volume 16, Issue 4, (2010).
  25. N.R. Wallach, O. Yacobi, “A multiplicity formula for tensor products of  $SL_2$ -modules and an explicit  $Sp_{2n}$  to  $Sp_{2n-2} \times Sp_2$  branching formula”, **Contemporary Math.**, 490, (2009).
  26. O. Yacobi, Y. Yacobi, “A new related-message attack on RSA”, **Lecture Notes in Comp. Sci.**, 3386/3895, (2005).

## Supervision

### *Postdoc Supervisor*

Edmund Heng (2025-2026)

Bregje Pauwels (2019-2021, currently lecturer at Macquarie University)

### *PhD Supervisor*

Giulian Wiggins (2017-2023, first postdoc at Macquarie University)

Joel Gibson (2016-2020, first postdoc at SMRI)

Joshua Ciappara (2017-21, first job at Macquarie Group)

### *Associate PhD Supervisor*

Gaston Burrull (2019-2023)

Chris Hone (2021-2024)

Alexander Kersch (2015-19)

Finn Klein (2024 - ongoing)

Eloise Little (2022-ongoing)

Yeeka Yau (2017-21)

*School of Mathematics and Statistics – University of Sydney*

☎ 04 1223 1781 • ☎ 02 9351 5460 • ✉ [oded.yacobi@sydney.edu.au](mailto:oded.yacobi@sydney.edu.au)

🌐 [www.maths.usyd.edu.au/u/oyacobi](http://www.maths.usyd.edu.au/u/oyacobi)

### *Honours Supervisor*

Oliver Alexander (2017)

Max Boyle (2025)

Joshua Ciappara\* (2015)

Fern Gossow\* (2021)

Nikola Grujic (2022)

Ali Haidar (2024)

Angus Johnson (2018-19)

Jongmin Lim\* (2020)

Callum Metzke (2024)

Hemang Punyane (2025)

Giulian Wiggins (2016)

Michael Zhao (2020)

\*Recipient of University Medal and Joye Prize for Most Outstanding Honours Student

### *Graduate Diploma Thesis Supervisor*

Michael Crawford (2015)

## Service to the Profession

1. Associate Editor of the Journal of the Australian Mathematical Society.
2. Co-organiser of the following events:
  - Categorification in Representation Theory, University of Sydney, 2023.
  - The Hendoff - conference in honour of Anthony Henderson, University of Sydney, 2022.
  - Representation Theory Session, AustMS Meeting, online, 2020.
  - Triangulated Categories in Geometry and Representation Theory, University of Sydney, 2019.
  - Geometric Representation Theory MATRIX Workshop, Victoria, 2018.
  - Representation Theory Session, AustMS Meeting, Macquarie University, 2017.
  - Future Directions in Representation Theory, University of Sydney, 2017.
  - Representation Theory Session, AustMS Meeting, Australian National University, 2016.
  - International W-algebras Workshop, University of Melbourne, 2016.
  - Representation Theory Day, University of Sydney, 2015.
  - Higher Structures in Representation Theory, The Fields Institute, 2012.
3. Organiser of many seminars including the University of Sydney's weekly Algebra Seminar from 2013-2015, and the University of Toronto's weekly Geometric Representation Theory Seminar from 2010-2013.
4. Referee for: *Advances in Math.*, *Algebra and Representation Theory*, *Annales Scientifiques de l'École Normale Supérieure*, *Cambridge Journal of Mathematics*, *Canadian Journal of Mathematics*, *Compositio*, *Journal of Algebra*, *Journal of Algebraic Combinatorics*, *Journal of the Australian Mathematics Society*, *Journal of Comb. Theory Series A*, *Journal of the London Math. Soc.*, *Math. Zeitschrift*, *Orbita Mathematicae*, *Pacific Journal of Mathematics*, *Quarterly Journal of Mathematics*, *Representation Theory*, *Selecta Math. N.S.*, *Transactions of the AMS*, *Transformation Groups*.
5. Referee for ARC DECRA, DP grant, and Future Fellowships.
6. Referee for UQ and ANU Master's and PhD theses.

School of Mathematics and Statistics – University of Sydney

☎ 04 1223 1781 • ☎ 02 9351 5460 • ✉ [oded.yacobi@sydney.edu.au](mailto:oded.yacobi@sydney.edu.au)

🌐 [www.maths.usyd.edu.au/u/oyacobi](http://www.maths.usyd.edu.au/u/oyacobi)

## Service to the University

1. Associate Head (Research), 2024-ongoing.
2. Course Coordinator for the Master in Mathematical Sciences, 2018-2023.
3. Deputy Chair of Postgraduate Studies, 2017-2019.
4. Level C representative on the Management Committee, 2016-2018.
5. Co-developer of OLE course *Mathematics and Writing* with Stephan Tillman, 2017.

## Selected Talks

- *Oberseminar*, Max Planck Institute for Mathematics, Oct 2024.
- *Algebra Seminar*, University of Oregon, Oct 2023.
- *Algebra and Algebraic Geometry Seminar*, University of Washington, Oct 2023.
- *Duels and Duality: a fable about the life and mathematics of Évariste Galois*, University of Sydney, International Day of Mathematics Celebration, Mar 2023. (Included an interview with Richard Glover on ABC Radio.)
- *Algebraic Geometry and Representation Theory Seminar*, Weizmann Institute, Jan 2023.
- *Representation Theory Seminar*, Beijing Institute of Technology, China, April 2022.
- *Geometry, Physics, and Representation Theory Seminar*, Northeastern University, USA, March 2022.
- *Braids in Representation Theory and Algebraic Combinatorics*, ICERM, USA, February 2022.
- *Algebraic and Geometric Categorification*, BIRS-Oaxaca, Mexico, December 2019.
- *Algebraic Geometry and Representation Theory Seminar*, Weizmann Institute, Sep 2019.
- *Quiver Varieties and Representation Theory*, Centre de Recherches Mathématiques, Montréal, August 2019.
- *Categorification and Higher Representation Theory*, Institute Mittag Leffler, Sweden, July 2018.
- *Pure Maths Seminar*, University of Melbourne, Melbourne, February 2018.
- *Categorification, Representation Theory and Symplectic Geometry*, Hausdorff Institute, Bonn, Germany, Nov 2017.
- *Oberseminar*, University of Cologne, Germany, Nov 2017.
- *Australian-Japanese Workshop on Real and Complex Singularities*, University of Sydney, Sep 2017.
- *Australian Category Theory Seminar*, Macquarie University, Apr 2017.
- *Invited Speaker - AMS-MAA Joint Meeting, Special Session*, Seattle, Jan 2016.
- *Representation Theory Seminar*, Universität Bonn, Dec 2015.
- *Rolf Farnsteiner 60th Birthday Conference*, Bielefeld University, Dec 2015.
- *Algebraic Geometry Seminar*, Weizmann Institute, Dec 2015.
- *Colloquium*, University of Adelaide, March 2015.
- *Categorification and Geometric Representation Theory*, Centre de Recherches Mathématiques, Montréal, June 2014.
- *Representation Theory in Geometry, Topology, and Combinatorics Conference*, University of Melbourne, November 2013.
- *Colloquium*, Ben Gurion University, May 2013.
- *Colloquium*, Kansas State University, February 2013.
- *Colloquium*, University of Oklahoma, January 2013.
- *Colloquium*, Oklahoma State University, January 2013.
- *Geometry, Symmetry, and Physics*, Yale University, December 2012.
- *Ottawa-Carleton Joint Algebra Seminar*, University of Ottawa, November 2012.
- *AMS special session on geometric, categorical, and combinatorial methods in representation theory*, Rochester, NY, September 2012.
- *Lie Groups Seminar*, Cornell University, March 2012.
- *Workshop on Category Theoretic Methods in Representation Theory*, University of Ottawa, October 2011.
- *Algebra Seminar*, Université de Paris-Nord, June 2011.
- *68<sup>th</sup> Algebra Day*, University of Ottawa, April 2011.

School of Mathematics and Statistics – University of Sydney

☎ 04 1223 1781 • ☎ 02 9351 5460 • ✉ oded.yacobi@sydney.edu.au

🌐 [www.maths.usyd.edu.au/u/oyacobi](http://www.maths.usyd.edu.au/u/oyacobi)

- *Infinite Dimensional Algebra Seminar*, MIT, April 2011.
- *Lie theory and its applications conference, in honor of Nolan Wallach*, UC San Diego, March 2011.
- *Representation Theory and Quantization*, Fields Institute, February 2011.
- *Workshop on problems and progress in Lie Algebraic Theory*, Weizmann Institute, July 2010.
- *Combinatorial Representation Theory*, Oberwolfach, March 2010.
- *Algebraic Groups and Invariant Theory*, Tiscino, Switzerland, September 2009.
- *Lie Theory Days*, UC Riverside, March 2009.

*School of Mathematics and Statistics – University of Sydney*

☎ 04 1223 1781 • ☎ 02 9351 5460 • ✉ [oded.yacobi@sydney.edu.au](mailto:oded.yacobi@sydney.edu.au)

🌐 [www.maths.usyd.edu.au/u/oyacobi](http://www.maths.usyd.edu.au/u/oyacobi)