

DREW HEARD

Regensburg University \diamond Regensburg, Germany
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EDUCATION

Melbourne University, Melbourne

February 2011 - September 2014

Doctor of Philosophy

- Thesis title: *Morava modules and the $K(n)$ -local Picard group*
- Advisor: Dr. Craig Westerland

Monash University, Melbourne

January 2003 - December 2007

B.Sci in Mathematics

B.Eng (Hons) in Engineering

POSITIONS

Regensburg University, Regensburg, Germany

September 2018 - June 2020

Postdoctoral researcher in SFB 1085 Higher Invariants program.

Haifa University, Haifa, Israel

October 2017 - August 2018

Postdoctoral researcher

Hamburg University, Hamburg, Germany

October 2016 - September 2017

Visiting researcher under SPP 1786 project.

Max Planck Institute for Mathematics, Bonn, Germany

October 2014 - September 2016

Postdoctoral researcher

Arup, Melbourne, Australia

February 2008 - February 2011

Building services engineer

AWARDS AND GRANTS

- 2019 - Research in pairs program, CRM, Barcelona.
- 2018 - Awarded 2 year self-funded postdoctoral position under SPP 1786¹ at Osnabrück University, for a total of 143,800€ (139.800€ for staff, 4,000€ for travel) for the project 'The slice filtration in equivariant and motivic homotopy theory'. Declined due to conflict with position in Regensburg.
- 2016 Hjorth memorial prize for the best pure mathematics PhD in the previous two years, Melbourne University, 2016
- David Hay postgraduate writing-up award, Melbourne University, 2014
- Australian Postgraduate Award (APA) Research Scholarship, 2011-2014. Fully funded scholarship for duration of PhD
- Melbourne Abroad Traveling Scholarship, Melbourne University, 2013
- Chris Ash Price for Mathematics, Monash University, 2006
- Monash Engineering Prize, Monash University, 2005
- Deans List Fellow Award (Science), Monash University, 2005

¹German priority research program in homotopy theory and algebraic geometry, see <https://www.uni-due.de/~bm0032/SPP1786/Web/>.

- Chris Ash Price for Mathematics, Monash University, 2005
- Monash Engineering Prize, Monash University, 2004

PUBLICATION LIST

Published

Barthel, T., Castellana, N., Heard, D., & Valenzuela, G. (2019b). Stratification and duality for homotopical groups. *Adv. Math.*, 354, 106733, 61. Retrieved from <https://doi.org/10.1016/j.aim.2019.106733> doi: 10.1016/j.aim.2019.106733

Heard, D. (2019b). On equivariant and motivic slices. *Algebr. Geom. Topol.*, 19(7), 3641–3681. Retrieved from <https://doi.org/10.2140/agt.2019.19.3641> doi: 10.2140/agt.2019.19.3641

Barthel, T., Heard, D., & Valenzuela, G. (2019). Derived completion for comodules. *Manuscripta mathematica*. Retrieved from <https://doi.org/10.1007/s00229-018-1094-0> doi: 10.1007/s00229-018-1094-0

Barthel, T., Heard, D., & Valenzuela, G. (2018a). The algebraic chromatic splitting conjecture for Noetherian ring spectra. *Math. Z.*, 290(3-4), 1359–1375. Retrieved from <https://doi.org/10.1007/s00209-018-2066-5> doi: 10.1007/s00209-018-2066-5

Barthel, T., Heard, D., & Valenzuela, G. (2018c). Local duality in algebra and topology. *Adv. Math.*, 335, 563–663. Retrieved from <https://doi.org/10.1016/j.aim.2018.07.017> doi: 10.1016/j.aim.2018.07.017

Barthel, T., & Heard, D. (2018). Algebraic chromatic homotopy theory for BP_*BP -comodules. *Proc. Lond. Math. Soc. (3)*, 117(6), 1135–1180. Retrieved from <https://doi.org/10.1112/plms.12158> doi: 10.1112/plms.12158

Heard, D., & Krause, A. (2018). Vanishing lines for modules over the motivic Steenrod algebra. *New York Journal of Mathematics*, 24, 183–199.

Barthel, T., Heard, D., & Valenzuela, G. (2018b). Local duality for structured ring spectra. *J. Pure Appl. Algebra*, 222(2), 433–463. Retrieved from <http://dx.doi.org/10.1016/j.jpaa.2017.04.012> doi: 10.1016/j.jpaa.2017.04.012

Heard, D., Mathew, A., & Stojanoska, V. (2017). Picard groups of higher real K -theory spectra at height $p - 1$. *Compositio Mathematica*, 153(9), 1820–1854. doi: 10.1112/S0010437X17007242

Barthel, T., & Heard, D. (2016). The E_2 -term of the $K(n)$ -local E_n -Adams spectral sequence. *Topology and its Applications*, 206, 190 - 214. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0166864116300050> doi: <http://dx.doi.org/10.1016/j.topol.2016.03.024>

Heard, D., & Stojanoska, V. (2014). K -theory, reality, and duality. *J. K-Theory*, 14(3), 526–555. Retrieved from <http://dx.doi.org/10.1017/is014007001jkt275> doi: 10.1017/is014007001jkt275

Preprint

Barthel, T., Castellana, N., Heard, D., & Valenzuela, G. (2019a). *On stratification for spaces with Noetherian mod p cohomology*. Available at <https://arxiv.org/abs/1904.12841>.

Heard, D. (2019a). *Depth and detection for Noetherian unstable algebras*. Available at <https://arxiv.org/abs/1907.06373>.

Heard, D., Li, G., & Shi, X. D. (2018). *Picard groups and duality for Real Morava E -theories*. Available at <https://arxiv.org/abs/1810.05439>.

Heard, D. (2017). *The homotopy limit problem and the cellular Picard group of Hermitian K -theory*. Available

at <https://arxiv.org/abs/1705.02810>

Heard, D. (2015). The Tate spectrum of the higher real K -theories at height $n = p - 1$. *arXiv e-prints*. Available at <http://arxiv.org/abs/1501.07759>

SEMINAR AND CONFERENCE TALKS

- Oberwolfach workshop on homotopy theory, Oberwolfach, August 2019
- Workshop in Chromatic Homotopy Theory, Caesarea, June 2019
- Regensburg University SFB Lecture, Regensburg, October 2018
- Osnabrück University topology seminar, Osnabrück, February 2018
- Regensburg University topology seminar, Regensburg, January 2018
- Haifa University topology seminar, Haifa, November 2017
- Bonn University topology seminar, Bonn, July 2017
- Barcelona topology workshop, Barcelona, December 2016
- NRW Topology Meeting, Essen, April 2016
- Topology seminar, NTNU, April 2016
- Young Topologists Meeting, July 2015
- European Talbot Workshop, July 2015
- Copenhagen University, February 2015
- Ruhr-Universität Bochum, October 2014
- Université de Strasbourg, October 2014
- University of Chicago Topology Seminar, November 2013
- Northwestern Topology Seminar, November 2013
- John Hopkins University Topology Seminar, November 2013
- MIT Morava E -theory workshop April 2013
- MIT Talbot Workshop, April 2013
- Wesleyan Topology Seminar, March 2013

WORKSHOPS AND CONFERENCES ATTENDED

- Workshop on chromatic homotopy theory, Caesarea Maritime Center, Israel, June 2019
- Oberwolfach Arbeitsgemeinschaft: Elliptic Cohomology according to Lurie, Oberwolfach, April 2019 Lurie
- Workshop on factorization homology, Caesarea Maritime Center, Israel, June 2018
- Masterclass on Tensor triangular geometry and equivariant stable homotopy theory, Copenhagen University, March 2018
- Oberwolfach mini-workshop: Chromatic Phenomena and Duality in Homotopy Theory and Representation Theory, Oberwolfach, March 2018
- Transchromatic homotopy theory, Regensburg, June 2017
- Masterclass: Stratifications and duality in modular representation theory Copenhagen, March 2017
- SPP 1786 Jahrestagung, Wuppertal, March 2017
- Workshop on Hermitian K -theory and trace methods, Bonn, November 2016
- Conference on Topology and Geometry, Bonn, August 2015
- Workshop on Homotopy theory, manifolds, and field theories, Bonn, June 2015
- NRW topology meeting, Münster University, April 2015
- Modular Invariants in Topology and Analysis, University of Regensburg, September 2014
- Higher Invariants Opening Conference, September 2014
- Modern Applications of Homology and Cohomology, University of Minnesota, October 2013

- Midwest Topology Seminar, Wayne State University, October 2013
- MIT Talbot Workshop on Chromatic Homotopy Theory, South Lake Tahoe, April 2013
- Graduate Student Topology & Geometry Conference, Notre Dame, April 2013
- Equivariant, Chromatic, and Motivic Homotopy Theory, Northwestern, March 2013
- Algebraic Topology: Applications and New Directions, Stanford, July 2012 West Coast Algebraic Topology Summer School, Stanford, July 2012
- Australian Mathematical Society annual conference, Wollongong, September 2011
- Group valued moment maps with applications to mathematics and physics, University of Adelaide, September 2011

SERVICE

- Referee for Algebraic & Geometric Topology, Journal of Homotopy and Related Structures, Journal of Pure and Applied Algebra, and Contemporary Mathematics.
- Reviewer for zbMath and MathSciNet.
- Organizer Haifa University topology and geometry seminar 2017-2018.

REFERENCES

Craig Westerland

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University of Minnesota

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Niko Naumann

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Regensburg University

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