

# ANNA PARLAK

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<https://annaparlak.github.io/>

## EMPLOYMENT

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**University of California Davis**, United States *July 2022 - now*  
Krener Assistant Professor

**University of Oxford**, United Kingdom *May 2021 - July 2022*  
Postdoctoral Research Associate in Pure Mathematics  
Funded by the Simons Investigator Award of Professor Vladimir Marković

## EDUCATION

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**University of Warwick**, United Kingdom *October 2017 - August 2021*  
Mathematics, PhD ► Supervisor: Saul Schleimer  
Thesis: *Veering triangulations and polynomial invariants of three-manifolds*

**University of Gdańsk**, Poland *October 2015 - July 2017*  
Mathematics, MSc ► Supervisor: Michał Stukow  
Thesis: *Roots in the mapping class group of a nonorientable surface*

**University of Gdańsk**, Poland *October 2012 - July 2015*  
Mathematics, BSc ► Supervisor: Witold Rosicki  
Thesis: *Relations between knots and planar graphs: Tait's constructions, Fox colourings and quandles*

**University of Gdańsk & Medical University of Gdańsk**, Poland *October 2010 - July 2013*  
Biotechnology, BSc ► Supervisor: Stanisław Ołdziej  
Final project: *Phosphorylation-induced conformational changes of tau protein*

## RESEARCH INTERESTS

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low-dimensional topology • dynamics on 3-manifolds • polynomial invariants of 3-manifolds • pseudo-Anosov flows • veering triangulations • mapping class groups

## PAPERS AND PREPRINTS

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1. *Arbitrarily large veering triangulations with a vanishing taut polynomial*  
[arXiv:2309.01752](https://arxiv.org/abs/2309.01752) [math.GT]. Submitted.
2. *Mutations and faces of the Thurston norm ball dynamically represented by multiple distinct flows*  
[arXiv:2303.17665](https://arxiv.org/abs/2303.17665) [math.GT]. Submitted.
3. *The taut polynomial and the Alexander polynomial*  
J. Topol., 16: 720-756 (2023). [arXiv:2101.12162](https://arxiv.org/abs/2101.12162) [math.GT].
4. *Computation of the taut, the veering and the Teichmüller polynomials*  
Exp. Math., 33:1, 1-26 (2024). [arXiv:2009.13558](https://arxiv.org/abs/2009.13558) [math.GT].
5. *Roots of Dehn twists on nonorientable surfaces* (with Michał Stukow)  
J Knot Theor Ramif, Vol. 28, No. 12, 1950077 (2019). [arXiv:1701.00531](https://arxiv.org/abs/1701.00531) [math.GT].
6. *Roots of crosscap slides and crosscap transpositions* (with Michał Stukow)  
Period Math Hung, Vol. 75, Issue 2, pp. 413 – 419 (2017). [arXiv:1601.06096](https://arxiv.org/abs/1601.06096) [math.GT].

## AWARDS

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- Warwick Mathematics Institute 2022 Thesis Prize
- The Minister of Science and Higher Education Scholarship 2016/2017 (Poland)

## TALKS

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- 2024:** seminars: • Oregon State University
- 2023:** *66th Texas Geometry and Topology Conference*, Rice University, November 2023  
*Knots, Surfaces, and 3-Manifolds*, Casa Matemática Oaxaca, June 2023  
seminars: • UC Berkeley • Australian Geometric Topology Webinar • Temple University  
• Rutgers–New Brunswick • Columbia University • San Jose State University  
short talks: *Oberwolfach: Low-dimensional topology*, January 2023  
*Computational Problems in Low-dimensional Topology III*, Rutgers–Newark, April 2023
- 2022:** *AMS – EMS – SMF International Meeting*, July 2022  
seminars: • Washington University in St. Louis • University of Bristol • UC Davis  
short talks: *Mapping class group and  $\text{Out}(F_n)$* , Institut Henri Poincaré, April 2022
- 2021:** *North Meets South Colloquium*, University of Oxford, November 2021  
*Nearly Carbon Neutral Geometric Topology Conference*, June 2021  
seminars: • University of Copenhagen • University of Oxford • University of Texas at Austin  
• Cornell University
- 2020:** seminars: • Oklahoma State University • UC Riverside
- 2017:** *Young Topologists Meeting 2017*, July 2017
- 2016:** *19th International Workshop for Young Mathematicians*, September 2016  
*18th Andrzej Jankowski Memorial Lecture Mini Conference*, May 2016
- 2015:** *18th International Workshop for Young Mathematicians*, September 2015

## TEACHING EXPERIENCE

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### University of California Davis

- 2023/2024 Instructor, MAT21B **Integral Calculus** (1 × Fall, 1 × Spring)  
Instructor, MAT108 **Introduction to Abstract Mathematics** (1 × Fall, 1 × Spring)
- 2022/2023 Instructor, MAT21A **Differential Calculus** (2 × Fall, 1 × Spring)  
Instructor, MAT21B **Integral Calculus** (1 × Spring)

### University of Warwick

- 2020/2021 Teaching assistant, MA131 **Analysis I** (term 1)
- 2019/2020 **Supervisor** for 10 first year Maths undergraduates (2 groups, terms 1 & 2)  
Teaching assistant, MA131 **Analysis I** (term 1)  
Teaching assistant, MA131 **Analysis II** (term 2)
- 2018/2019 **Supervisor** for 10 first year Maths+Physics undergraduates (2 groups, terms 1 & 2)  
Teaching assistant, MA3H6 **Algebraic Topology** (term 2)

## SERVICE

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- 2023/2024 Mentor in the UC Davis Directed Reading Program (Fall and Winter quarters)
- 2021/2022 Early Career Researcher Committee (Oxford), Whitehead Library Committee (Oxford)
- 2018/2019 Organizer of the Topology Reading Seminar (Warwick)