

# BELLA TOBIN

## PROFESSIONAL EXPERIENCE

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| <b>Post-Doctoral Fellow</b><br>Oklahoma State University, Stillwater, OK           | <i>2019-present</i> |
| <b>Graduate Teaching Assistant</b><br>University of Hawai'i at Mānoa, Honolulu, HI | <i>2013-2019</i>    |

## EDUCATION

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| <b>Ph.D., University of Hawai'i at Mānoa</b><br>Advisor: Prof. M. Manes<br>Dissertation: <i>Belyi Maps and Bicritical Polynomials</i> | 2019 |
| <b>M.S., University of Hawai'i at Mānoa</b>   | 2017 |
| <b>B.S., University of Vermont</b>  | 2013 |

## RESEARCH INTERESTS

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Arithmetic Dynamics, Algebraic Number Theory, Arithmetic Geometry

## PAPERS

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1. Jacqueline Anderson, Michelle Manes, and Bella Tobin, *Some applications of dynamical Belyi polynomials*, preprint (2021), available at arXiv: 2109.03339
2. Jacqueline Anderson, Michelle Manes, and Bella Tobin, *Cubic post-critically finite polynomials defined over  $\mathbb{Q}$* , Proceedings of the Fourteenth Algorithmic Number Theory Symposium (Steven Galbraith, ed.), vol. 4(1), Open Book Series, no. 1, Mathematical Sciences Publishers, 2020, (DOI: 10.2140/obs.2020.4-1), pp. 23–38
3. Isabella Tobin, *Belyi Maps and Bicritical Polynomials*, ProQuest LLC, Ann Arbor, MI, 2019, Thesis (Ph.D.)—University of Hawai'i at Manoa. 4035631
4. Michelle Manes, Gabrielle Melamed, and Bella Tobin, *Dessins d'enfants for single-cycle Belyi maps*, Research Directions in Number Theory (Jennifer S. Balakrishnan, Amanda Folsom, Matilde Lalín, and Michelle Manes, eds.), Springer International Publishing, 2019, pp. 153–159

## SELECT INVITED TALKS

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| <i>Reduction of post-critically finite polynomials</i><br>Oregon Number Theory Day, Portland State University                             | October 2021 |
| <i>Ramanujan-Sato series and arithmetic triangle groups (joint talk)</i><br>WIN5 Power Day  | August 2021  |
| <i>Reduction of post-critically finite polynomials</i><br>People Online in Number Theory  | June 2021    |
| <i>Applications of dynamical Belyi polynomials in arithmetic dynamics</i><br>JMM Special Session on Current Trends in Arithmetic Dynamics | January 2021 |

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| <i>Post-critically finite polynomials with everywhere good reduction</i><br>Louisiana State University Algebra and Number Theory Seminar             | November 2020 |
| <i>Applications of dynamical Belyi polynomials</i><br>Arithmetic Dynamics International Online Seminar   | October 2020  |
| <i>Cubic post-critically finite polynomials defined over <math>\mathbb{Q}</math></i><br>Algorithmic Number Theory Symposium, Auckland, New Zealand   | July 2020     |
| <i>Post-critically finite bicritical polynomials over number fields</i><br>JMM Special Session on Arithmetic Dynamics, Denver, CO                    | January 2020  |
| <i>Post-Critically Finite Cubic Polynomials with Coefficients in <math>\mathbb{Q}</math></i><br>Oklahoma State University Math Department Colloquium | November 2019 |
| <i>Dessins d'enfants for single-cycle Belyi maps</i><br>AWM Research Symposium, Rice University  | April 2019    |
| <i>Post-critically finite bi-critical polynomials over <math>\mathbb{Q}</math></i><br>AMS Western Section, University of Hawaii                      | March 2019    |

## TEACHING EXPERIENCE

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### Oklahoma State University 2019-present

- Introduction to Cryptography (Math 4753/5753)
- Calculus I (Math 2144)

### Thrive Scholars Summer Academy Summer 2021

- Calculus I with Algebra, online

### University of Hawai'i at Mānoa 2013-2019

- Calculus I (Math 241)
- Math for Elementary School Teachers Sequence (Math 111 & 112), traditional and online
- Precalculus: Elementary Functions (Math 134/135)
- Survey of Mathematics (Math 100)

## AWARDS, HONORS, AND GRANTS

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| President's Fellows Foundation funding for Oklahoma State Distinguished Women in Math Colloquium Series | 2020      |
| Project NExT Fellow (Brown Dot)   | 2020      |
| AIM SQuaRE on Dynamical Belyi Maps  | 2019-2022 |

## CONFERENCES, WORKSHOPS, AND RESEARCH EXPERIENCES

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|---------------------------|--------------|
| Oregon Number Theory Days | October 2021 |
| Mathfest 2021             | August 2021  |

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| Rethinking Number Theory   | July 2021     |
| Joint Math Meetings 2021   | January 2021  |
| Women in Numbers workshop 5                                      | November 2020 |
| Mathfest 2020  | July 2020     |
| Algorithmic Number Theory Symposium                              | July 2020     |
| CTNT Conference 2020   | May 2020      |
| Joint Math Meetings 2020, Denver, CO                             | January 2020  |
| Sage Days 104: Arithmetic Dynamics, St. Louis, MO                | November 2020 |
| AWM Research Symposium, Rice University                          | April 2019    |
| AMS Spring Central and Western Joint Sectional Meeting, UH Mānoa | April 2019    |
| Hawaii Number Theory 2019, University of Hawai'i at Mānoa        | March 2019    |
| CTNT Workshop & Conference 2018, University of Connecticut       | May 2018      |
| Hawaii Partnerships for Education HICAN Summit, Honolulu, HI     | April 2016    |
| Galileo Teacher Training Program, Honolulu, HI                   | August 2015   |
| RTG Workshop on Arithmetic Dynamics, University of Michigan      | December 2015 |

## PROFESSIONAL SERVICE, OUTREACH, AND DEVELOPMENT

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| Faculty co-sponsor of the Oklahoma State Student Chapter<br>of the Association for Women in Mathematics    | 2020-2022          |
| Co-organizer of the Distinguished Women in Mathematics<br>Colloquium Series at Oklahoma State University   | 2021-2022          |
| Journal Referee  |                    |
| Co-Organizer for <i>One-minute Teaching Activities</i> MAA Webinar   | March 2020         |
| Founder and president of the AMS Student Chapter at the University of Hawaii                               | 2017-2019          |
| Organizer for "Be A Scientist Night",<br>at the Honolulu Institute for Human Services                      | December 2017,2018 |
| Sage development, <code>bdd_height</code> ,<br>added Doyle-Krumm Algorithm (with TJ Combs and Erik Holmes) | 2016               |