# Isabel Longbottom

CONTACT: ilongbottom (at) math (dot) harvard (dot) edu

## Research Interests

I am interested in homotopy theory, algebraic K-theory, and algebraic geometry.

## Education

| | | |
|---|---|---|
| 2022-27 (expected) | PhD in Mathematics, supervised by Michael Hopkins | |
| | **Harvard University** | |
| | MA in mathematics, November 2023 | |
| 2018-21 | Bachelor of Philosophy - Science (Honours), Mathematics major, CS minor | |
| | **The Australian National University** | |
| | GPA of 7.00 (out of 7.00), First Class Honours | |

## Awards and Scholarships

| | |
|---|---|
| 2023-24 | Raphael and Daniel Salem Fellowship, Harvard |
| 2022 | Attended the IAS/PCMI Undergraduate Summer School |
| 2020 | Alan McIntosh Prize for third year Mathematics, ANU |
| 2020 | Hanna Neumann Prize for third year mathematics, ANU |
| 2020 | Priscilla Fairfield Bok Prize for women in third year science courses, ANU |
| 2020 | Invited to the IAS/PCMI Undergraduate Summer School subsequently cancelled |
| 2019 | Hanna Neumann Prize for second year mathematics, ANU |
| 2019 | Priscilla Fairfield Bok Prize for women in third year science courses, ANU |
| 2018 | Hanna Neumann Prize for first year mathematics, ANU |
| 2018 | Mavis Prater Prize for women in mathematics, ANU |
| July 2017 | Tuckwell Scholarship for an undergraduate degree at the ANU |

## Computer Skills

(alphabetically) Ada, Haskell, Java, LaTeX, Lean, Macaulay2, Magma, Python, Sage

## Talks

| | |
|---|---|
| September 2024 | *Intro to equivariant homotopy theory*. Harvard Babytop Seminar. |
| August 2024 | *Cyclotomic Frobenius and the Segal conjecture*. MIT Talbot workshop. |
| April 2024 | *Rational homotopy of the K(n)-local sphere*. MIT Babytop seminar. |
| April 2024 | *The Hopf invariant one problem*. Harvard Zygotop seminar. |
| February 2024 | *K-theory of the K(1)-local sphere via TC*. Harvard Thursday seminar. |
| November 2023 | *Sylow Theorems for Infinity Groups*. Harvard Trivial Notions seminar. |
| October 2023 | *K-theory from the ground up*. Harvard Zygotop seminar. |
| May 2023 | *On the K-theory of pullbacks and pushouts*. Harvard Zygotop seminar. |
| March 2023 | *Abouzaid-Blumberg flow categories*. MIT Juvitop seminar. |
| November 2022 | *A proof of the Pontryagin-Thom theorem*. MIT Kan seminar. |
| October 2022 | *On the cobordism ring and a complex analogue, after Milnor*. MIT Kan seminar. |

# Employment

| | |
|---|---|
| Fall 2023, Fall 2024 | **Teaching Fellow for Math1B, Harvard**<br>Delivered thrice-weekly calculus classes, helped write and mark exams, gave office hours. |
| 2020, 2021 | **Demonstrator for MATH1115, MATH1116, MATH2222, and MATH2322, ANU**<br>Ran (online and in-person) workshops, marked assignments and exams. TA-equivalent position. |
| 2019 | **Drop-in tutor, ANU**<br>Drop-in tutor for first year courses during the exam preparation period. |
| 2019 | **Peer-Assisted Learning Mentor for MATH1115 and MATH1116, ANU**<br>Junior TA position as a second-year teaching first-year students analysis and linear algebra. |

# Service

| | |
|---|---|
| Spring & Fall 2024 | **Organiser for the Zygotop seminar, Harvard**<br>Learning seminar for young graduate students in algebraic topology. |
| 2023-24 | **Organiser for Real Representations, Harvard**<br>Support for underrepresented groups in math. Helped run social lunches and two trivia nights. |
| January 2020, 2021, 2022 | **Tutor at the National Maths Summer School, Canberra**<br>Tutored at a two-week-long summer program for mathematically able high school students. |
| December 2020 | **Maths tutor for the Curious Minds STEM program, Online**<br>Ran maths problem-solving sessions for rural female-identifying high school students. |
| 2020 | **Vice President of the ANU Mathematics Society** |