

# Ayesha Hussain

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*Climate Modelling Postdoctoral Research Fellow, interested in how natural vegetation responds to enhanced CO<sub>2</sub>, with particular focus on Nitrogen limitation.*

(Correct as of 19th January 2023)

## Research

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Number Theory.....

**The Limiting Distribution of Character Sums (2021):** <https://doi.org/10.1093/imrn/rnab194>

Published at 'International Mathematical Research Notices' (IMRN)

**The Limiting Distribution of Legendre Sums:** In Progress

## Employment

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### University of Exeter

*Postdoctoral Research Fellow*

2022–Present

Working on the Land Productivity Drivers work package as part of the EU ESM2025 grant.

Advised by Dr Pierre Friedlingstein.

## Education

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### University of Bristol

*PhD Student*

2018–2022

Thesis titled *Character Studies: Investigating the Limiting Distribution of Character Sums*.

Advised by Dr Jonathan Bober.

### University of Durham (Grey College)

*Integrated Masters Student, 1st Class*

2013–2017

Final year project titled *The Rankin-Selberg Bound: Bounding the Fourier Coefficients of Cusp Forms Using the Rankin-Selberg Method*.

Advised by Dr Jens Funke and Dr Thanasis Bouganis.

## Teaching Experience

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### University of Bristol

*Module Tutor/Moderator/Assistant for Various Courses*

Autumn 2018 – Spring 2022

- Third year Number Theory homework marker (Spring 2022)
- First year Mathematics 1A20 module tutor (Autumn 2021)
- Mathematical Investigations moderator (Spring 2021)
- Exam marker Mathematics 1A20 module (Spring 2021)
- Perspectives in Mathematics moderator (Autumn 2020)
- First year Mathematics 1A20 module tutor (Autumn 2020)
- Analysis B module tutor (Spring 2020),
- Number Theory module homework marker (Spring 2020),
- First year Mathematics 1A20 module tutor (Autumn 2019),
- Engineering Mathematics Teaching Assistant (Autumn 2019),
- Numerical Analysis Teaching Assistant (Spring 2019),
- First year Mathematics 1A20 module tutor (Autumn 2018).

## University of Durham

*Homework Marker*

*Autumn 2016 – Spring 2017*

Second year Numerical Analysis module homework marker.

Miscellaneous.....

## Self Employed

*Private Tutor*

*2011 – 2022*

One-on-one Mathematics tutor.

- Preparing pupils for 11+, 13+, GCSE, A Level and University Admission examinations.

## Seminar Talks

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### EU (Virtual)

*EU ESM2025 Land Productivity Drivers Meeting*

*February 2023*

TBC

### University of Exeter

*Land Surface Modelling Discussion Group*

*February 2023*

A Tale of 2 FACE Sites

### University of Exeter

*Climate Coffee*

*November 2022*

Enhanced  $CO_2$  Experiments

### University of Warwick

*Warwick Number Theory Seminar*

*January 2022*

Distributions of Character Sums

### University of Bristol

*Postgraduate Seminar*

*October 2021*

The Man, The Myth, The Legend(re)

### University of Oxford (Virtual)

*Oxford Junior Number Theory Seminar*

*May 2021*

Distributions of Character Sums

### University of Montreal (Virtual)

*Mobius ANT Seminar*

*March 2021*

Distributions of Character Sums

### University College London

*London Junior Number Theory Seminar (Virtual)*

*March 2021*

What Is a Random Multiplicative Function

### University of Bristol (Virtual)

*Postgraduate Seminar*

*November 2020*

Introduction to Random Multiplicative Functions

**University of Bristol**

*Linfoot Seminar*

March 2020

Distributions of Character Sums

**University of Bristol**

*Postgraduate Seminar*

November 2019

Paths of Dirichlet Characters

## Conference Talks

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**University of Bristol (Virtual)**

*MINGLE 2021*

September 2021

The Probability Behind Yahtzee

**Virtual Conference**

*CANT Workshop*

May 2021

Distributions of Character Sums

**Virtual Conference**

*Women In Number Theory and Geometry*

January 2021

Distributions of Character Sums

**Virtual Conference**

*3rd BYMAT Conference*

December 2020

Distributions of Character Sums

**University of Bristol (Virtual)**

*MINGLE 2020*

September 2020

Animals and Counting

**University of Warwick**

*Young Researchers in Algebraic and Analytic Number Theory*

November 2019

Paths of Dirichlet Characters

## Conferences

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**University of Bristol**

*Young Researchers in Number Theory, Co organiser*

August 2021

**Virtual Conference/Paris**

*Summer School in Analytical Number Theory*

June 2021

**University of Bristol**

*Young Researchers in Mathematics, Co organiser*

June 2021

**City University of New York**

*CANT Workshop*

May 2021

**Insitut Mittag Leoffler**

*Number Theory Research Program*

January-March 2021

**Virtual Conference**

*Women In Number Theory and Geometry*

January 2021

**Virtual Conference**

*3rd BYMAT Conference*

December 2020

## Virtual Conference

*Black Heroes of Mathematics Conference* October 2020

## University of Bristol

*Heilbronn Annual Conference 2020* September 2020

## University of Warwick

*Young Researchers in Algebraic Number Theory* November 2019

## University of Oxford

*Warwick-Oxbridge-Manchester-Bristol-London (WOMBL)* September 2019

## University of Bristol

*Heilbronn Annual Conference 2019* September 2019

## Grand Hotel San Michele, Cetraro, Italy

*Symposium on Analytic Number Theory* July 2019

## University of Bristol

*CMI-HIMR Summer School in Computational Number Theory* June 2019

## University of Mississippi

*NSF-CBMS Conference: L-Functions and Multiplicative Number Theory* May 2019

## University of Cambridge

*Warwick-Oxbridge-Manchester-Bristol-London (WOMBL)* January 2019

## University of Sheffield

*Young Researchers in Algebraic Number Theory* November 2018

## Outreach

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## Mulberry Schools Trust

*What is a Maths PhD?!* February 2023

Gave a talk to A-Level students about Mathematics at University.

## University of Bristol

*Women in Maths Research* February 2023

Gave a talk to years 10-12 about Early Career Researchers.

## University of Bristol

*Women and Non-Binary People in Maths: Opportunities for the future* November 2021

Conference co-organiser for the 2 day event.

## University of Bristol

*Women and Non-Binary People in Maths: Opportunities for the future* November 2020

Conference co-organiser for the 2 day event.

## University of Bristol

*Women in Mathematics Research* June 2020

Main conference organiser promoting studying Maths to A-level students.

## University of Bristol

*Women and Non-Binary People in Maths: Opportunities for the future* November 2019

Conference co-organiser for the 2 day event.

## University of Bristol

*Women in Mathematics Research* September 2019

Gave a workshop on aspects of my research.

**Cheltenham Science Festival***Discover Zone Mathematics Stand**June 2019*

Helped showcase interactive Mathematics exhibits for the general public.

**Walthamstow Hall Senior School***Mathematics at Undergraduate Level and Beyond**November 2018*

Gave talks to years 10-12 about Mathematics at University.

**Francis Holland School***Mathematics: Applications after School**November 2018*

Gave talks to years 10-12 about Mathematics at University.

## Miscellaneous

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**Programming Experience:** Experience using Latex, Python, SQL, HTML, CSS.

**Seminar Co-organiser:** Linfoot Seminar.

**Conference Co-organiser:** MINGLE 2019 (annual Bristol postgraduate conference).

**Conference Co-organiser:** Young Researchers in Mathematics 2021, Young Researchers in Algebraic and Analytic Number Theory 2021.

**Conference Organiser:** 'Women in Mathematics Research Workshop' 2020 with AMSP.

**Reading Group Organiser:** Random Multiplicative Functions Reading Group.

## References

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**Dr Jonathan Bober****jwbober@gmail.com***University of Bristol**PhD supervisor.***Dr Andrew Granville****andrew.granville@umontreal.ca***University of Montreal*