MACS Athena SWAN Newsletter

Issue 9 September 2023

The Athena SWAN (Scientific Women's Academic Network) Charter was established in 2005 with the aim of *"Encouraging and recognising commitment to advancing gender equality"* within STEM subjects, i.e., science, technology, engineering, and mathematics. The Athena SWAN agenda has grown overtime to promote equality in general. Scan the QR code opposite for more background about Athena SWAN at Heriot-Watt, including guidance and resources.

1. Sustaining Women's Empowerment in Research & Innovation

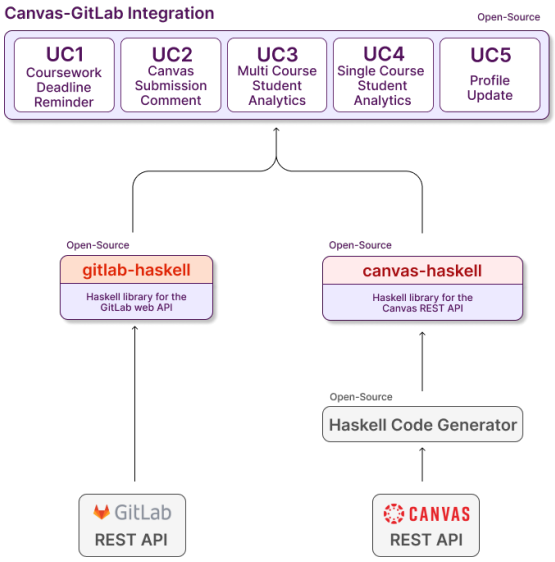
Earlier in the summer, our colleague Haslifah Hasim (Dept. of AMS in Dubai) was shortlisted for the final round of the 4th Forum for Women in Research "QUWA: Sustaining Women's Empowerment in Research & Innovation". Her research paper was entitled *"Development of Mathematical models in measuring risk contagion and forecasting"*. Congratulations to Haslifah!

2. MACS Athena SWAN Summer Undergraduate Bursary Scheme 2023 – Reports

MACS Athena SWAN sponsored two Summer Undergraduate Bursary students this year:

- **Laura Schauer:** Laura's project developed a programming framework to integrate Canvas and GitLab at Heriot-Watt. For example, to remind students of a coursework deadline on GitLab instead of it only being visible on Canvas, and to log GitLab activity for assignments on Canvas. The integration is demonstrated with eight applications, which were motivated by staff and student surveys. The applications are implemented using Haskell libraries for the GitLab and Canvas APIs (the latter being implemented in this project).

  Originally this project was Laura's dissertation project, for which she was shortlisted for the Scotland IS2023's Young Software Engineers Award:



https://www.scotlandis.com/blog/2023s-young-software-engineers-of-the-year-revealing-scotlands-best-graduate-talent/

If you would like to find out more, give Laura's blog post a read,

https://lauraschauer.gitlab.io/2023/08/07/Canvas-GitLab/

which goes into more detail about the structure of the integration. There's also a tutorial to create your own integration use case:

https://lauraschauer.gitlab.io/2023/08/16/Canvas-GitLab-Use-Case/).

The MACS Athena SWAN Bursary Scheme enabled Laura to continue working on her dissertation project over the summer. Laura thoroughly enjoyed the experience, which also allowed her to write a conference paper for submission. The integration and the canvas-haskell library are both open-sourced on GitLab: https://gitlab.com/lauraschauer.

- **Abby Stevenson:** I'm a third-year Computer Science/Artificial Intelligence student, and this summer, I've been working on a project as part of the MACS Athena SWAN Summer Bursary Scheme. The project has been focused on creating a series of lessons aimed at second-year high school pupils designed to introduce them to the world of AI and Data Science while highlighting their positive impact, especially in healthcare. We decided to focus on second-year pupils as it's a crucial time when students are making decisions about what subjects they want to continue studying. My goal is to shed light on the positive contributions that AI and data science are making in healthcare and other areas, such as conservation, which might not be as well-known or discussed. I've really enjoyed working on the project over the summer, and it's helped me further my understanding of AI and its applications in healthcare. Applying to the bursary was really easy. I just had to fill in a form with the project supervisors and send it back to the Athena SWAN group. Through this project, I'm hoping to promote awareness and appreciation for the positive contributions that AI and data science bring to our world.

Laura was supervised by **Rob Stewart** while **Abby** was supervised by **Alistair McConnell** and **Marta Vallejo.**

The aim of the MACS Athena Swan Summer Undergraduate Bursary scheme is to help improve gender equality across our three disciplines. It ran for the first time over the summer 2022 – the call for proposals for next summer will go out by the end of January 2024.

3. MAC-MIGS CDT to promote Equality, Diversity and Inclusion (EDI)

MAC-MIGS is a prestigious EPSRC-funded PhD programme in Mathematical Modelling, Analysis and Computation, run jointly by Edinburgh and Heriot-Watt universities, as part of the Maxwell Institute Graduate School, that offers fully funded scholarships. MAC-MIGS supported Summer Internships this year:

- **Isabel Mann:** As part of the MAC-MIGS Summer Internship project "*Spectral asymptotics in linear elasticity*" we examined the natural modes of vibration of an elastic body when the latter is allowed to "slide" along the boundary, but not to oscillate in the direction normal to the boundary. Mathematically, this reduces to studying the eigenvalues of a certain system of partial differential equations, subject to a particular set of boundary conditions. More precisely, we derived asymptotic formulae for the number of natural frequencies of an elastic body below a given (large!) threshold. The fact that we are dealing with a system, as opposed to a single PDE, makes the analysis highly nontrivial.

  Isabel has made fantastic progress over the summer, and we will soon be writing a joint paper. If you are curious, below is a snippet of our result in the special case of a disk: in black the actual behaviour of the natural modes of vibration computed with Mathematica, in blue our analytic formula. And don't you worry: we've got our epsilon-and-delta proofs, too!

  Isabel was supervised by Matteo Capoferri.

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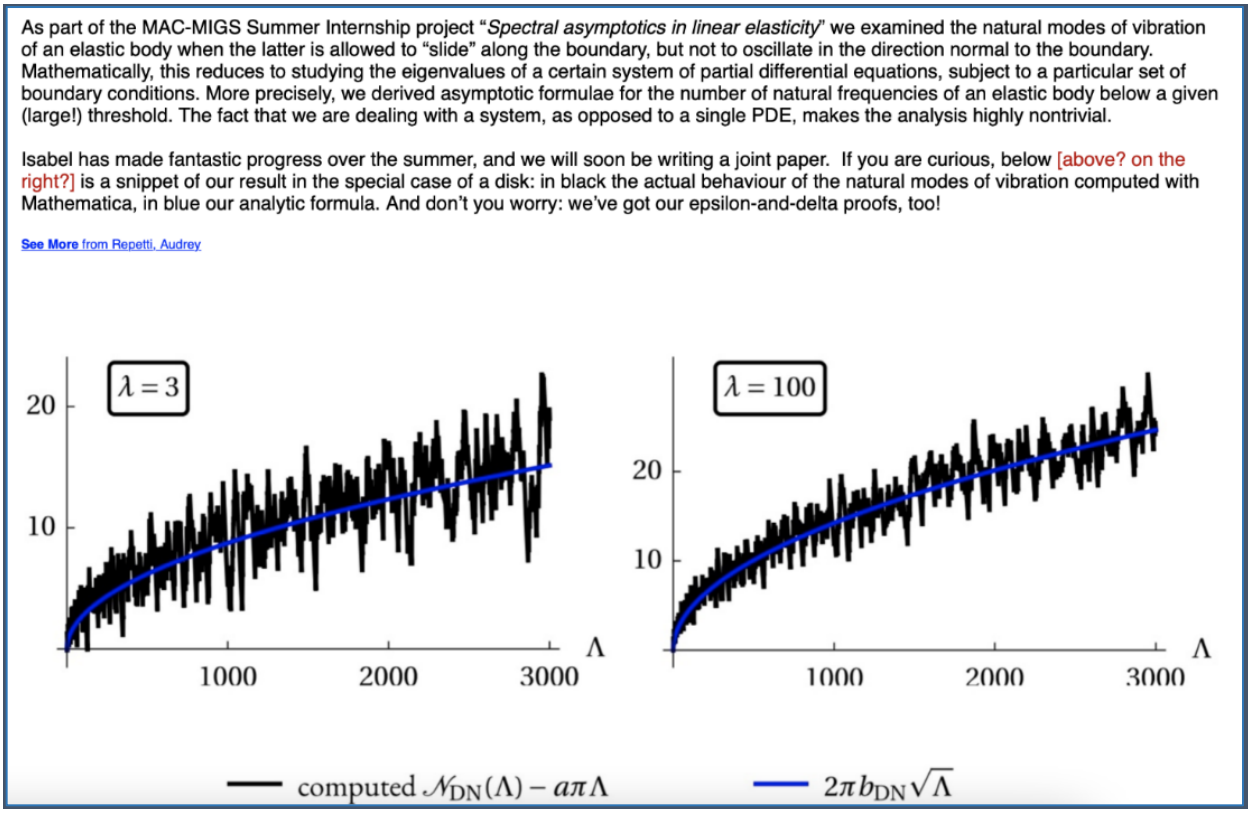
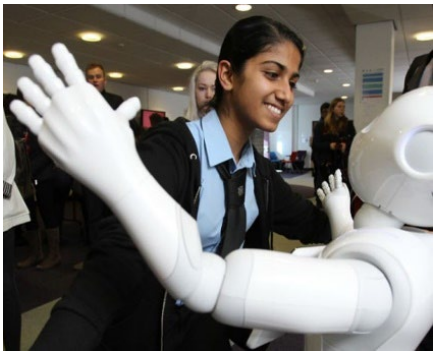
See More from Repetti, Audrey



4. Women@CS

- The Women@CS group is a forum for female students and staff in the Computer Science Department.
- They hold various social events throughout the year.
- Look out for adverts in the coming weeks!



5. The Piscopia Initiative

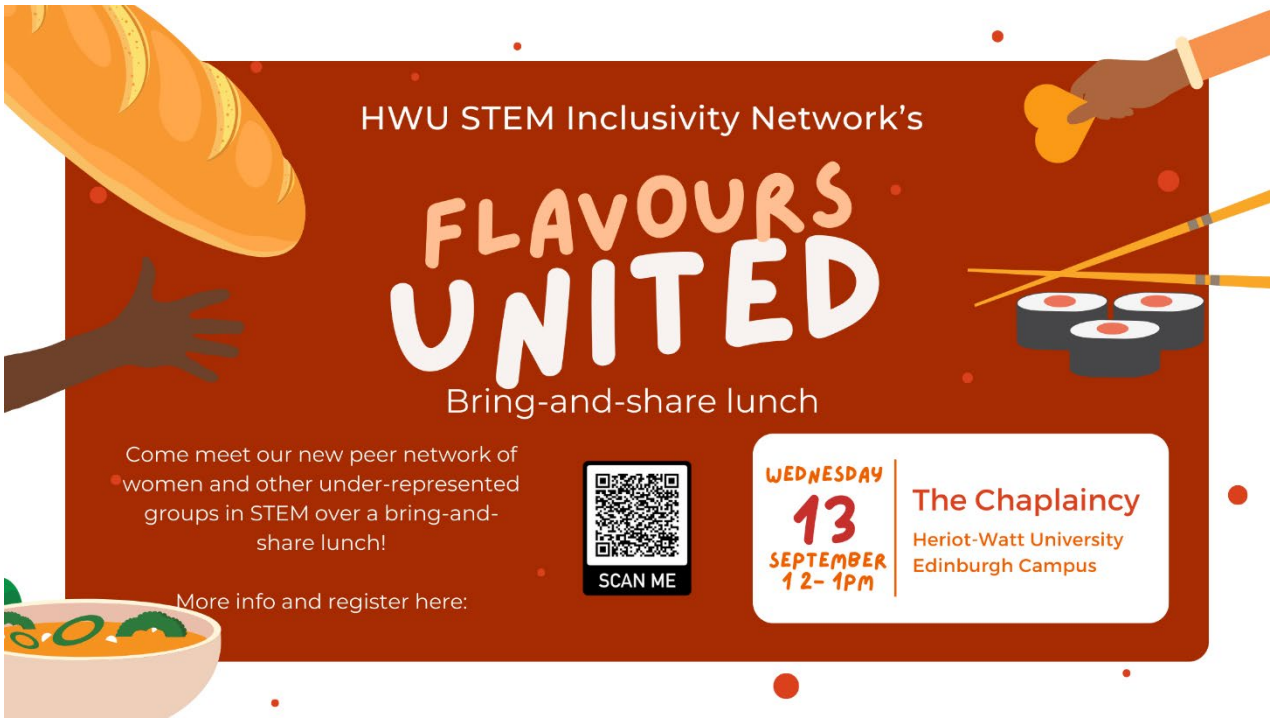
Piscopia initiative

- The Piscopia Initiative is a UK-wide student led network which aims to encourage and support women and non-binary students to pursue a PhD in Mathematics.
- Contact **piscopiainitiative@gmail.com** to join our mailing list or
- follow **@_piscopia** on Instagram.

6. Watt Women in STEM Student Society

WATT WOMEN STEM	Watt Women in STEM is a student-led society focused on supporting female students in Science, Technology, Engineering, and Maths at Heriot-Watt University. Its mission is to empower members to achieve their potential by offering a range of events, both industrial and social, to develop their skills and broaden their networks.	

7. Heriot-Watt University STEM Inclusivity Network

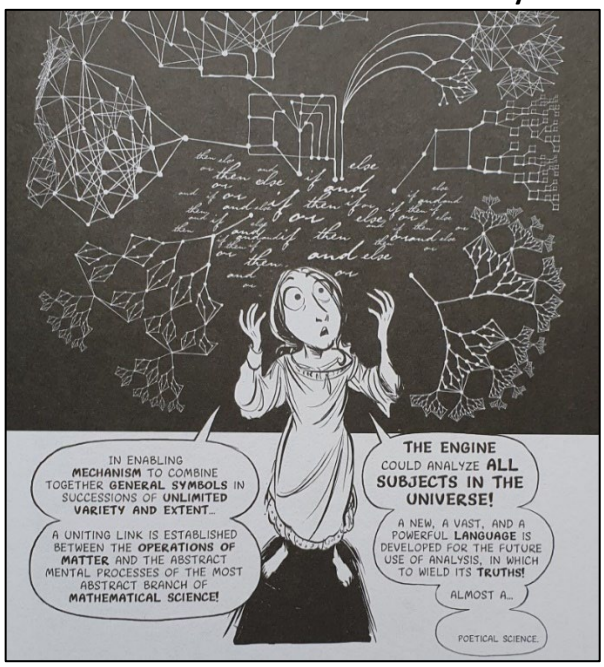


- The HWU STEM Inclusivity Network (IN) is a new initiative aiming to support women and other under-represented groups studying and researching STEM at Heriot-Watt.
- We want to provide a space for community, peer support, collaboration, and celebration of diverse role models.
- We are an overarching network supporting other women in STEM groups at Heriot-Watt.
- See opposite for a Bring-and-Share lunch event. For more information just Scan the QR code above or go to:

https://tinyurl.com/yc2dumkz

- HWU STEM IN will also be promoted at our Ada Lovelace Day event in October – see item 8 below.

8. A Celebration for Ada Lovelace Day 2023



Imagine taken from: *The Thrilling Adventures of Lovelace and Babbage* by Sydney Padua (2015)

- All Heriot-Watt students and staff are invited to join the MACS Ada Lovelace Day 2023 event that will take place on **Wednesday 11 October**.
- The event is located in the Multiflex room within the **National Robotarium**.
- It starts at 1pm with a buffet lunch, during which, the **HWU STEM Inclusivity Network** will be promoted. The lunch will be followed by a Team-based Quiz that will start at 2pm.
- The Quiz will draw upon the life and times of Ada Lovelace, but will include rounds that focus on popular culture and robotics gender through to programming languages and the influence of women across the history of computing. There will also be a round involving a mystery competitor.
- **All Heriot-Watt staff and students are welcome**. Attendance is free but registration via **Eventbrite** is essential. **Registration closes on 29 Sept, or sooner as numbers are limited.**
- To avoid disappointment sign-up now to join our celebration for **Ada Lovelace Day 2023!** Access the **Eventbrite** page via the QR Code:

The National Robotarium

Organizers: Nancie Gunson, Kathrin Stark, Karen Donaldson, Jen Hurley, Marta Romeo, Alistair McConnell, Mark Lawson, Diana Bental, Audrey Repetti and Andrew Ireland.

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If you have suggestions or questions related to Athena SWAN, or an event that you would like to advertise, then please send them to us via athena-macs@hw.ac.uk. In addition, if you would like to be part of the MACS Athena SWAN Team (i.e., officially known as the SAT Self-Assessment Team) then please do get in touch.

Audrey Repetti and Andrew Ireland
(MACS Athena Swan Coordinators)


A Staff & Student Celebration for
Ada Lovelace Day
Wednesday 11 October 2023, 1pm to 3pm
@ The National Robotarium
(Multiflex room)
A School of MACS sponsored Athena SWAN Event
Register Today and Avoid Disappointment