

DECOLONISING & DIVERSIFYING THE BIOMEDICAL SCIENCES CURRICULA

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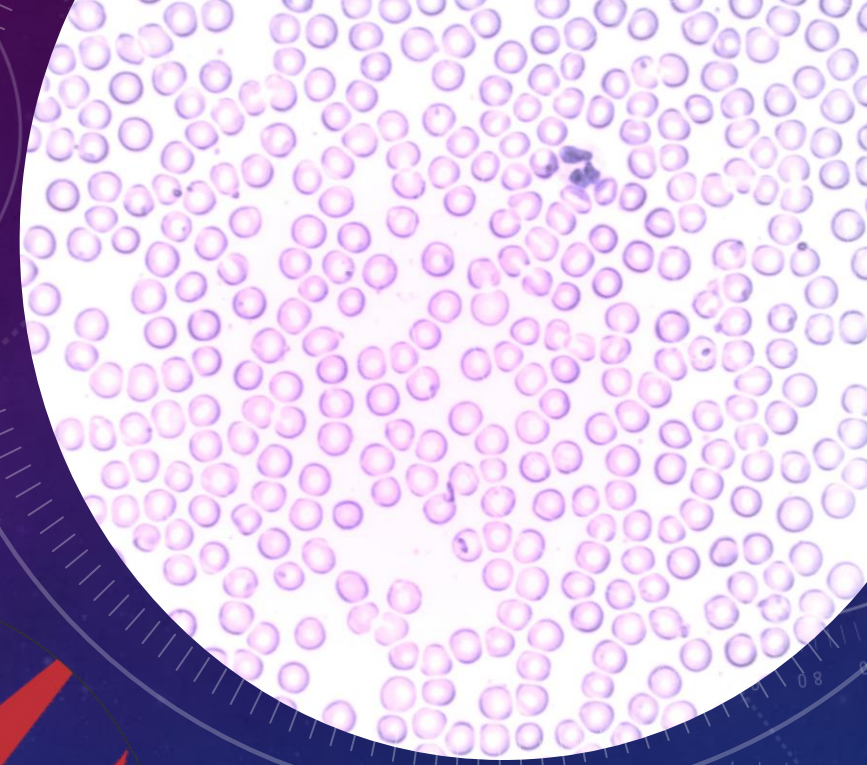
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Bronwen Burton (School of Cellular and Molecular Medicine)

Alice Robson (School of Biochemistry)



DECOLONISING THE CURRICULUM AT BRISTOL



Seafaring
history



Wills family
(Tobacco industry)

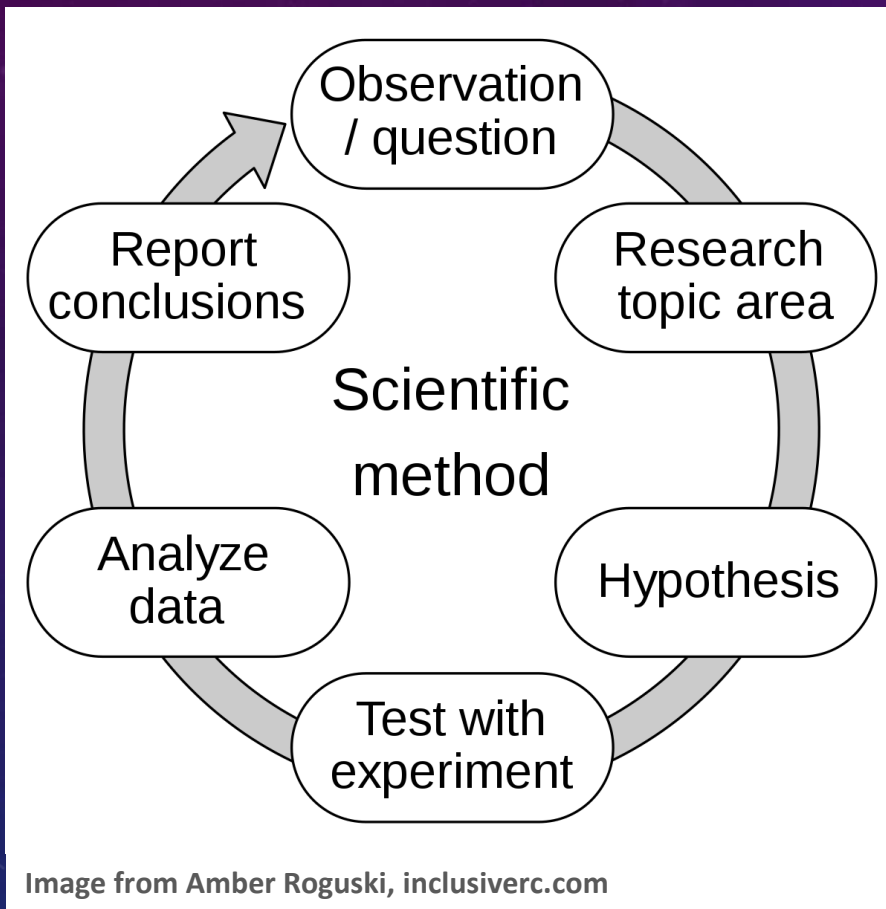
Colston family

Fry family
(Chocolate industry)

University of Bristol

**The University of Bristol:
Our History and the
Legacies of Slavery**

WHY DECOLONISE BIOMEDICAL SCIENCES?



Decolonising doesn't apply to our subject, it's more to do with social sciences.

How can you decolonise objective data?

DECOLONISING AND DIVERSIFYING (D&D) THE CURRICULUM

- Steep learning curve!
- True decolonisation requires changes to wider structures in education and society
- Diversification is a step towards decolonising
- Question the scientific canon, discuss coloniality, overlooked figures and knowledge, context in which knowledge built
- Identify and prevent long-held inequalities: scientific knowledge should represent and benefit all, equally. Intersectionality important





OUR PROJECTS

1. **Unit Reviews** - working with UG student partners to review unit materials and identify opportunities to D&D the curriculum

2. **Surveys and Focus Groups** - investigating student and staff understanding of, and attitudes towards D&D the curriculum

3. Exploring the **History and Culture** of the School of Physiology, Pharmacology and Neuroscience (PPN)

STUDENT CURRICULUM DEVELOPERS



Emerging themes collected



BIAS: GLOBAL NORTH AND WHITE CIS-MEN

- Reading lists and references – European/ North American sources dominate, even if research in Global South
- Opportunities missed to highlight overlooked scientists
- Lack of diversity in teaching staff (in some units) – perpetuates ideas that only white males can be successful scientists





LANGUAGE AND IMAGERY: LACK OF DIVERSITY/ REINFORCING STEREOTYPES



- Cartoons and photos – lack of diversity
- Clinical signs and symptoms generally shown on white skin
- Images reinforcing negative stereotypes
- Hero-worshipping of white, male scientists
- “Founding Father”



DATA BIAS

- Genome-wide association studies (GWAS): ~92% European ancestry
- Disease incidence limited to UK/European data

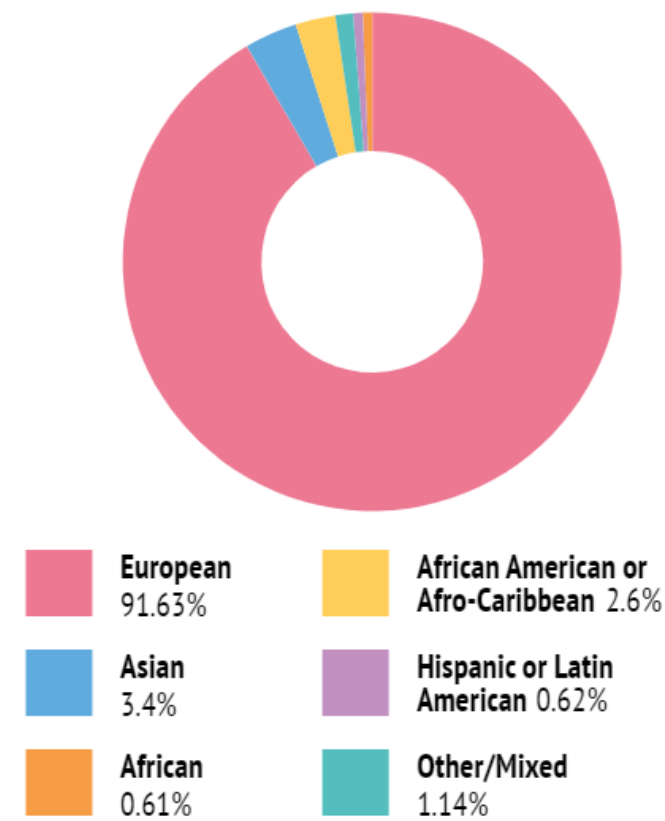
<https://gwasdiversitymonitor.com/> accessed 13/01/23

Participants by ancestry

Discovery Stage

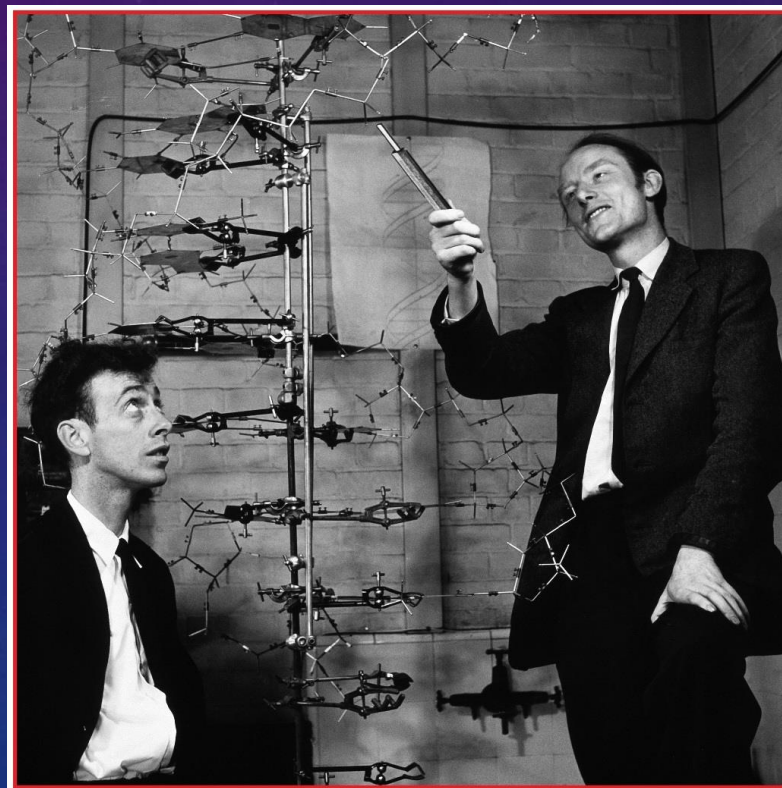
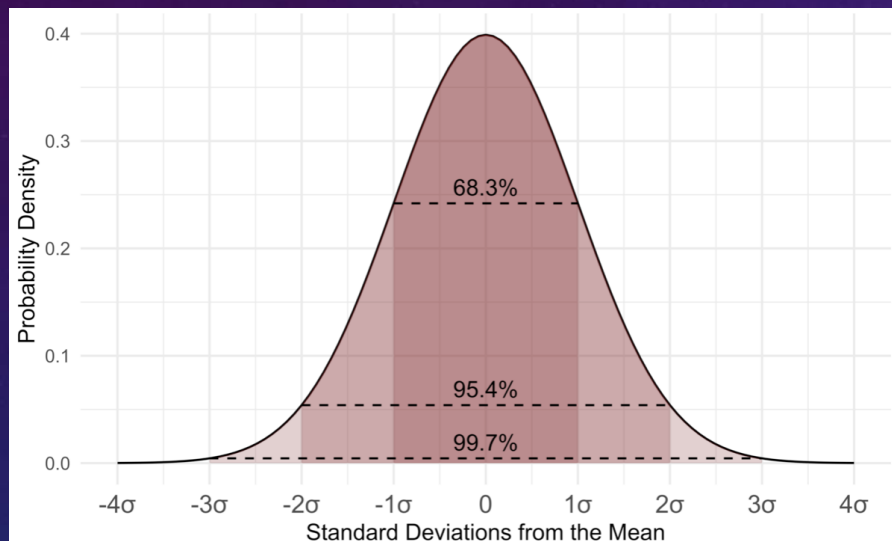
Click to show associations discovered

All parent terms





MISSED OPPORTUNITIES: DISCUSS PROBLEMATIC FIGURES/ PRACTICES



More than a cell: Helen Wilson-Roe



MORE RESPECT FOR INDIGENOUS KNOWLEDGE

- Indigenous people's knowledge/traditional medicine overlooked or underplayed
- Biopiracy should be discussed: medically important drugs from indigenous sources and capitalised by Global North universities or companies, without acknowledging, or benefiting the communities from which they were sourced



Quinine, bark of cinchona tree, native to Peru

RESPONSES TO REPORTS

- Reports shared with unit staff
- Emerging themes document circulated to staff to Biomed staff
- Conversations – ideas, catalyst for change
- New ‘Equality and Inequality in Science’ material introduced into mandatory Year 2 unit (~500 students)
- Student interviews shared with students
- Student curriculum developers asked for a place to discuss: new workshops



2. SURVEYS AND FOCUS GROUPS

Mixed methods study to answer 2 research questions:

- **What is our staff and students' understanding of and attitudes towards decolonising and diversifying the curriculum?**
- **How inclusive is our current teaching practice?**

Feb-Mar 2022:

Survey of teaching staff (n=71) and UG students (n=121)

May-Jun 2022:

Focus groups with students (3 groups, 14 students)

Focus groups with staff (6 staff)

Ethical approval gained from Faculties of Life Sciences and Science Research Ethics Committee Jan 2022

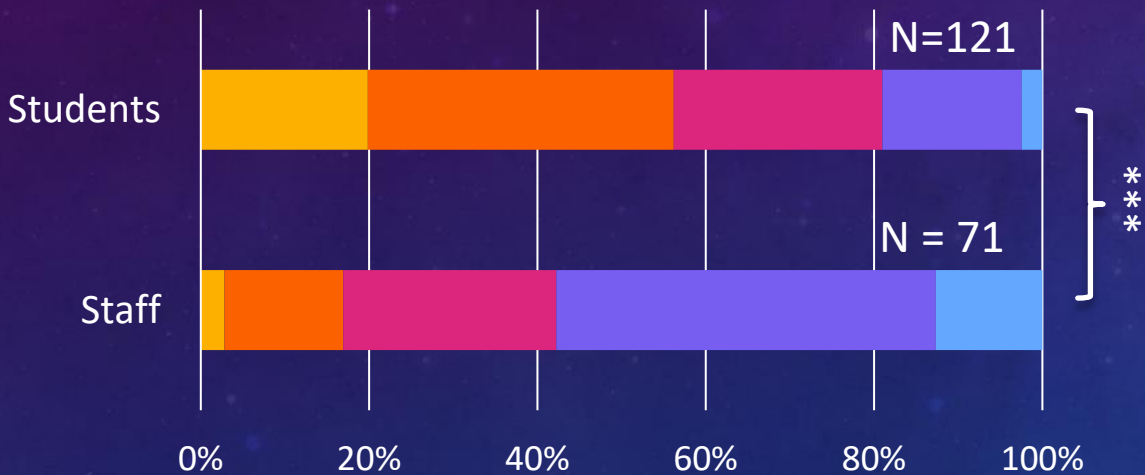
All data available Open Access at <https://osf.io/ps4ua/>

SURVEY OF STAFF AND STUDENT ATTITUDES

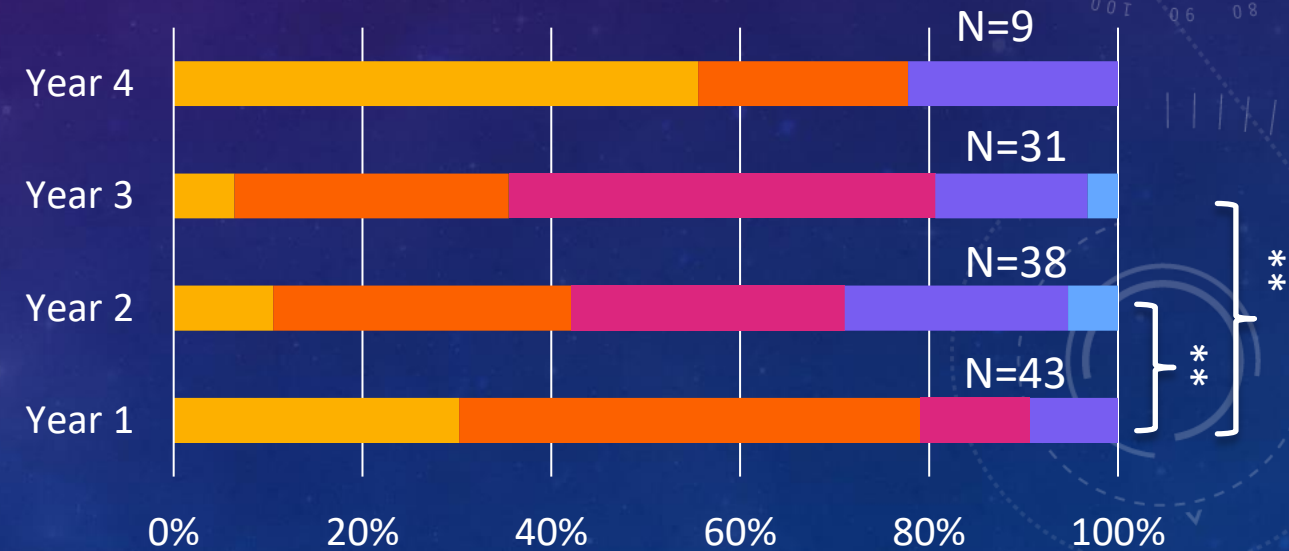


How familiar are you with the idea of decolonising the curriculum at University?

Staff vs students



Students – by year group



1 (Never heard of it) 2 3 4 5 (Actively engaged in it)

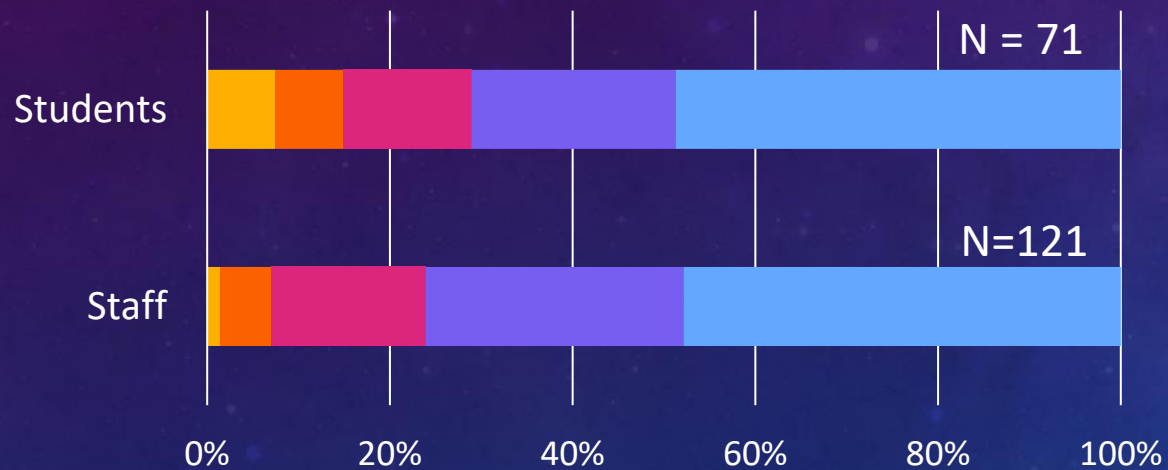
*** $p < 0.001$ Mann Whitney U test

** $p < 0.01$ Kruskal-Wallis test, Dunn-Bonferroni post-hoc

Gave a definition of decolonising the curriculum

How important do you think it is to decolonise the curriculum in the Biomedical Sciences at Bristol?

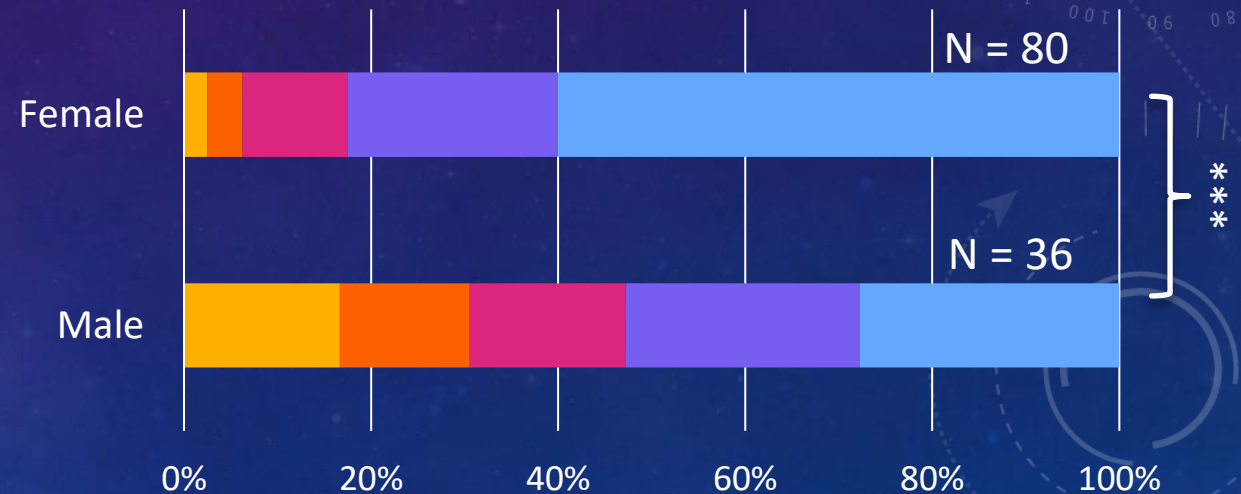
Staff vs students



1 (Not important) 2 3 4 5 (Very important)

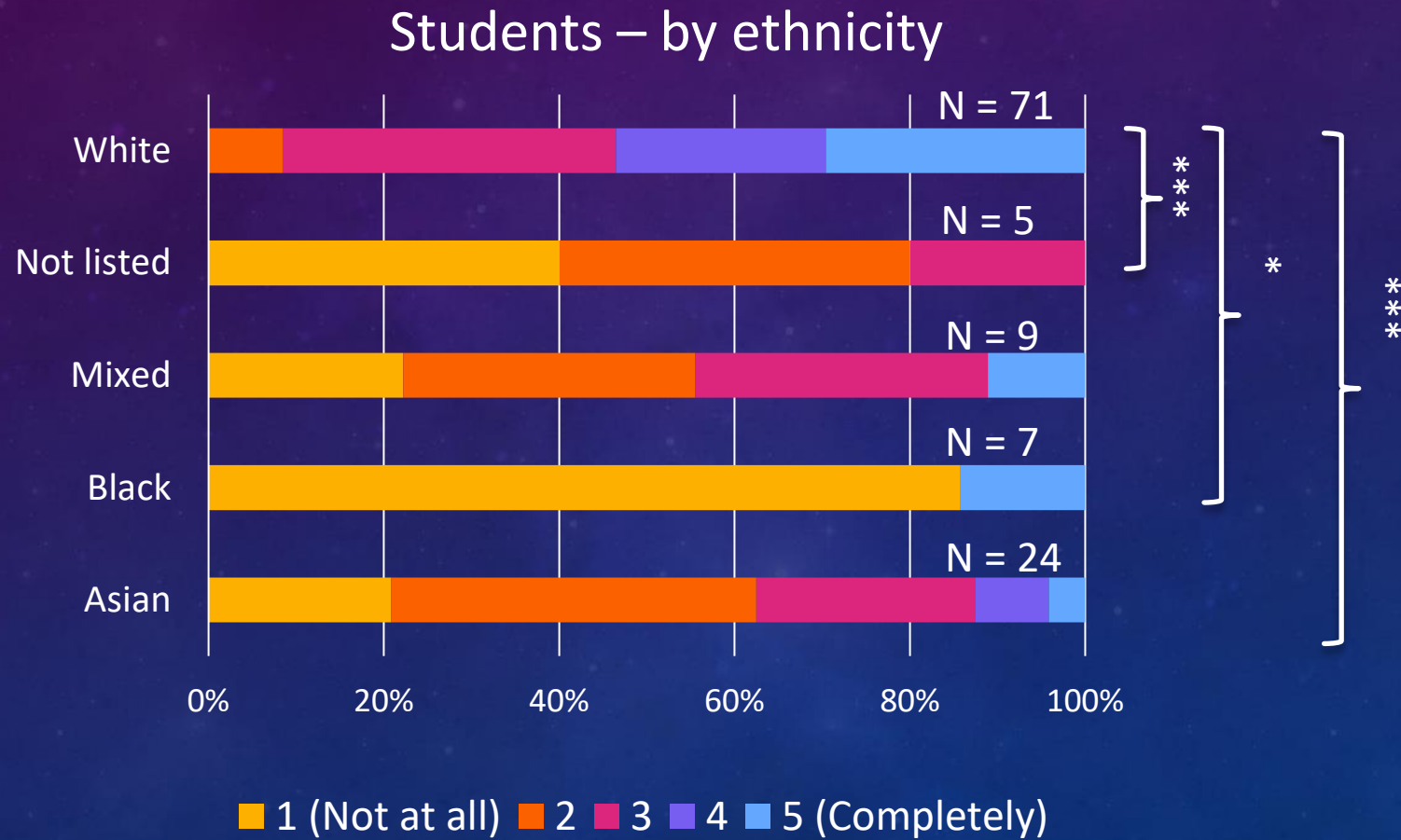
Not significant, Mann Whitney U test

Students – male vs female



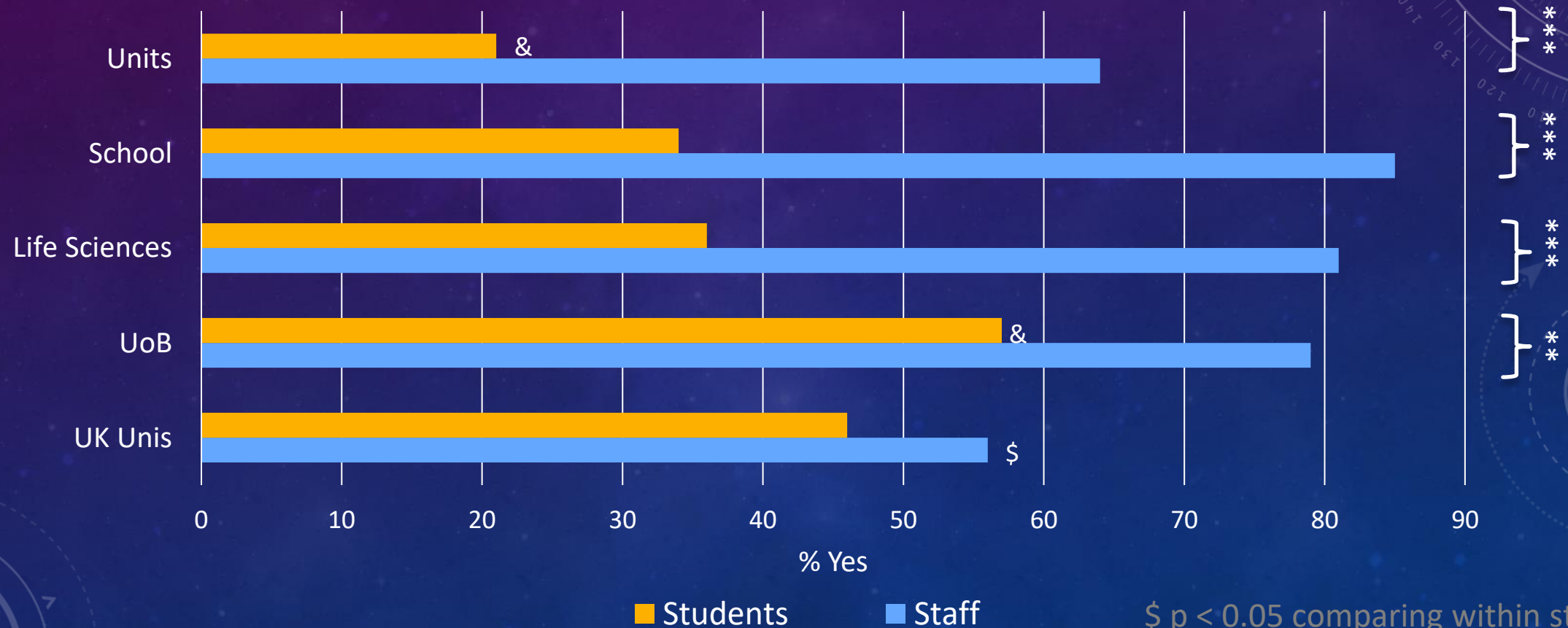
*** $p < 0.001$ Mann Whitney U test

Do you feel represented by the science and scientists you learn about in the course?



*** $p < 0.001$; * $p < 0.05$ Kruskal-Wallis test, Dunn-Bonferroni post-hoc

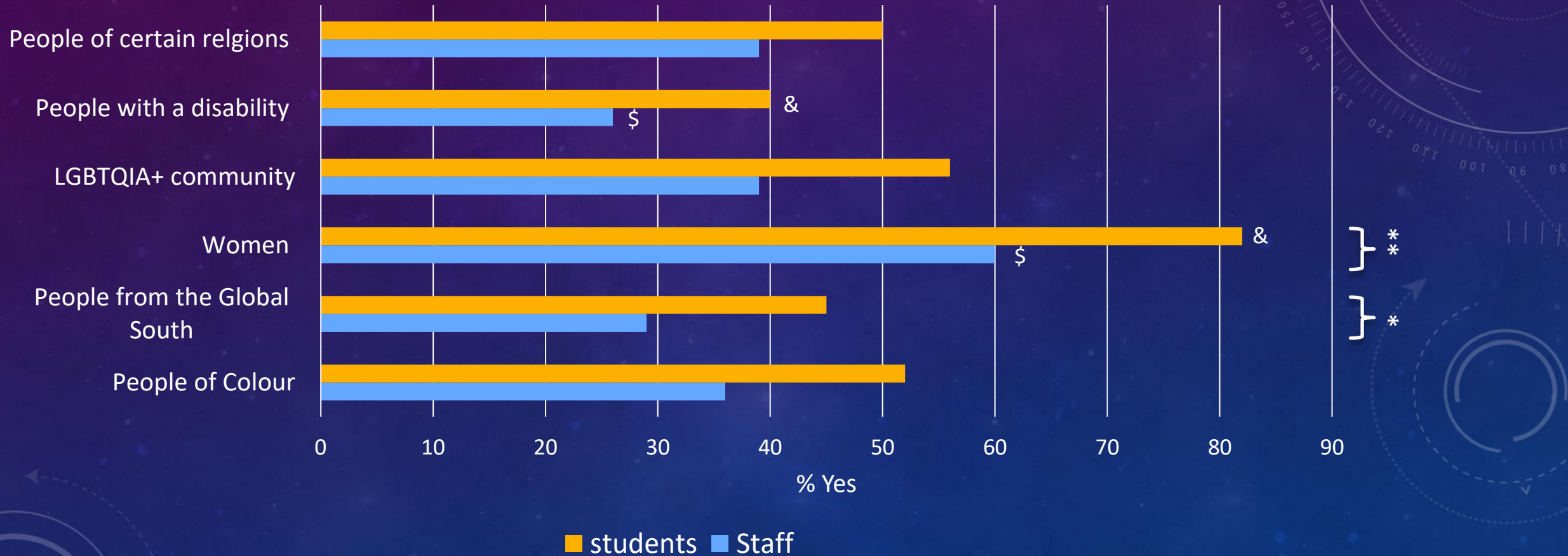
Are you aware of any activities currently taking place to try to decolonise the curriculum at the following levels?



*** p < 0.001; ** p < 0.01 Pearson's Chi square

\$ p < 0.05 comparing within staff
& p < 0.05 comparing within students

In your experience, do you feel that the Biomedical Sciences Undergraduate curriculum (School of Biochemistry, CMM or PPN) is inclusive with respect to the following groups?



*** p < 0.001; ** p < 0.01; * p < 0.05 Pearson's Chi square

\$ p < 0.05 comparing within staff
& p < 0.05 comparing within students

FOCUS GROUPS

- Four online focus groups
- 16 student & 6 staff participants
- Semi-structured. Script:



1. What do you understand by decolonising the curriculum? What does a decolonised curriculum look like **to you**?
2. Do you think decolonising the curriculum is important? Why?
3. What do you understand by inclusive teaching practices?
4. What examples have you come across of inclusive teaching practices?
5. What examples have you come across of non-inclusive teaching practices?
6. Within your course, what could we improve in terms of inclusivity?

I. Rediscovery:
alternative canons of knowledge

1.1 Sources of information or Informants?



1.2 Retrieve Marginalised Knowledges

1.3 Awareness, Pedagogical Practices & Challenges

II. Representation:
towards a more comprehensive understanding

2.1 Challenge the “norm”

2.2 (Missing) Staff Diversity Matters

III. Readiness:
students as agents of change



1.1 SOURCES OF INFORMATION OR INFORMANTS?



- “We learn **all about the experiments and data collected from just like British scientists**. I'm sure there's plenty of room for scientists from other places but we just don't know about”. (Emma_FG3_Q1)
- “I think we learn about the end point of how we got to the final conclusion, but **so many people... contributed to that discovery being made that were not necessarily made aware of**. So it's not that one person came up with what the structure of DNA is actually, **it was a lot of people and a lot of research, lots of small, tiny discoveries that led to the final big work being made**”. (Maria_FG3_Q2)

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1.3 AWARENESS, PEDAGOGICAL PRACTICES & CHALLENGES

- “The decolonising, I find slightly trickier to do myself, just because it's I still don't think I understand it very well . . . It's just the way the whole story has been written . . . All the stories have been written and told from a particular view, and so that's really hard to untangle.” (Cora_FG4_Q1)
- “very limited time in class for the controversial topics”



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2.1 CHALLENGE THE “NORM”

“[a] lot of diseases can be more prevalent in non-white populations”, which however were never mentioned in the curriculum.

(Rosie_FG2_Q2)

"... an awful lot of issues with data availability being really Eurocentric focussed...especially like physiological data. [It] seems to be a recurring theme that they don't seem to be teaching materials available with data from kind of wider backgrounds". (Liv_FG1_Q3)

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2.2 (MISSING) STAFF DIVERSITY MATTERS – FROM STUDENTS

- “...from my experience in biochemistry that I think I've only ever been taught by one lecturer, a person of colour, in some of the 50 lectures that have taught me in the four years...”. (Beth_FG1_Q3)
- “...And I just think having a team of staff that do reflect a wider range of people is helpful, especially like the admin team as well. Sometimes you want to, you know, you want to approach someone you think you're going to be comfortable with”. (Ruby_FG2_Q3)

2.2 (MISSING) FACULTY DIVERSITY MATTERS — FROM TEACHERS

- So I thought, you know, let's change some of the names here to make it more inclusive . . . when I was a kid, they had this children's television programme and at the end the lady who hosted it, she had this magic mirror that she used to look through it. It was just a circle in a hand, and she used to look through and say, who I can see? Oh, I can see Jenny and Peter and Sally! And then when you're a kid, you're like sitting around the TV thinking she's just going to say my name. And I didn't have a very typical Anglo-Saxon name . . . So [my name] never came out for that thing. When I was about three or four, that really stuck with me. That all, you know, you'd go to those shops where you'd buy something with the names, and my name was never there because it wasn't a typical name. So, you know, I really had this strong urge that I had to change these names because it just really annoyed me throughout my whole childhood that I didn't felt like my name was represented. And I can only imagine other people feel it even more strongly as I am [after all] white . . . So yeah, that's one of the things I've been doing.

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III. Readiness: students as agents of change

- “[F]or the longer term, considering that, well, maybe the majority of us going to be scientists, maybe communicate with the public and lots of different things. I think it's really important just having a good awareness of how the content of our course actually does affect a lot of people.
- “Well, I think it can be really important because sometimes smaller groups can be affected by the disease, and maybe there might not be as much finding about that. So it's very good to raise awareness to the people who are going to be the scientists of the next generation and on where they could potentially want to focus research on areas that are maybe not as explored as others.”
- “If science isn't diverse, it's not actually researching our society . . . I think we have to research what's actually happening at the time.”

3. EXPLORING THE HISTORY AND CULTURE OF THE SCHOOL OF PHYSIOLOGY, PHARMACOLOGY & NEUROSCIENCE (PPN): "THE WALL"



THE ONLY EXCEPTIONS



STUDENT CURRICULUM DEVELOPER



Decolonising and Diversifying the Curriculum Report

Reviewed by (optional):

Overview

A brief overview of your findings – what you reviewed and summary of findings.

For my project I have decided to review the achievements of the staff within the School of Physiology, Pharmacology and Neuroscience. I found that the members of staff receiving awards (fellows, teaching awards, large grant prizes etc.) were majority white males. There has been an improvement in the proportion of women receiving awards, although again these tended to be white women. Therefore, there is still a lack of racial/ethnic diversity. Unfortunately, there was a lack of information on the staff belonging to other underrepresented groups such as those with disabilities or a part of the LGBTQ+ community. I also noticed a disparity between the amount of exposure and recognition academic staff receive in comparison to professional service staff and technicians. This suggests a need for better visibility of these underrepresented communities and supporting staff members. A way to demonstrate support could be by having displays put in the PPN building celebrating staff and student accomplishments.

Areas for development

These may be general points which could be improved across all/most content, or specific examples linked to specific topics and sessions. Use positive language to encourage change – explain what can be done, suggest alternatives, use encouraging terms. *Refer to the excel spreadsheet where appropriate.*

STUDENT CURRICULUM DEVELOPER: FINDINGS

“I found that the members of staff receiving awards (fellows, teaching awards, large grant prizes etc.) were majority white males. There has been an improvement in the proportion of women receiving awards, although again these tended to be white women. Therefore, there is still a lack of racial/ethnic diversity.”

“I also noticed a disparity between the amount of exposure and recognition academic staff receive in comparison to professional service staff and technicians.”

STUDENT CURRICULUM DEVELOPER: RECOMMENDATIONS

“I think the school should highlight stories of staff a part of different communities such as the LGBTQ+ community and the disability community.”

“[my findings suggest] a need for better visibility of these underrepresented communities and supporting staff members. A way to demonstrate support could be by having displays put in the PPN building celebrating staff and student accomplishments.”

ACTIONS

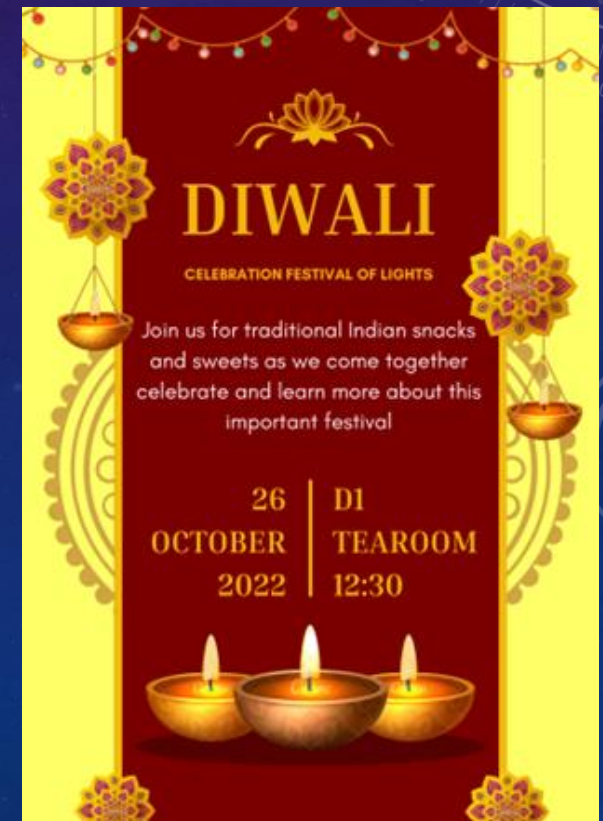
[Diwali- Shinjini Basu post-doctoral researcher](#)
Posted on [October 21, 2022](#) by [k.long](#)
One of our post-doctoral researchers,
Shinjini Basu has kindly agreed to share her
personal reflections on Diwali

June is LGBTQ+ Pride Month

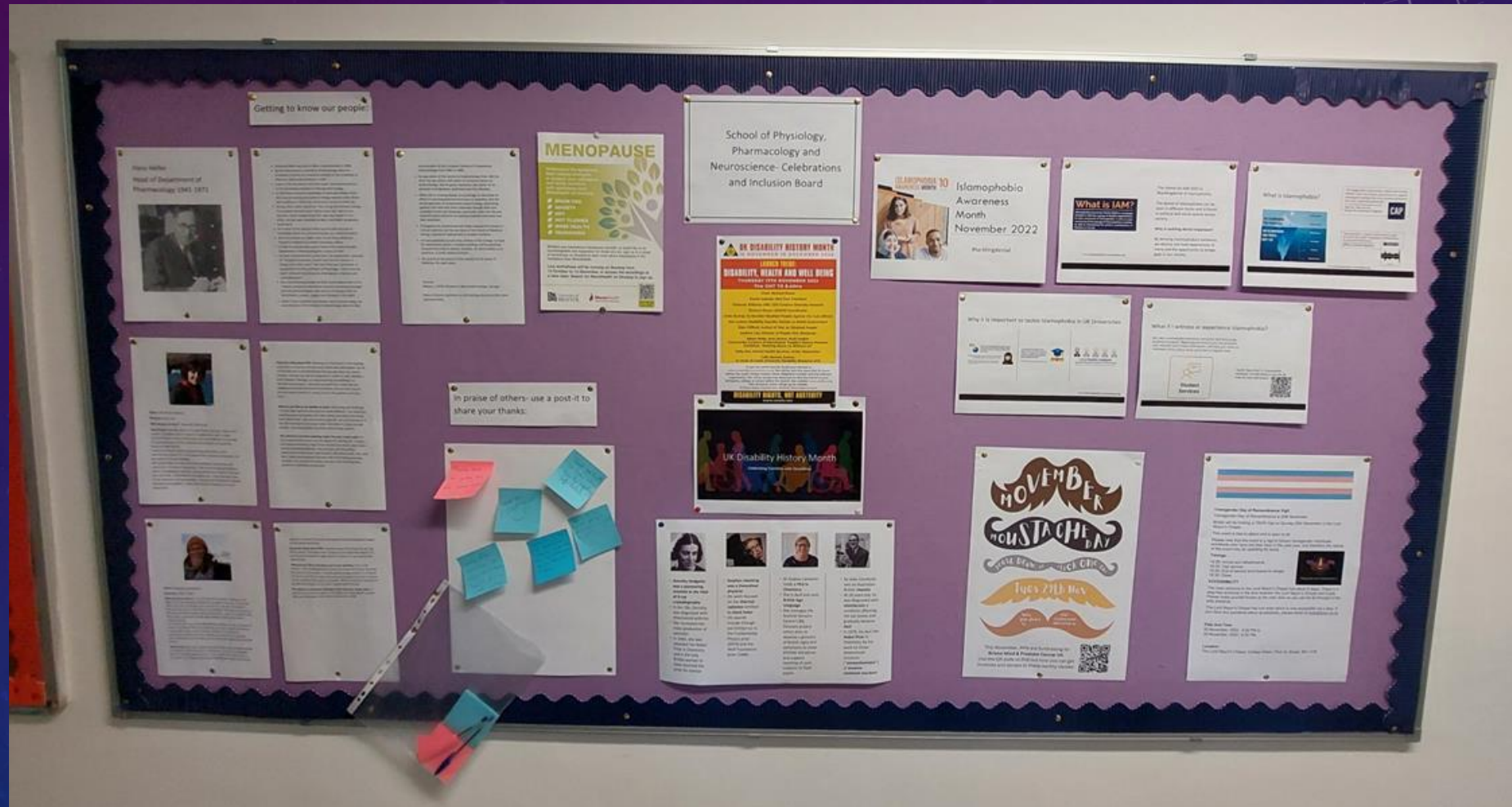
As you are no doubt aware from the University wide comms- June is LGBTQ+ [Pride Month](#)!

The University is a sponsor of [Bristol Pride](#) which will start on 25th June and run over 2 weeks with Pride day (the bit with the parade!) taking place on 9th July.

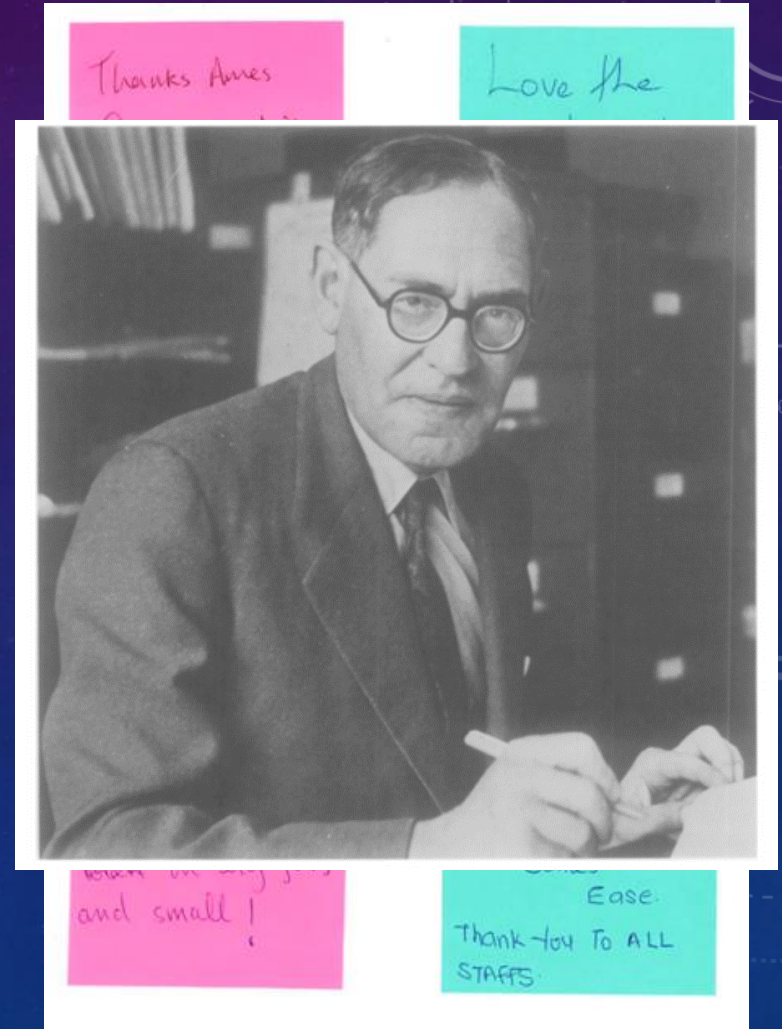
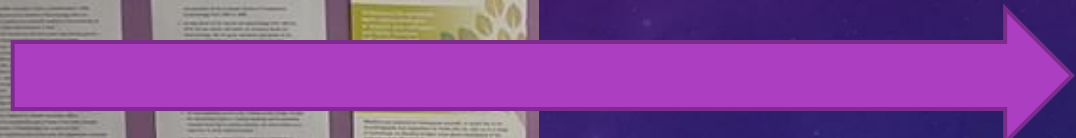
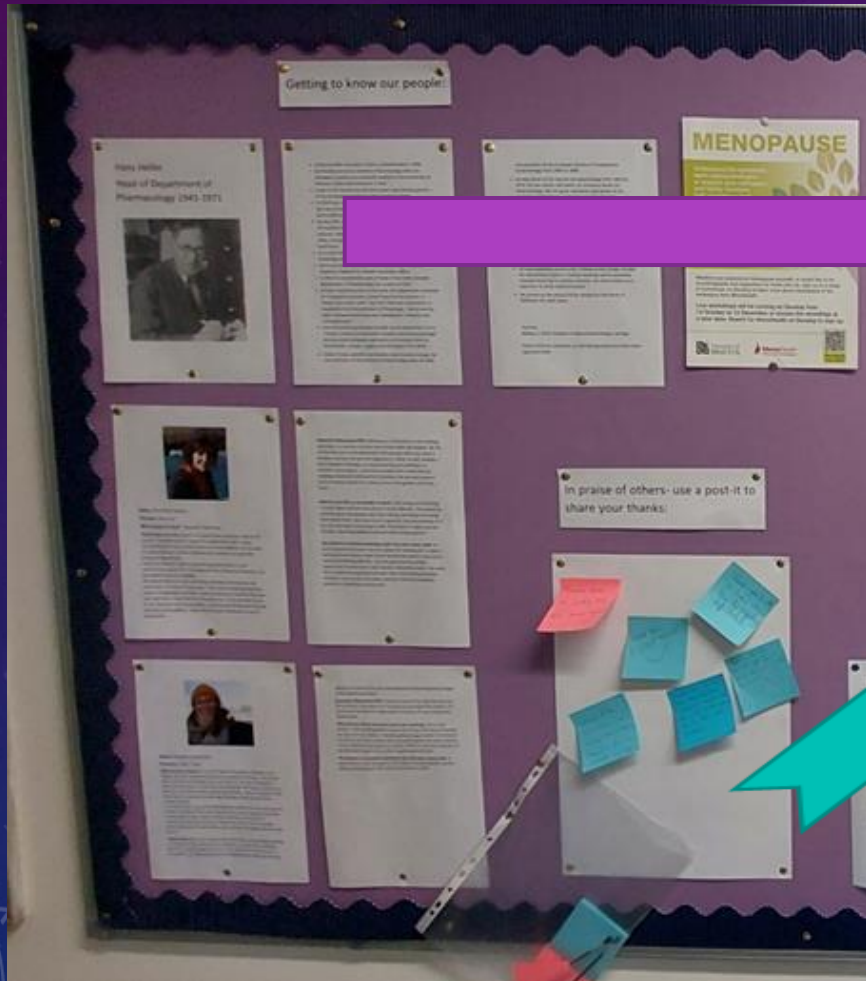
Pride is celebrated in June as this is the month when it all started back in 1969 with the [Stonewall Riots](#). We can tend to think of Pride as a fun celebration or an 'excuse for a party' in Britain today- but it's important to remember that Pride started as a protest against the prejudice, discrimination and violence enacted against



THE NEW WALL



CELEBRATING OUR PEOPLE



FURTHER OUTPUTS IN BRISTOL

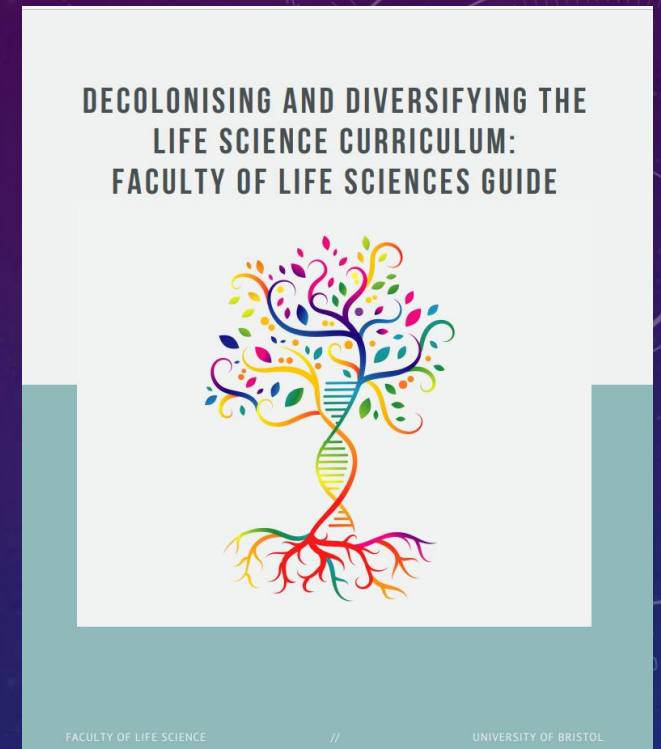
Decolonising & Diversifying priority added to Education Action Plans and Annual Programme Reviews

Question added to all Unit evaluation surveys

Faculty Decolonising and Diversifying working group: Decolonising and Diversifying guide produced

Talk at the BILT Compassionate Conference June 2022

Seminar by Dr Adam Rutherford – July 2022 (review on BILT blog)



Dr Adam Rutherford

Photo credit: Alde Eamonn McCabe

Bristol Teaching Awards

**Shortlist
2022**

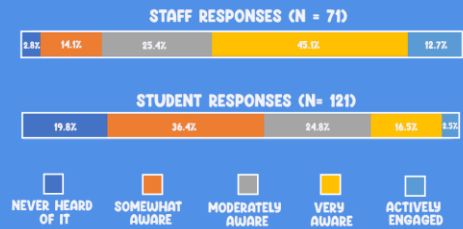


DECOLONISING THE BIOMEDICAL SCIENCES CURRICULUM

Colleagues from the three Biomedical Schools embarked on a research project funded by BILT to explore attitudes and experiences around decolonising the curriculum. This was done through a staff and student survey, followed by focus groups. Students from the Schools were employed as researchers into programmes and units to analyse the current content. The key findings of the surveys and focus groups are shown below.

The lead researchers for this project are Alice Robson, Bronwen Burton, Caroline McKinnon, Amy Mosley and Zafar Bashir.

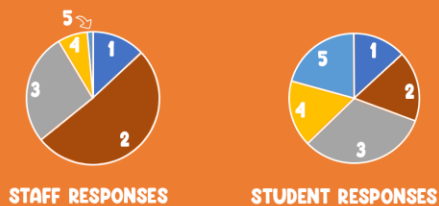
HOW FAMILIAR ARE YOU WITH THE IDEA OF DECOLONISING THE CURRICULUM AT UNIVERSITY?



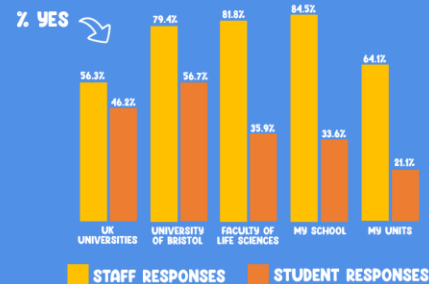
HOW IMPORTANT DO YOU THINK IT IS TO DECOLONISE THE UNDERGRADUATE CURRICULUM IN THE BIOMEDICAL SCIENCES AT THE UNIVERSITY OF BRISTOL? (SCALE: 1 = NOT IMPORTANT TO 5 = VERY IMPORTANT)



DO YOU FEEL ALL STUDENTS ARE REPRESENTED BY THE SCIENCE AND SCIENTISTS THAT STUDENTS LEARN ABOUT IN THE UNDERGRADUATE COURSE? (SCALE: 1 = NOT AT ALL TO 5 = COMPLETELY)



ARE YOU AWARE OF ANY ACTIVITIES CURRENTLY TAKING PLACE TO TRY TO DECOLONISE THE CURRICULUM AT THE FOLLOWING LEVELS?



STUDENT FOCUS GROUP OUTCOMES THE THREE R'S FRAMEWORK

1. REDISCOVERY: ALTERNATIVE CANONS OF KNOWLEDGE

"A LOT OF THE PROCEDURES AND STUFF THAT WE'RE TALKING AND LEARN ABOUT ARE VERY WESTERNISED OR EUROCENTRIC. SO I SUPPOSE IT'S IMPORTANT TO APPRECIATE THAT OTHER COUNTRIES HAVE A MUCH DIFFERENT WAY OF DOING THINGS AND WHICH ARE EQUALLY VALID..."

2. REPRESENTATION: TOWARDS A MORE COMPREHENSIVE UNDERSTANDING

"...THE VAST MAJORITY OF DATA THAT'S AVAILABLE IN A TEACHING SETTING IS SO LIKE WHITE, MIDDLE-AGED MEN WHO ARE EUROPEAN. AND THAT IS A MASSIVE LIMITATION BECAUSE YOU'RE NOT GIVEN ACCESS TO DATA FOR WOMEN, FOR QUEER PEOPLE, FOR POCS..."

3. READINESS: STUDENTS AS AGENTS OF CHANGE

"THE KNOWLEDGE THAT WE GAIN FROM THE UNIVERSITY CAN BE LIKE REALLY IMPACTFUL IN THE INDUSTRIES AND JOBS THAT WE'RE GOING TO IN THE FUTURE"

Infographic on BILT blog

Used in 'Equality and Inequality in Science' material for Year 2 unit

EXTERNAL PROFILE / COMMUNICATION

Paper in preparation

Horizons in STEM 2022, talk

Decolonising and Diversifying Biosciences Education 2022, poster

British Society for Immunology (BSI) conferences, 2021 & 2022

- Invited speaker – EDI panel
- 2-page article in the BSI magazine, Immunology news
- Case study and in the BSI Diversity & Inclusion framework

Invited speakers in Decolonising workshops and events:

- University of Edinburgh, University of Leeds, Kings College London, University of Kent, University of Aberdeen



SUMMARY

- Student curriculum developers have identified a number of priorities for making our courses more inclusive
- Results have been disseminated to teaching staff and embedded in unit surveys and EAPs
- Staff and students think decolonising is important, staff are more aware of decolonising activities than students
- Among students, women think it is more important than men, whilst white students feel more represented within their course than students of colour
- PPN history and culture project- recognising and celebrating diversity of school



FUTURE WORK

BILT funding 2022-2023 to continue this work

Workshop on decolonising for all UG students 30th Jan 2023

Repeat surveys in 2022-23 and analyse changes in attitudes

Animating the 3Rs framework – funding secured for an animated video

Embedded D&D to ensure continuation and evolution of this work



ACKNOWLEDGEMENTS

Collaborators and mentors:

- BILT Mentors: Folúké Adébísí, Alvin Birdi & Leon Tickly
- Alessia Dalceggio, Celine Petitjean, Dave Lawson, Sara Sulaiman, Amy Palmer
- Creative Tuition Collective, Lara Lalemi
- Student curriculum developers and focus group participants

Funding:

- The British Society for Immunology
- Faculty of Life Science Education Innovation fund
- The Bristol Institute for Learning and Teaching (BILT)
- The Biochemical Society

