BME in STEM Report

In Higher Education and beyond

University of BRISTOL

REPORT ON BEING BME IN STEM CONFERENCE

6TH OF FEBRUARY 2019

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EXECUTIVE SUMMARY

This report outlines the findings of the **Being BME in STEM** event held by student researchers and staff at the University of Bristol on 6th February 2019. The University of Bristol has more recently become aware that staff and students within the organisation are facing a range of challenges that they wish to address. This initiative is a direct response to challenges raised, faced by BAME staff and students outlining suggestive strategies of positive action which could be explored further. The report also details findings from a pre-event focus group and questionnaires collected from attendees of the event.

This positive, constructive event generated a wide range of ideas, distilled in this report to a number of clear and implementable recommendations. Together these actions will contribute to building a better environment in the University of Bristol for nurturing black, Asian and minority ethnic students and staff in STEM subjects.

Primary recommendations (for within 1-5 years implementation) are:

- Unconscious bias training for all University staff *and* students, mandatory for members of committees or interview panels, and for personnel involved in teaching.
- Instigate mentoring schemes aimed at supporting BAME accepted applicants, students, and staff.
- Provide a diverse curriculum that includes BAME contributions to science and ensure diversity on teaching committees. Where it is not possible to find diversity in professorial staff, the introduction of BAME post-doctorates and postgraduates to the committee should be implemented.
- Introduce anonymised applications in the undergraduate recruitment process.
- BAME role models are needed at all career stages and can be provided through outreach activities, invited speakers and by ensuring the curriculum includes contributions made by BAME individuals to STEM.

A detailed action plan summarising all of the recommendations can be found at the very end of this document.

Within a year of submitting this report a follow up review will be conducted to assess how far the university has come in implementing these changes.

FOREWORD

As a black student studying a STEM subject, there was a great motivation to organise an event such as this. During the completion of my undergraduate science degree, for four years I saw the severe lack of Black, Asian and Minority Ethnic (BAME) inclusion not only within undergraduates but postgraduates and staff across the Science, Technology, Engineering and Mathematics (STEM) subjects. I saw the significant lack of BAME role models in higher academic and industrial positions alongside the lack of acknowledgement and education of the BAME contributions to STEM. I strived to change this.

Following on from the 'BME attainment gap report' presented by Hannah Dualeh,[3] I saw many of the problems I experienced as a young black female student resonated amongst wider population of BAME students and staff. From this, I became eager to create a solution-based event where we could suggest ideas for helpful improvements to the university, STEM departments and workplaces. I recognized that we need to understand how we can best support and develop BAME students so that we can begin to bridge the BAME attainment gap and improve the retention of BAME people within STEM subjects, whether that is in academia or industry. In doing this, we can build a better support network which will hold together the framework of a more inclusive society.

Research has shown that a positive studying environment is integral to an individual's ability to progress and excel within their chosen subject. Recently a more welcoming, comfortable safe space for both BAME students and staff is beginning to be established within some universities across the United Kingdom (UK), however, continued work on understanding the root cause of the lack of BAME representation remains ever-present and important.

Within the STEM sector there is a continued push for interdepartmental collaborations as well as building a strong community of people (across different races) that can share ideas, innovations and knowledge. However, research has shown that such a community can only thrive on foundations that are built upon equality, diversity and inclusion.[1]

Across the STEM community within Bristol there is a severe underrepresentation of people of colour within higher education and local STEM businesses, despite Bristol being a thriving, multicultural city. The University of Bristol is one of the best universities in the world for research within STEM but is also one of the Russell Group Universities with the fewest number of BAME students (especially domicile UK Black students, see Appendix for data).

The 'Being BME in STEM' event that took place on 6th February 2019, provided a platform for individuals across the University, Bristol and the South West to communicate their thoughts and strategies for tackling the issues surrounding the retention of BAME students and staff in the STEM sector. Throughout the event there was a clear sense of empowerment and willingness to listen to many different points of views with an understanding that fixing the core of the problem will require a multipronged approach (detailed in section 3).

his report is the first of its kind in the University of Bristol, showing the solutions generated on the day of the event. I am overwhelmed by the passion, strength and drive for change shown on the day by the students who participated in the newly formed BAME STEM network committee, the facilitators and panel members.

FUNDRAISING

It was important for me to support a local Bristol charity, chosen to be 'Off the Record' a local mental health and wellbeing charity for young people. Fortunately, I have seen first-hand some of the charity's fantastic work to support and improve the lives of young BAME adults which further inspired me to organise this event. The charity helps to support Project Zazi, which provides help to young BAME adults tackling inequality, discrimination and oppression whilst promoting good mental and physical health.

Ms. Lara Lalemi

First Year PhD student (2019)

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INTRODUCTION

Diverse teams produce better science; teams with diverse interests, a variety of intellectual approaches and complementary skills are more likely to be able to identify and solve complex problems.[1] However, currently only 0.5% of Professors are Black, there are only 3 Black, Asian and Minority Ethnic (BAME) Vice-Chancellors in the UK's top 50 universities and only 3.4% of BAME individuals represent Heads of FTSE 100 companies.[2]

This deficiency of BAME personnel is not just observed for the top positions; in 2016 BAME individuals accounted for only 22% of undergraduates, 16% of postgraduate research students and 15% of academic staff, in the UK.[3] This clearly illustrates the 'leaky pipeline' that must be tackled.

Within UK Science, Technology, Engineering and Mathematics (STEM) courses, the percentage of BAME undergraduates is generally similar to the national average. However, the physical sciences have a much lower proportion of BAME undergraduates (16%). For full statistics see Appendix 2.

Furthermore, these values vary greatly for individual UK universities. The University of Bristol is one of the Russell Group Universities with the fewest number of BAME students (especially domicile UK Black students) studying STEM disciplines (Figure 1). In some departments, BAME students account for only 8% of the total cohort. This results in BAME students often being the only one or one of very few in their year and can lead to feelings of isolation. In a 2015 survey, 55% of respondents felt that BAME representation within the student body was extremely or relatively bad, with just 21% reporting that it was extremely or relatively good.[4]

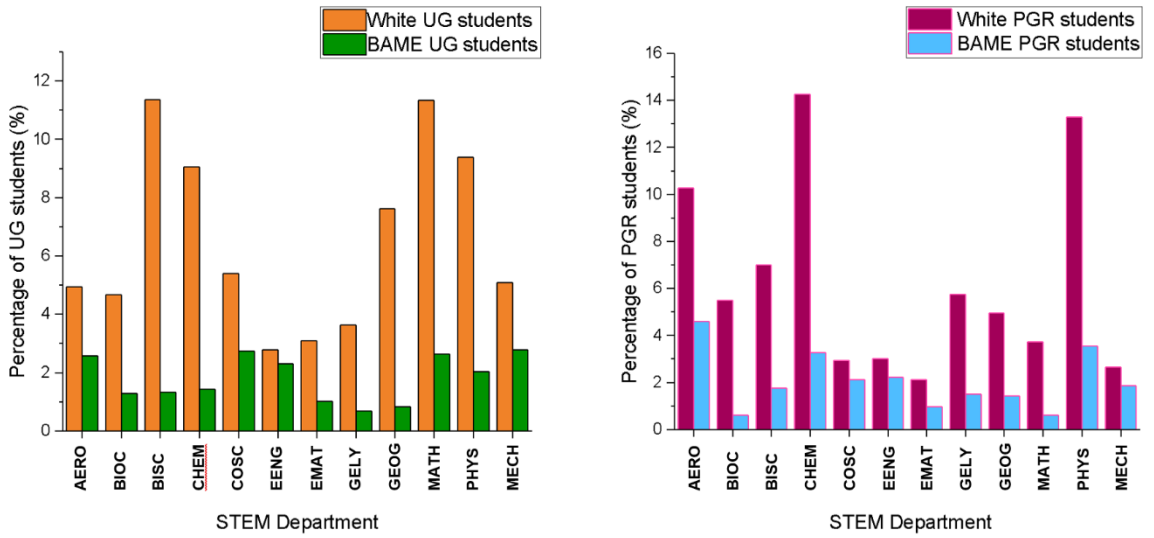

Figure 1. White and BAME undergraduate (left) and postgraduate research (right) students in University of Bristol STEM departments as a percentage of the total STEM students in the University. Abbreviations listed in the Appendix.

Within STEM disciplines, the feeling of exclusion is also caused by a lack of acknowledgement of and education about the BAME contributions to scientific discoveries and development, along with the lack of BAME role models in senior academic and industrial positions. When asked, in a 2015 survey, how well students felt that their identity was represented in the academic staff body, 67% of BAME students felt that representation was extremely or relatively bad, with just 15% reporting that it was

extremely or relatively good. Female students were more likely to feel that representation was bad, with 78% feeling this compared to 45% of male students.[4]

BAME students also felt that the representation of their identity was poor amongst administrative staff, with 63% describing this representation as extremely or relatively bad. Women were again more likely to feel that representation was bad, with 73% feeling this, compared to 44% of men.[4]

As a result of this lack of representation and inclusion, BAME students feel they cannot be completely themselves at University, with a participant from a focus group stating: "I kind of feel not as able to be open about my ethnic side to other people, maybe just not knowing how they'd react". These feelings of isolation are likely to contribute to BAME graduates being 15.2% less likely to receive a first or 2:1 compared to their white classmates.[4]

This lack of inclusion leads to a loss of potential BAME scientists from the community. This loss of BAME individuals, at all career stages, must be tackled. It is important that more BAME students are encouraged and supported to pursue careers in STEM disciplines to increase diversity and help solve global challenges.

Therefore, Lara Lalemi and the newly formed BME in STEM Network organised the 'Being BME in STEM Conference and Workshop' to facilitate open, inclusive discussions about the inequality issues faced by BAME members of our community. Furthermore, the event aimed to generate ideas about how best to support and develop BAME students in order to begin bridging the BAME attainment gap and improve recruitment and retention within STEM subjects.

SUMMARY OF THE EVENT

The conference included speeches from esteemed BAME academics, a round table discussion workshop and question panel. After the conference, participants were asked to complete short questionnaires to assess the usefulness of the event and how it could be improved in the future.

The conference also sought to raise money for the Young person mental health charity, Off the Record. Off the Record help support Project Zazi, which provides help to young BAME adults tackling inequality, discrimination and oppression whilst promoting good mental and physical health.

In addition, the conference was supported by many companies (listed in the acknowledgements) and participants had a chance to speak with these companies about careers and their equality, diversity and inclusion (EDI) policies.

INTRODUCTORY TALKS AND KEY NOTE SPEAKERS

The conference was opened with an introduction to the event, given by organiser Lara Lalemi; followed by a speech from the Rt. Hon. The Lord Mayor of Bristol, Councillor Cleo Lake. Cllr. Lake focussed on the history and influence of BAME cultures on Science. She presented the room with a timeline spanning centuries, illustrating how civilisation had developed through innovation even before the enlightenment period.

Two keynote speakers; Dr Erinma Ochu MBE, Lecturer in Science Communication and Future Media at the University of Salford and Dr Emmanuel Adukwu, Senior Lecturer (Biomedical Science) and

Employability Lead – Coordinator UWE Africa Network and Africa Week at UWE Bristol followed Cllr. Lake's speech.

'The talks were very inspiring, and I enjoyed the panel discussion as well, especially from Cllr. Lake, Dr. Erinma Ochu and Prof Christina Hicks' – Participant 1

Dr Ochu's speech described the difficulties she faced forging her own path to her lectureship. She talked about the methods she uses to ensure that her lectures involve positive interactions for herself and students of BAME backgrounds, i.e. implementing a code of conduct for everyone. Dr Ochu has since written a blog post based on her speech which further reflects on her experiences and those of the other speakers.[5] Dr Adukwu also spoke of his career path, including the hardships he had to overcome due to immigrating from Nigeria as a student. He also mentioned the importance of mentorship within the BAME STEM community, which he has experienced first-hand as both a mentor and a mentee.

These talks all helped to illustrate some of the issues faced by BAME people in STEM disciplines and gave some examples of methods for tackling the issues and promoting inclusion. This created an energised atmosphere for discussions on the issues and possible resolutions.

ROUND TABLE DISCUSSIONS

Attendees were split into tables and each table was assigned and asked to discuss one of four questions about the issues facing BAME people in STEM subjects and to suggest how this could be overcome. There was a total of nine tables, each with a scribe and a facilitator, to keep everyone on track. In the process of developing possible solutions for their assigned question, attendees were encouraged to draw on and share their own experiences. Attendees that had been through similar experiences were able to relate to each other, reducing feelings of isolation. Furthermore, sharing experiences facilitates understanding in people who have not had the same experiences. This created a positive atmosphere and supported the development of ideas and solutions to tackle the issues faced by BAME staff and students in STEM.

'Listening to views and ideas from a wide a selection of people as possible. It was great that there were not only people from the University, but also from other Universities, learned societies, local companies, etc. It was actually really great to have an event where students and academics felt very much equals.' -Participant 2

After the discussions time had been allocated to allow everyone to walk around and discuss each other's questions, as well as, put forward any of their own questions. Following this, the tables regrouped and decided on the most appropriate way to tackle each area.

Before the tables revealed their final suggestions, the invited panellists were each asked to give their views and suggestions for one of the questions.

THE PANEL

The panel included the two keynote speakers, Dr Ochu and Dr Adukwu, as well as Dr Mark Richards (Senior Teaching Fellow and Head of Physics Outreach at Imperial College London), Professor Fred Manby (Professor of Theoretical Chemistry at University of Bristol), Professor Christina Hicks (Lecturer in Political Ecology at Lancaster University) and Nasra Ayub (Undergraduate Education Officer at University of Bristol Student Union).

The panel's suggestions were consistent with those arising from the round table discussions, detailed in section 0. The atmosphere at the conference and the chance for open communication and discussion of the issues has resulted in clear ideas for improving inclusion and retaining BAME people within STEM disciplines.

FEEDBACK FROM THE QUESTIONNAIRE REPONSES

The responses to the questionnaire, given to participants after the event, highlight how beneficial and valuable participants found the Conference. Participants found all sessions advantageous and appreciated the chance to hear the views and experiences of a variety of people and to be involved in developing solutions.

'Nothing comes to my mind when thinking about improvements– this was the best STEM conference that I've been to'-Participant 5

The conference was held over the course of an afternoon to try to ensure family friendly hours, allow travel time for invited speakers and allow students to attend without losing a whole day of research. However, many participants felt making the event longer, to allow more time to discuss the issues and solutions, would have been beneficial and is something to bear in mind for future events.

POINTS ARISING FROM THE ROUND TABLE DISCUSSIONS

Raising awareness of BAME issues and creating an inclusive environment is important, in order to improve the confidence of BAME students and ensure diversity within STEM subjects. Part of this involves improving recruitment, retainment and attainment of BAME students. It was noted that while the University of Bristol currently lacks diversity, there is "evidence of trying to make [an] ideal environment". This is encouraging but there is much more that could be done to further support BAME students and staff.

Therefore, the round table discussions involved each group being given one of the following four questions as a starting point for discussion and generating ideas.

1. In what ways can we improve the recruitment and retention of BAME students to STEM subjects?

2. How and why do we protect minority groups such as BAME students/staff from feelings of isolation in STEM?

3. What does an inclusive education system look like and what changes can we make to the delivery of STEM subjects at our universities and workplaces?

4. In what ways could STEM employers create an inclusive working environment for potential BAME applicants?

The following sections will summarise the points raised during the round table discussions and the suggested actions to be taken. It is important to bear in mind that not all BAME individuals come from the same background or have the same opinions on how to improve inclusion. However, this conference gave participants, from a range of backgrounds, the chance to discuss the issues and develop ideas with the aim of improving inclusion for all BAME individuals.

The key themes that came out the of discussions where:

1. Through outreach events, BAME students should be encouraged to engage with and pursue STEM subjects, from a young age.
2. More needs to be done at University level to raise awareness of the issues faced by BAME students and staff and to support them, including creating an inclusive curriculum and not tolerating unacceptable behaviour.
3. Ways the University and industry can help enable all students to succeed in diverse communities after graduating.

OUTREACH

Outreach activities are an opportunity to encourage students to consider a career in STEM subjects. Various studies have illustrated that educational outreach activities improve learners' opinions of science and encourage more students to consider careers in related fields.[6,7]

Many University of Bristol STEM departments already advertise and offer outreach events aimed at school children. However, it is important that these events engage with and encourage all children. Therefore, all University personnel involved with outreach activities should be required to take unconscious bias training.

ENGAGEMENT FROM PRIMARY SCHOOL ONWARDS

All opportunities should be taken to actively engage with as many young people as possible, as much as possible, beginning as early as possible. Students can be lost from STEM careers before they even reach secondary school. Consequently, engaging with primary school children and showing them the variety of careers available within STEM subjects is crucial to the future of our fields of study. It is also important to address possible stereotypes associated with people working in STEM disciplines, as early as possible, to allow all children to see themselves in those roles.

Furthermore, by working with schools, the University should help teach school children about the current issues faced by BAME students, in STEM, and how we can change this. This can be achieved through BAME speakers going into schools and talking about their experiences and why they love their STEM subjects. Giving children role models and showing them what people similar to themselves have achieved can help inspire students to engage with STEM subjects, themselves. Therefore, encouraging BAME staff and students to get involved in outreach activities (whether giving a talk or helping with a department organised event) is beneficial. Although, it is important to recognise the work loads of staff and students and ensure that those volunteering are not overloaded as a result.

MENTORING SCHEMES FOR YOUNG BAME PEOPLE

Another way to provide role models would be to instigate mentoring schemes between BAME University students and school children (both primary and secondary). This would improve confidence, through regular encouragement and support. It also gives school children a chance to find out more about various careers and life at University from people they can relate to. The mentorship programmes could be run in collaboration with South West community centres to help reach as many young people as possible.

SUPPORT AT UNIVERSITY

There is a quote on the University of Bristol EDI webpages, taken from the University Vision and Strategy 2016 which reads: "*We aspire to a fully inclusive culture. We value the diversity of thought, belief and background in our community that enables the University to be effective at challenging accepted norms and resilient in the face of continual change*". It is important that all members of the University adhere to this ideal and that the University continues to develop its policies and practices in pursuit of this.

STUDENT APPLICATION PROCESS

The University of Bristol offers contextual offers and widening participation programmes for students from disadvantaged backgrounds. However, many attending this conference were not aware of the availability of these routes at the University of Bristol. Hence, more visibility of the various options

and support offered to applicants from disadvantaged backgrounds is required. This may include ensuring everyone involved in open days and school career events is aware of these options and can direct interested parties to sources of further information. While not all BAME students are from disadvantaged backgrounds, it is important that those who are receive the relevant support.

To further encourage students who are the first in their family to go to University, a peer mentoring scheme with first year students, who had a similar experience, could be established.

To help encourage and support more applications from BAME students and increase diversity within STEM subjects, specific funding streams for BAME students and positive discrimination could be introduced.

However, it was noted that quotas should not be used as a 'box ticking exercise' but as a guide for how much improvement has been made. Therefore, information on race, gender and other identifiers does not need to be given on the application until a place is unconditionally or conditionally offered. If the data are needed for recruitment statistics this should be separate from the application. Furthermore, anonymous applications would help to prevent unconscious bias.

UNIVERSITY COMMUNITY

The University must be an inclusive environment for all members. To this end, everyone at the University should be made aware of the issues faced by BAME people. This can be done through unconscious bias training for all new staff and students and a 'BAME 101 course' for all staff, to promote cultural understanding.

The University Student Inclusion Team have recently introduced race equality training. However, places are limited, and it is not mandatory. Once the course has been tested and fully developed, all staff should be required to attend a training session.

Furthermore, more events that allow for open communication about diversity should be organised at the University. These events help create a feeling of inclusion, a sense of community, show a drive to make change and make it clear that the issues are not being ignored and everyone is valued.

An important factor in preventing isolation is to ensure the visible presence of BAME role models. This includes BAME staff in academic and non-academic roles. Highlighting the work these individuals do and making it clear that they are valued by the University, will make all BAME individuals feel welcome. Increasing the number of BAME guest lectures will encourage BAME students to continue careers in STEM subjects.

Mentoring schemes for new students and staff and BAME in STEM networks create a sense of belonging, both at the University and within departments. This would create approachable points of contact for support. Increasing awareness of established BAME networks, by signposting the webpages on other relevant internal webpages and supporting student societies to run non-drinking events would further promote a sense of inclusion.

Over the last year, the University has greatly improved its pastoral care. However, it is important to ensure diversity within health services and well-being staff, so all students feel included and understood. The 'BAME 101 course', suggested to improve cultural understanding of all staff and students, is particularly relevant to health services personnel and all staff with pastoral care responsibilities. It is essential that academics and personal tutors are supportive and approachable.

UNACCEPTABLE BEHAVIOUR

All staff, irrespective of position, must be accountable for their actions and should be made aware of how their behaviour can be interpreted by others, to prevent the occurrence of microaggressions. Otherwise you risk isolating and lowering the confidence of BAME individuals who experience microaggressions and this decreases the likelihood of them pursuing a career in a STEM discipline.

During the round table discussions, concerns were raised about the attitudes and behaviour of some senior academics in some STEM departments and how this creates a stressful, aggressive and uncomfortable working environment. It was noted that other (particularly younger) staff members in these departments show a more inclusive attitude but cannot make a substantial change to the department's culture while they are resisted by senior staff members. The University needs to ensure that all staff are accepting of and working towards an inclusive working environment.

It is extremely important that there is zero tolerance for discrimination and people are encouraged to report any incidents. The University's Report and Support website is very useful for receiving help and support if you have been the victim of an incident. However, it has not been well publicised, and many students are unaware of its existence. In order to be effective, the Report and Support tool needs to be known about by students and easily accessed. This can be achieved by placing posters in departments and placing a link and description for it on the University 'Current Students' home page. Highlighting consequences faced by anyone who behaves in an unacceptable manner would further encourage people to report incidents and reinforce that the University is an inclusive environment.

DIVERSITY IN THE CURRICULUM

An inclusive and diverse community should be taught an inclusive and diverse curriculum. The talk by Cllr. Lake illustrated the contribution of BAME scientists to the STEM field and it is important that this is recognised within the taught courses at the University. It was suggested that ensuring diversity on teaching committees, within departments, would help create a more diverse and inclusive curriculum. Educating students on the contributions of BAME people in STEM disciplines would make it clear to all students that this is an inclusive environment and all contributors are valued.

This message would be reinforced by recommending reading of a variety of texts from different authors and countries, to support all lecture courses. Furthermore, a clearly advertised BAME authors' section in the library would introduce students to more BAME role models.

It is also important that the city's past is not ignored, including its links to slavery. The Wills Memorial Building was named after Henry Overton Wills III, who invested heavily in the University and became the University's first chancellor. However, campaigners have claimed he was a slave trader and asked for the building to be renamed. In a press release, after the decision was made not to rename the building, a university spokesperson said, "*it is important to retain these names as a reflection of our history*". They went on to say, "*we cannot alter the past, but we can enable reflection upon it and add to knowledge about slavery past and present*".[8]

Therefore, it is essential that all students are informed of the city's past and that the contributions of all who have helped shape it are recognised. By ensuring knowledge on slavery is available and the topic is discussed, the University should clearly show that the heritage of all its members is recognised and valued. This would help create a community where all members feel comfortable being themselves and feel able to show their ethnicity.

A recent announcement, by the University of Bristol, has stated that Bristol is to become one of the latest top education institutes after Cambridge University to confront its links to the slave trade by

appointing a new academic role to investigate its history. It is estimated that 85% of the original funding for Bristol University came from slavery, which the university has been yet to address until now. This positive step forward can be attributed to many of the BAME staff and students campaigning for and working towards creating this role.[9]

BEYOND UNIVERSITY

It is crucial that the sense of community and support the University wants for all members, does not end at graduation. It is also important that while at university students are given the chance to explore possible career options and experience life in industry. Therefore, the University must work with industry to ensure students will experience a diverse and inclusive work environment.

ALUMNI

The Bristol Alumni Association is the main way graduates stay in touch with the University. Therefore, it is important that it is representative of all graduates. While it is stated that applications for the Alumni Association Committee membership will give due consideration to diversity with respect to protected characteristics, other parts of the Alumni web pages do not appear as inclusive. The web page on prominent alumni (shown in Figure 2) does not show a single BAME alumni. Although if you click the links from this page, there are clearly many prominent BAME alumni who could be featured.

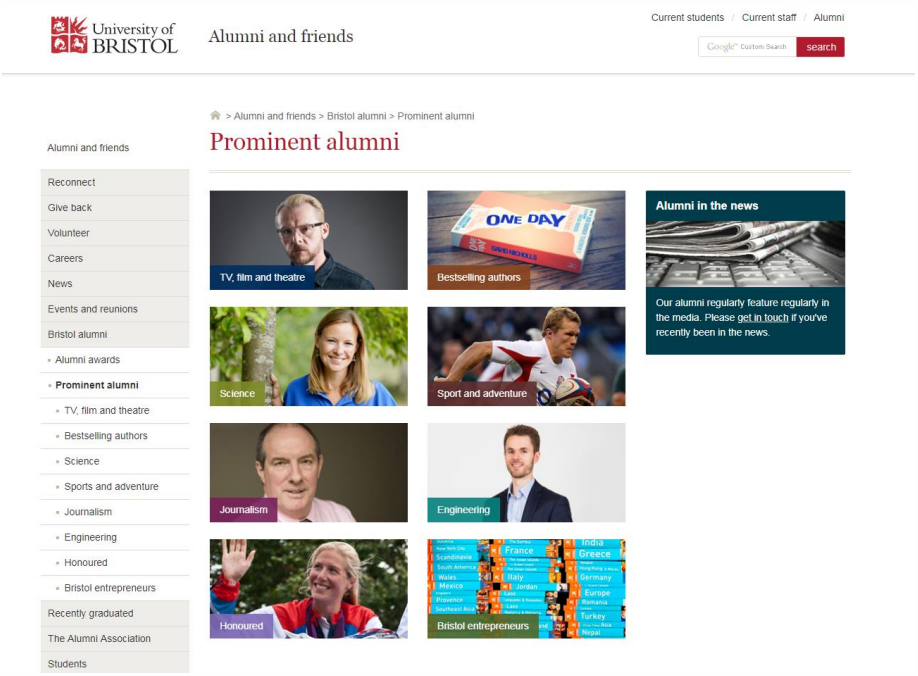

FIGURE 2. IMAGE OF THE UNIVERSITY OF BRISTOL, PROMINENT ALUMNI WEB PAGE.[10]

This lack of inclusion does not just alienate BAME alumni, it also affects current students. It is important that BAME alumni are visible and their achievements celebrated to give current BAME students role models. Having a BAME alumni to mentor current students and give advice on job applications would further encourage and support BAME students to pursue their desired career, after graduation. Creating a BAME Alumni Network would allow for the organisation of BAME alumni mentors.

INDUSTRY

Many of the suggestions for a more inclusive university community are also relevant to industry, especially unconscious bias training and mentoring schemes. Industries that want to attract the best and brightest graduates need to ensure they provide an inclusive working environment and clearly show they will not tolerate microaggressions.

Furthermore, the University should work with its industrial partners to ensure an inclusive working environment exists and all placement students can have a positive experience. The University must also ensure that the application process for industrial placements is unbiased. One option is to insist applications are anonymous, to prevent unconscious bias. Ensuring students are interviewed by a diverse panel, who have had unconscious bias training would also be beneficial.

Improving links with industry throughout degree courses, including more departmental trips to relevant local businesses, would allow students to gain a better idea of career options. It would also give students an opportunity to find out more about the culture and policies in businesses and how they ensure a diverse, inclusive working environment.

CONCLUSIONS

To create a more diverse and productive work force, it is vital that the recruitment and retainment of BAME individuals within STEM disciplines is improved. The Being BME in STEM Conference gave participants the chance to discuss the issues and suggest improvements that could be made to further support BAME individuals at all career stages. These suggestions would also ensure a more inclusive and positive working environment for everybody.

Participants enjoyed the opportunity to share their view points and experiences in order to develop suggestions for how to improve inclusion of BAME people within STEM and felt that organising more events similar to this one would facilitate communication and drive solutions for BAME issues. Increasing awareness of the issues is an important step which can be initiated through unconscious bias and ‘BAME 101’ training.

Furthermore, there must be zero tolerance of microaggressions to ensure an inclusive environment for all. Highlighting the Report and Support Tool, encouraging its use and informing the community of action taken, when necessary, would promote this message.

It is clear that encouragement and support are needed from Primary School onwards to prevent loss of potential STEM talent. This can partially be provided by mentoring schemes at all stages; from primary and secondary school, through undergraduate/postgraduate degree and during STEM careers in industry or academia. To complement these schemes, greater visibility of BAME role models is required at all levels. This includes diversifying the curriculum to include contributions from BAME individuals and highlighting the achievements of BAME Alumni.

Overall, a wide range of ideas and areas to tackle were suggested during the conference, highlighting how beneficial it would be to organise similar events in the future. It is crucial that these suggestions are addressed. Therefore, to aid in the implementation of all the suggestions given and ensure none are missed, an action plan is attached at the end of this document.

It is hoped that these changes will help increase recruitment and retainment of BAME individuals, furthering the goal of a diverse and inclusive community which will facilitate the advancement of STEM research.

A NOTE FROM THE VICE CHANCELLOR, HUGH BRADY

'I know a lot of work goes into sessions like this where people can feel safe enough to open up and to be really constructive. So, what I guarantee you is that we will take all of the suggestions [from the day] really seriously and those that we cannot implement we will tell you why'

To ensure all suggestions are considered, an action plan summarising the key points has been provided at the very end of the document (below the Appendix).

ACKNOWLEDGEMENTS

Thank you to all those who made this event possible, especially Lara Lalemi for heading the organisation and running of the conference.

Panel and Speakers:

- Cllr. Cleo Lake; the Rt. Hon. The Lord Mayor of Bristol
- Dr Erinma Ochu MBE; Lecturer in Science Communication and Future Media at the University of Salford
- Dr Emmanuel Adukwu; Senior Lecturer (Biomedical Science) and Employability Lead – Coordinator UWE Africa Network and Africa Week at UWE
- Dr Mark Richards; Senior Teaching Fellow and Head of Physics Outreach at Imperial College London
- Professor Fred Manby; Professor of Theoretical Chemistry at University of Bristol
- Professor Christina Hicks; Lecturer in Political Ecology at Lancaster University
- Nasra Ayub; Undergraduate Education Officer at University of Bristol Student Union

Supporting Partners:

- Bristol Doctoral College
- Cabot Institute
- The Local RSC Committee
- University of Bristol School of Chemistry EDI Committee
- University of Bristol School of Chemistry Administrative Team
- Five AI
- HSBC
- KETS Quantum
- We the Curious
- The Met Office
- GW4+
- BEATS
- AstraZeneca

Facilitators:

- Mr Sammuel Zubair; University of Bristol
- Ms. Rebecca Scott; University of Bristol
- Mr Robiu Salisu; University of Bristol
- Miss Nuzhat Tabassum; University of Bristol
- Miss Angela Suriyakumaran; University of Bristol
- Mr Khalid Hammad; University of Bristol
- Mrs. Helena Craig; Bristol local
- Dr Mark Richards; Imperial College London
- Ms. Jenny Hawkins; University of Bristol, GW4+

Helping Members:

- Ms Sally Patterson; University of Bristol
- Miss Tumi Edun; University of Bristol
- Miss Vicky Phung; University of Bristol
- Miss Maggie Kadembo; University of Bristol
- Mr David Nzewi; University of Bristol
- Miss Nana Agyare; University of Bristol
- Miss Mwaka Sipula; University of Bristol
- Mr Jamie Davis; University of Bristol
- Mr Julio Mkok; University of Bristol
- Miss Emma Crossley; University of Bristol
- Miss Mae Masters; University of Bristol
- Miss Joanna Clowes; University of Bristol
- Miss Marla Mbemba; University of Bristol
- Dr Natalie Pridmore; University of Bristol

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APPENDIX 1

LIST OF ABBREVIATIONS

AERO	Department of Aerospace Engineering
BAME	Black, Asian and Minority Ethnic
BIOC	School of Biochemistry
BISC	School of Biological Sciences
CHEM	School of Chemistry
COSC	Department of Computer Science
EDI	Equality, Diversity and Inclusion
EENG	Department of Electrical and Electronic Engineering
EMAT	Department of Engineering Mathematics
GELY	School of Earth Sciences
GEOG	School of Geographical Sciences
MATH	School of Mathematics
MECH	Department of Mechanical Engineering
PHYS	School of Physics
STEM	Science, Technology, Engineering and Mathematics
UK	United Kingdom
UWE	University of the West of England

APPENDIX 2

DATA SHOWING PERCENTAGE OF BAME AND WHITE STUDENTS AND STAFF IN UK UNIVERSITIES.

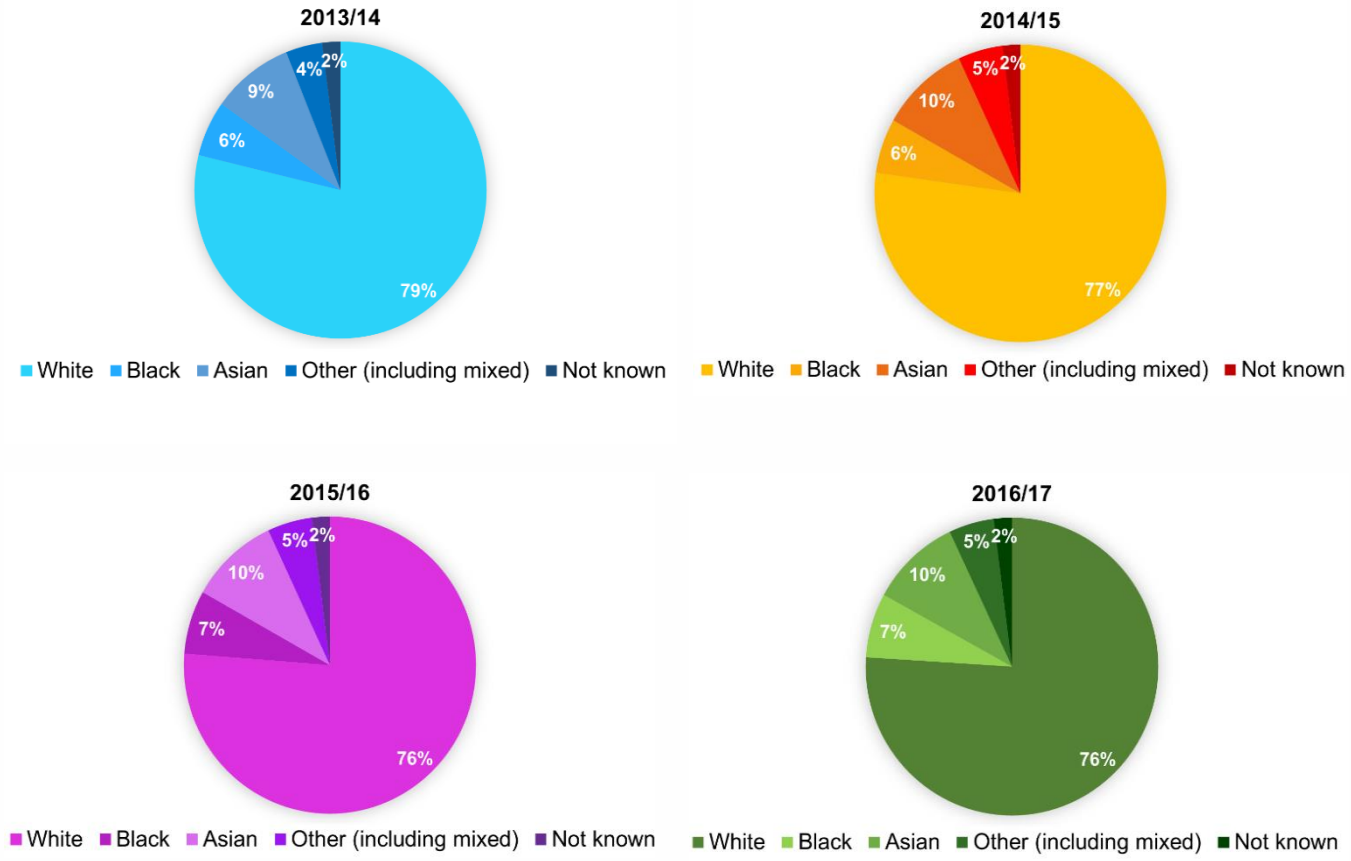

FIGURE 3. PERCENTAGE OF WHITE/BAME UNDERGRADUATE STUDENTS IN THE UK.[3]

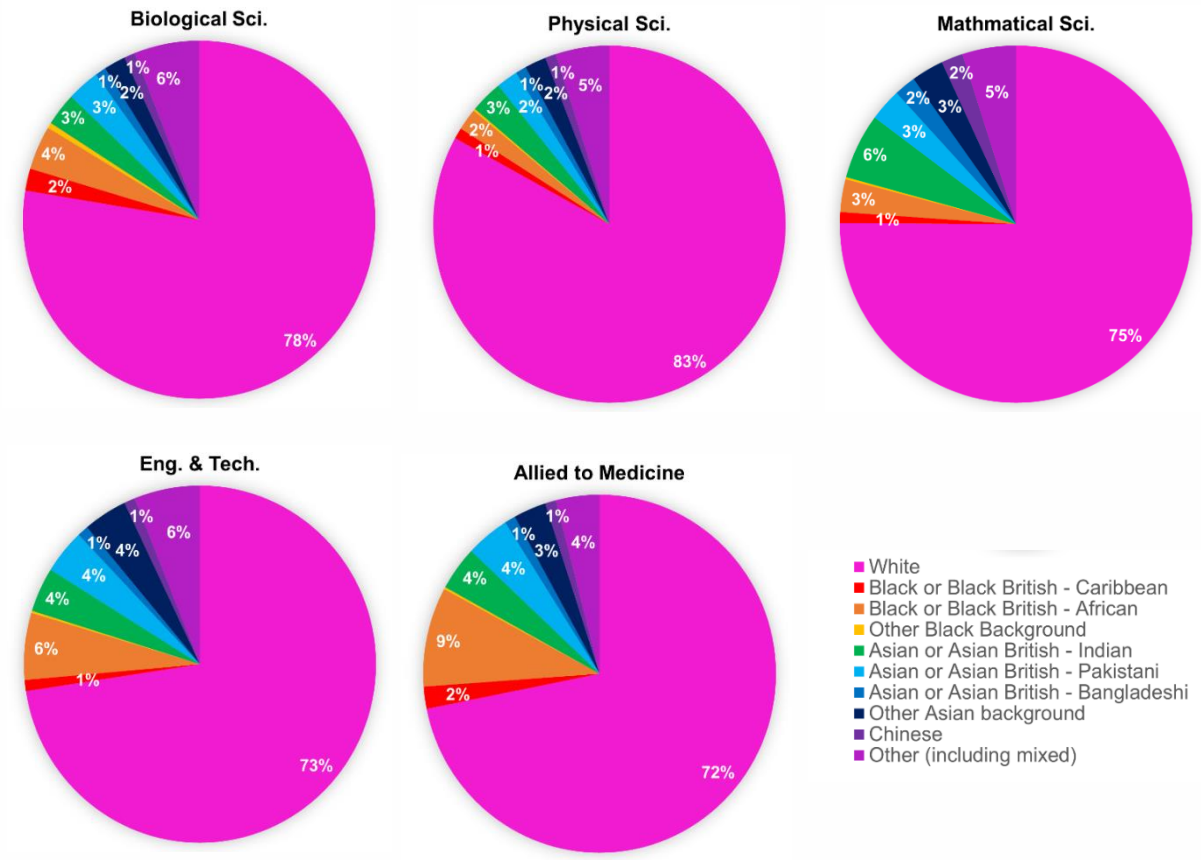

FIGURE 4. PERCENTAGE OF ETHNIC UNDERGRADUATE STUDENTS IN THE UK BY STEM DISCIPLINE.

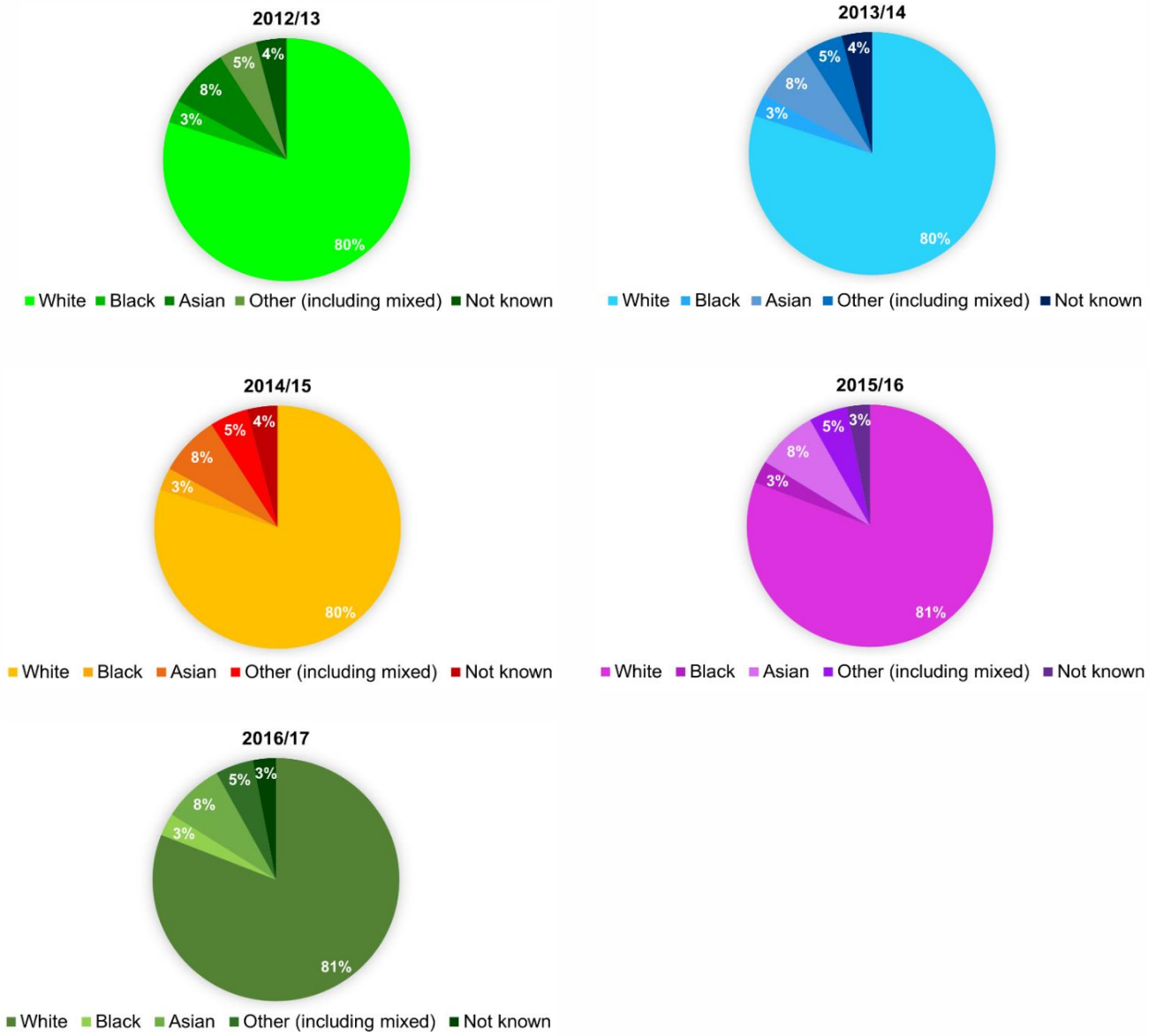

FIGURE 5. PERCENTAGE OF WHITE/BAME POSTGRADUATE BY RESEARCH STUDENTS IN THE UK.

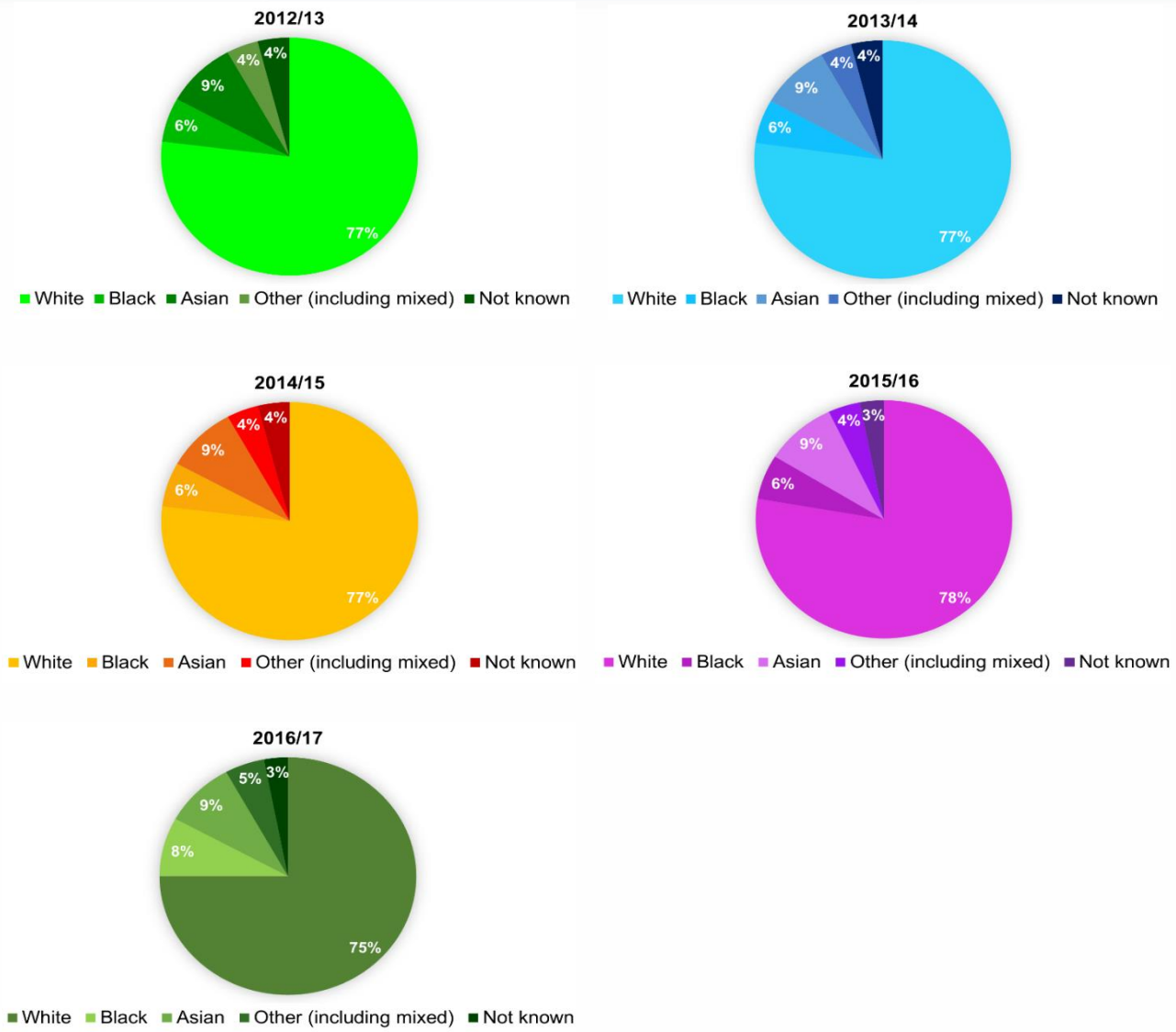

FIGURE 6. PERCENTAGE OF WHITE/BAME POSTGRADUATE TAUGHT STUDENTS IN THE UK.

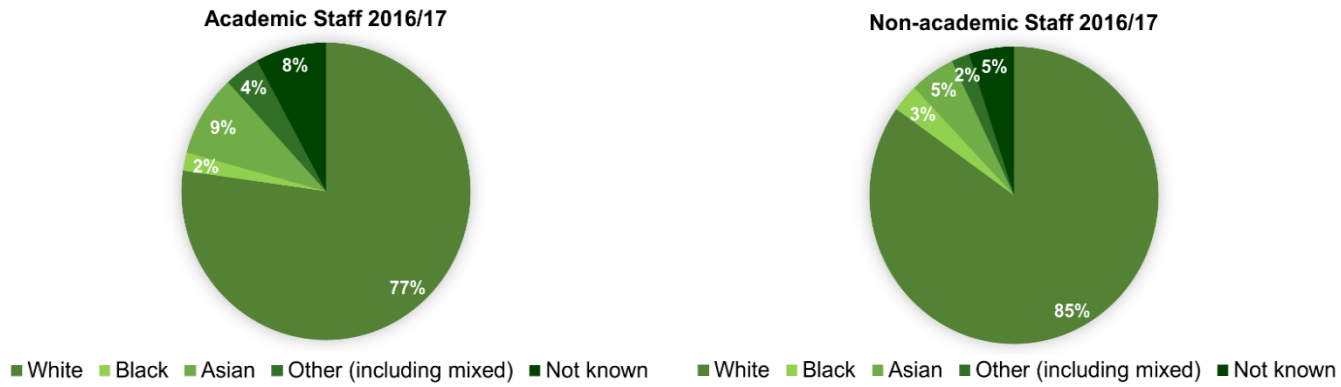

FIGURE 7. PERCENTAGE OF WHITE/BAME STAFF STUDENTS IN SCIENCE IN THE UK.

APPENDIX 3

NAMES OF RESEARCHERS WHO CONDUCTED THE EVENT PROJECT

- Sammuel Zubair
- Rebecca Scott
- Robiu Salisu
- Nuzhat Tabassum
- Angela Suriyakumaran
- Jenny Hawkins
- Maggie Kadembo
- Nana Agyare

BEING BME IN STEM FOCUS GROUP CONCLUSIONS CONDUCTED BY NANA AGYARE AND MAGGIE KADEMBO

Influences:

- For all participants, family was a great factor
- Parents are essential in pushing an individual towards a career, typically BAME parents aim towards medicine, engineering and law as creditable careers
- Doing an arts subject was not an option due to lack of family support and influence due to the perceived lack of career prospects in those fields

Experiences in School:

- Generally, there was a feeling of teachers discouraging black students to progress as they don't believe in their capabilities
    - A second year Cellular and Molecular Medicine student said that her sister was prevented from having a practise Oxford interview with the Headteacher by the teachers blocking her application
    - A female Muslim student who wears the Hijab feels as though religion is a barrier- feels judged as people already have a misconception about her and that has then put her at a disadvantage for some things.

University:

- Many of the students feel as though they 'represent' their race. One student said that Heads of Department and radio interviewers have said to her 'What do black people feel about this?'- One black person cannot speak for everyone as the black voice is not monolithic (see page 5).
- One student praised her tutor as she feels very close to him and would be confident enough to go to him with all her problems. However, the other students didn't agree as they only meet their personal tutor once every term. It was suggested that this needed readdressing.
- Some students feel as though they isolate themselves because they realise that they are so different from others - feel Imposter Syndrome.
- A general feeling of wilful ignorance from white and other POC counterparts on race issues.

- Most students wouldn't know where to go to report incidences in regard to race.
- ACTION: would like a centralised BAME email hotline where students can send in their issues anonymously and there will be POC on the other side who will be able to sympathise with students and report on their behalf.

Ideas:

- Would like to go into high schools to be able to inspire students.
- Would like BME mentions in lectures.
    - Engineering- would like to see how many inventions were made by black people, especially slaves.
    - Biomedical courses- healer cells being taken from a black lady; how much information was gained from doing experiments on slaves.
    - Physics- NASA and Hidden Figures.
- For there to be more BME staff- lecturers, lab demonstrators etc.
- Diversify guest speakers and make sure speakers have a PC background.
- In a Cellular and Molecular Medicine lecture, the lecturer felt 'bad' saying Afro-Caribbean but easily said white.

Future Prospects:

- More BME networking events.
- Upcoming BME mentors.

Advice to Future Generations of Students:

- Make sure to find your people- doesn't have to be in a BAME group.
- Be comfortable.
- Realise that you are valid, speak up in lectures if you have a point to make.
- Ask for opportunities and on questions you have in lectures.

ACTION PLAN TO IMPROVE RECRUITMENT AND RETENTION OF BAME STUDENTS AT THE UNIVERSITY OF BRISTOL

Action	Objective	Rationale
Outreach		
1	Primary and Secondary School STEM Outreach with diverse volunteers.	To encourage all students to consider a career in STEM subjects and to challenge the stereotypes of people who work in STEM.
2	BAME speakers in school seminars.	To provide role models for BAME students and show the diverse range of people who work in STEM disciplines.
3	Instigate mentoring schemes between University BAME students and Primary/Secondary School children	To provide role models, support and encouragement to BAME students.
University Applications Process		
4	Improve awareness of widening participation programs and contextual offers.	Many students were unaware of these options when applying. It is important the applicants that these options are relevant to are informed of them, to ensure Bristol is recruiting the best students from all backgrounds.
5	Peer mentoring scheme for accepted applicants and first year students who are the first in their family to attend university.	To provide support from someone who has been through a similar experience and can identify with the new applicant.
6	Introduce funding to specifically drive applications from BAME students.	To encourage more applications from BAME students and increase diversity.
7	Introduce anonymous applications.	To prevent unconscious bias.
University Community		
8	Unconscious bias training for all University staff and students with a requirement for the training to be completed before personnel can serve as members of committees or interview panels, or be involved in teaching.	To improve awareness of and minimise the effect from unconscious bias.
9	Develop Race Equality Training and make it mandatory for all staff to attend.	To raise awareness of the issues faced by BAME people. Run two hour sessions of BAME 101 training.
10	Organise a rolling programme of BAME events.	To promote inclusion and provide opportunities for students and staff to hear more about the issues and develop solutions.
11	Improve visibility of BAME staff at all levels in the University and highlight the work they do.	To provide BAME role models, and celebrate contributions from our whole university community.
13	Introduce mentoring schemes for new BAME staff and students.	To provide approachable and understanding points of contact for support and advice.

14		To provide a sounding board for ideas to improve diversity and community of support.
15	Increase awareness of BAME Networks by signposting the website on other relevant internal webpages.	To ensure students and staff are aware of the support available.
16	Provide support for societies wanting to run non-drinking events.	To ensure students who are not comfortable with alcohol at social events are still included and have opportunities to socialise outside of their course.
17	Ensure diversity within health services and well-being staff.	To ensure have someone they can identify with to talk to about issues they are facing.
Unacceptable Behaviour		
18	Encourage the reporting of microaggressions and discrimination and ensure the University's Report and Support website is well publicised through posters and a very visible link on the 'Current Students' webpages.	To make it clear there is zero tolerance of unacceptable behaviour (irrespective of the person's position) and ensure people know how to report and get support for any incidents that do occur.
Diversity in the Curriculum		
19	Provide a diverse curriculum that includes BAME contributions to science and ensure diversity on teaching committees.	To ensure all students are aware of the diverse range of people who have contributed to the advancement of their disciplines.
20	Include BAME authors in recommended reading lists for lecture courses and create a BAME author's section in the Library.	To provide more BAME role models and highlight to all students the contributions that have been made in their field, by a diverse range of people.
21	Ensure the city's past and knowledge of slavery are not forgotten or overlooked.	To prevent feelings of isolation and show consideration for the heritage of all cultures.
Alumni		
22	Include BAME Alumni on the "Prominent Alumni" webpage.	To ensure inclusion and provide BAME role models for current BAME students.
23	Create a BAME Alumni Network and support BAME Alumni to mentor current students.	To encourage and support BAME students to pursue their desired career.
Industry		
24	Ensure the industries students do placements with have an inclusive and diverse working environment.	To allow all students to feel included and have a positive experience.
25	Ensure placement students are interviewed by a diverse panel with unconscious bias training and applications are anonymous.	To reduce the effect of unconscious bias.
26	Provide more departmental trips to relevant local businesses.	To give students a better idea of career options and find out more about the diversity and inclusion culture and policies in businesses.

University of BRISTOL