

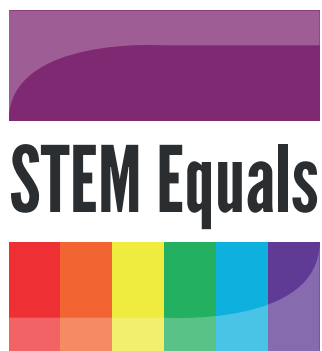


STEM Equals



First Year Report

2019-2020: ONE YEAR BY THE NUMBERS



STEM Equals is a four-year research and impact project focused on creating more inclusive STEM communities for women and LGBT+ people in both academia and in industry. The project is funded by EPSRC with matched funding from the University of Strathclyde. The project industry partner is BAM Nuttall.

50K STEM EQUALS FUNDING CALL 

to support 10 projects led by women at Strathclyde and pump-prime larger bids within EPSRC 's remit

We have done:

18 TALKS AND PRESENTATIONS



Including: Vitae 2019; LGBT Seminar 2020; EPSRC IM Workshop; STEMM Change; and more.

50+ NETWORKING MEETINGS & EVENTS

3 OUTREACH EVENTS



We have organised:

1 LAUNCH EVENT
(feat. 6 speakers)

3 WORKSHOPS



33K ATTRACTED EXTRA FUNDS

for outreach activities, to promote innovation, and to establish global partnerships

We have conducted focus groups and interviews with:

82 PARTICIPANTS

(including 38 staff members and 44 PhD students)

46 HOURS
and

370K WORDS



THANK YOU TO ALL WHO SUPPORTED US THIS YEAR!

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Introduction

One of only eleven EPSRC funded projects under the Inclusion Matters initiative, STEM Equals is a four-year research and impact project focused on creating more inclusive STEM communities for women and LGBT+ people in both academia and in industry.

Through an intersectional lens, the project is: working to examine working cultures within higher education and industry; undertaking research to understand specific challenges and develop new initiatives; developing joint equality learning experiences with key industry-university research partners; and reaching out to other University and strategic industry partners to share best practices.

The project is funded by EPSRC with matched funding from the University of Strathclyde. The project industry partner is BAM Nuttall.

STEM Equals' objectives include:

Identify: Specific challenges/issues women and LGBT staff and PhD students in STEM face; Best practices around fair/equitable hiring/promotion processes in STEM; Best practices around support for and inclusion of women and LGBT staff and PhD students in STEM; Best practices around fair/equitable working policies and practices that impact women and LGBT staff and PhD students in STEM.

Inform improvements to: Hiring and promotion policies and processes; Policies and practices that impact working cultures/STEM communities; Working policies and practices that impact women and LGBT staff and PhD students in STEM.

Evidence policies, practices, and initiatives that enable: More inclusive working cultures/STEM communities to build better belonging for women and LGBT staff and PhD students; Increasing numbers of women PIs on submitted research grants; Retention of women and LGBT talent in STEM; Support for diversity in STEM.

About this Report

We have produced this report to highlight just some of the milestones we have met in our first year through STEM Equals. We have chosen to put a spotlight on our research, initiatives, dissemination, events, collaborations, additional funding we have been awarded, and the project's website and social media.

Some of our achievements are highlighted by the numbers in the infographic (see page 2). We are especially grateful to our 82 participants who engaged with our first phase of research. Their willingness to give us their time and talk about their experiences, including the challenges they have faced in STEM, has provided us with the data to shape the next phases of the project. You can read more about our research on pages 5, 6, and 7.

Most of the accomplishments we have achieved this year occurred during the six months that followed our official project launch event in October 2019 through to March 2020 and the onset of the global pandemic that has fundamentally changed the way we live and work. We are continuing to adapt to the changing times and we are looking forward to the year ahead.

Research

For the first phase/year one of data collection, the STEM Equals research team focused on conducting interviews and focus groups with women and LGBT+ academic staff and PhD students in STEM at the University of Strathclyde. After taking part in an interview or focus group, participants were encouraged to submit reflective writing.

There were **82 participants total** (including 38 staff members and 44 PhD students).

The nearly **46 hours of interviews and focus groups** have been transcribed, amounting to over **370,000 words**. Additionally, 13 participants provided reflective writing amounting to over 9,000 additional words. The data has been thematically analysed using NVivo.

The **six key themes** that have emerged from the data (with examples of some of the subthemes) include:

Challenges (Disadvantages; Stereotypes; Prejudices; Discriminations)

Policy/Practice (Promotion Process; Maternity/Paternity/Family Leave; Workload; Training)

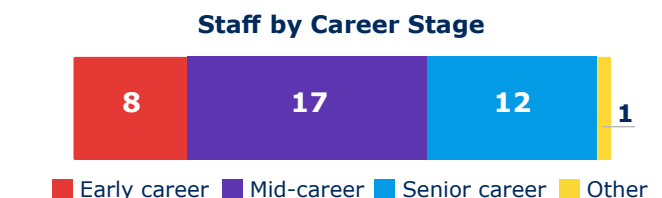
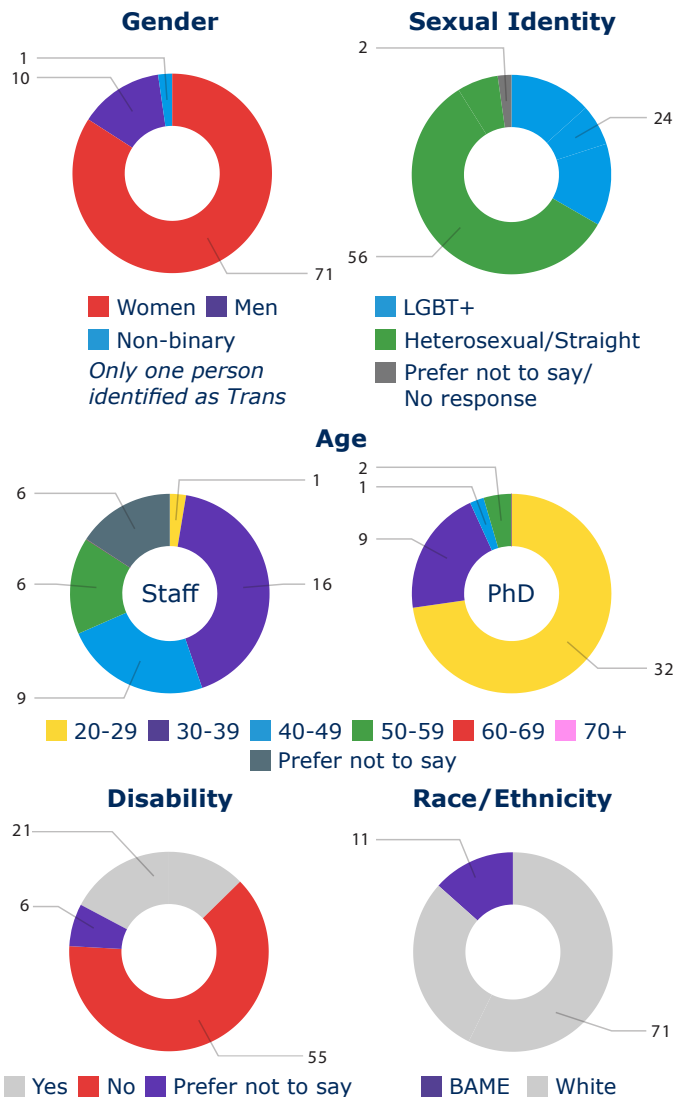
Identity (Gender identity; Sexual identity; Additional/Intersectional identities; Belonging/Not Belonging)

Space (Layout/Design; Accessibility; Representations; Personal Usage)

Career (Nurturing interest in STEM; Teaching; Research; Working with Industry)

Support (Individual Support; Compliance; Practice; Suggestions for change)

Highlights from the participants' demographic data:



Please see Appendix A (page 31) for additional demographic details.

I was frustrated by the fact that becoming a female in that field seemed to affect the tasks that I was expected to have and the skills I was expected to have. (woman, staff)

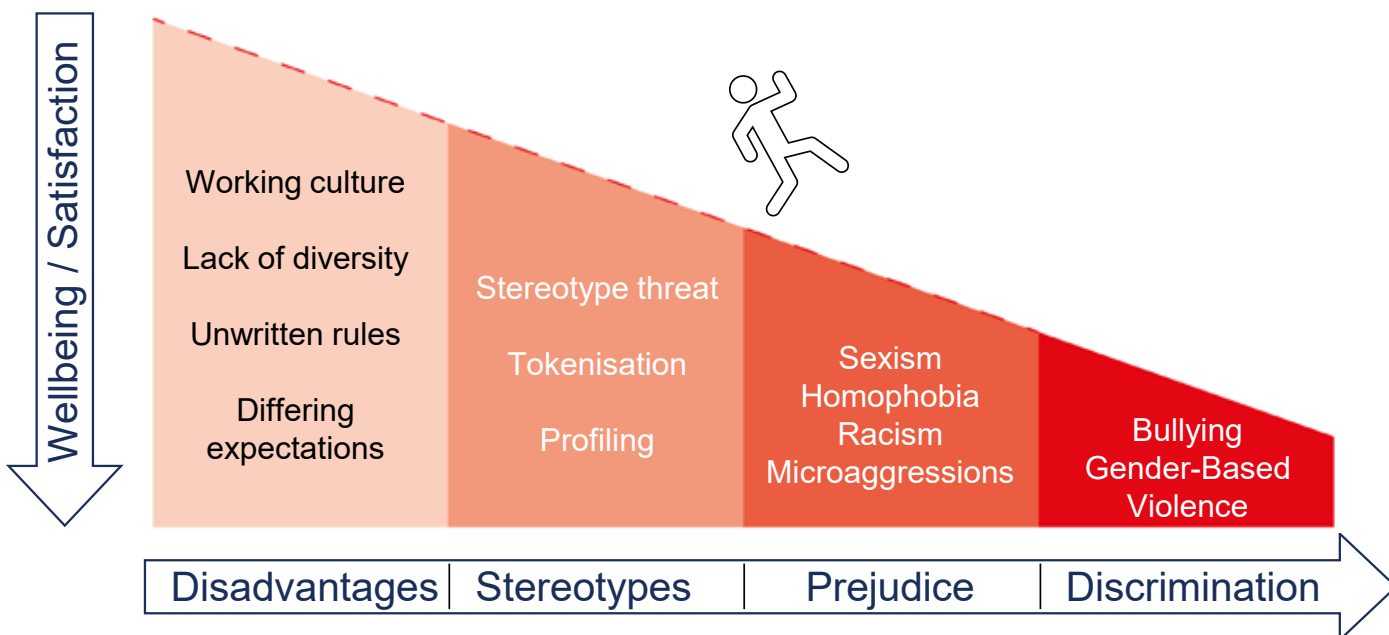
I don't really know any outwardly LGBT like people who are above me ... so I don't really have any role models. (LGBT+, staff)



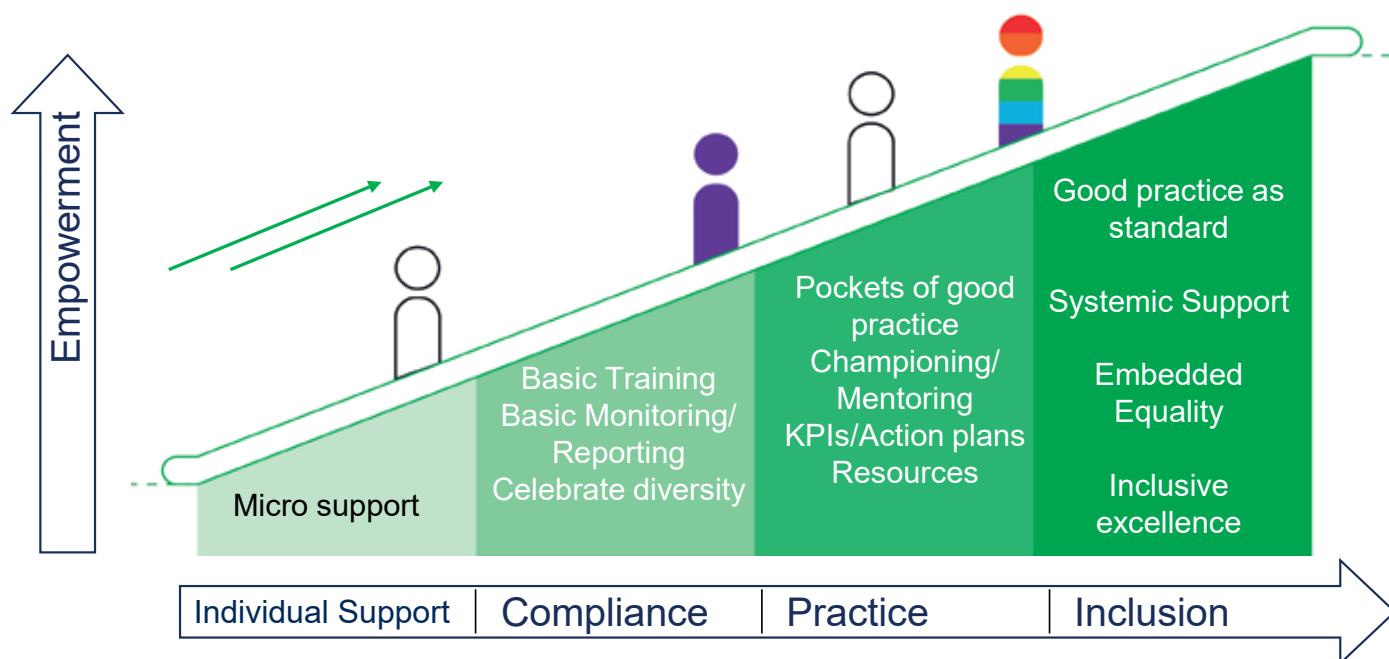
[In conversation with potential PhD supervisors,] they reaffirmed without me even having to ask. ... Just changing slight language, like using 'partner' instead of 'girlfriend or boyfriend'. ... I think that makes a huge difference. (LGBT+, PhD)

You can see the difference it has made for us having a good mentor compared to other staff in the same department who ... started the same but ... they haven't progressed to the same degree. (woman, staff)

The Slippery Slope to Discrimination



The Path to Inclusion



Visuals for the Slippery Slope to Discrimination and the Path to Inclusion based on STEM Equals phase one research findings and framed by existing literature (Caprariello, et al., 2009; Dean & Platt, 2016; Spreitzer, 2008; Tobogo, 2018).

To Cite: STEM Equals. (2020). *The STEM Equals Project: First Year Report*. Glasgow: University of Strathclyde. Retrieved from: <https://www.stemequals.ac.uk/Publications-Resources/Reports>

Initiatives

In addition to research, the STEM Equals project delivered initiatives to remove barriers to inclusion and promote the creation of more inclusive STEM communities.

Expanding the WISE Committee

The existing Women in Engineering Committee was expanded to form a **cross-faculty Women in Science and Engineering Committee (WISE)**. Committee membership comprises one representative from each Department across both Faculties. The WISE Committee also allows staff to readily raise gender-related issues and suggestions for future initiatives at a committee level. Prof Becky Lunn and Dr Jessica Gagnon serve as WISE Committee members and represent STEM Equals.

STEM Equals Funding Calls

The project invited applications for pump-priming funding for collaborative projects led by women at Strathclyde and within the remit of EPSRC's research areas. Through the STEM Equals funding call, we aim to increase the number of women PIs, encourage interdisciplinary research collaborations, promote research leadership and pump-prime more substantial research applications led by women to EPSRC, and develop support networks for women at Strathclyde.

By adapting to the restrictions imposed by the COVID-19 pandemic, on 2nd April 2020 the STEM Equals team hosted a virtual networking event and workshop where 25 participants had the chance to introduce their research and seek potential

collaborators. The call attracted strong interest and 16 applications were submitted. Among them, the judging panel selected **10 projects for a total value of £50,000**. All PIs and research team members have agreed to participate in future evaluative research for STEM Equals to provide evidence of the impact of this pump-priming initiative.

STEM Equals was also awarded **£10,000 of internal funding** in support of a workshop and a funding call around innovative solutions and the contribution of diverse research teams for addressing climate change (see page 16 for more information).

Strathclyde LGBT+ Staff and PhD Students Network

In alignment with the University of Strathclyde's commitment to EDI, the STEM Equals team is working with the Equality and Diversity team to facilitate the creation of an LGBT+ staff and PhD student network. We have met with leadership committees of LGBT+ networks at other universities in the UK to discuss the support mechanisms provided to them by their institutions, and we believe the network will provide an opportunity to **build a more diverse and inclusive academic community for a marginalised and underrepresented community at Strathclyde**. STEM Equals researcher Dr Marco Reggiani designed a small batch of rainbow lanyards for the members of the network that held its first virtual get together on 29 July 2020.



SARA VELASQUEZ

University of Strathclyde Pure and Applied Chemistry

Never allow anyone to discourage you from achieving your dreams. If you feel STEM is for you, stay in STEM. If something is not going right, change the situation but not your career because there are a lot of female scientists in the world fighting for more equality and better working environments.

Sara Velasquez is a PhD student in the Department of Pure and Applied Chemistry at the University of Strathclyde.



GARETH GILL

University of Strathclyde Electronic and Electrical Engineering

A supportive, inclusive STEM community would appreciate difference - I'd like to see role models and points of support. I'd like to see more awareness of autism spectrum disorders throughout the STEM community too, as science and technology tends to attract a lot of us!

Gareth Gill is a PhD student in the Department of Electronic and Electrical Engineering at the University of Strathclyde.



ZAHRA RATTRAY

University of Strathclyde Pharmacy and Biomedical Sciences

Science is not too difficult and it's not meant only for a specific group of people. If you are curious about how everything around you works, you can be a scientist too! Science is for everyone!

Dr Zahra Rattray is a Chancellor's Research Fellow and Lecturer in Translational Pharmaceutics in the Strathclyde Institute of Pharmacy and Biomedical Sciences.

STEM Equals Profiles

Together with the first issue of *Re/Act* (see page 18), in April 2020 we launched STEM Equals Profiles.

Each profiled researcher has answered ten questions about them, about their research, and about their path into STEM.

The purpose of STEM Equals Profiles is to increase visibility of women and LGBT+ researchers and promote diverse role models.

Please encourage the women and LGBT+ STEM researchers you know to email us stemequals@strath.ac.uk to be featured in a profile.



AGUSTI EGEEA

University of Strathclyde Electronic and Electrical Engineering

There are many stereotypes that need to be broken and people should be able to be themselves in the workplace. We should find new ways to move from just accepting diversity towards full inclusion in our everyday work. It's very important to educate ourselves and be aware of what issues underrepresented groups face.

Dr Agustí Egea is a Chancellor's Fellow and Lecturer in the Department of Electronic and Electrical Engineering at the University of Strathclyde.

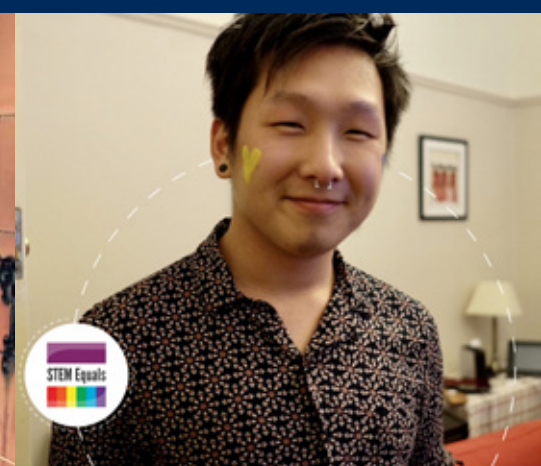


ROSHINE AKRAM

University of Strathclyde Pharmacy and Biomedical Sciences

I am excited to take part in cancer research, tackling one piece of the puzzle at a time. Being a young British Pakistani woman, I fully advocate for equal chances in science and promoting women in science. Research is something I've truly grown to be passionate about.

Roshine Akram is a PhD student at the Strathclyde Institute of Pharmacy and Biomedical Sciences.



JACK YANG

University of Strathclyde Physics

Get ready for a rollercoaster; make sure you really like the subjects in STEM and have an open-mind, ready to challenge and understand why things are the way they are. Do not be afraid to QUESTION EVERYTHING.

Jack Yang is a PhD student in the Department of Physics at the University of Strathclyde.



STEM Equals: Creating more inclusive STEM communities

led by Becky Lunn, Dr Marco Reggiani, Dr Jessica Gagnon
University of Strathclyde, Department of Civil and Environmental Engineering

INTRODUCTION
STEM Equals is a four-year research and impact project focused on women and LGBT+ individuals in STEM disciplines in both academia and industry. The project aims to: encourage a broader equality and diversity agenda; undertake research to understand specific challenges; develop new initiatives; develop a joint equality learning experience with key industry-university research partners; reach out to other universities and strategic industry partners to share best practices. The project is funded by EPSRC under the Inclusion Matters initiative, with matched funding from the University of Strathclyde. The project industry partner is BAM Nuttall.

EPSRC
bam nuttall
University of Strathclyde Glasgow

INCLUSION MATTERS

WOMEN IN STEM

- A persistent pattern of discrimination and exclusion
- Women engineers receive fewer citations (Murphy, 2017)
- Women in STEM workforce in the UK (WISE, 2016)
- 25%
- More applicants are rated as more competent (Glassdoor, 2016)
- 90%
- EPSC grants awarded to projects led by men (Wise and Stan, 2016)
- The lived experiences of students reveal stereotypes, less visible campus cultures, unsafe identities, and a waning sense of belonging that are still barriers for successful degree completion and career entry (Blackburn, 2017, p. 250).

RESEARCH
The project is a mixed methods study covering gender and LGBT+ issues through an intersectional lens. Objectives include:

- Identify specific challenges/issues women and LGBT+ staff and PhD students in STEM face. Best practices around fair/equitable hiring/promotion processes in STEM. Best practices around support for and inclusion of women and LGBT+ staff and PhD students in STEM. Best practices around fair/equitable working policies and practices that impact women

ACTIONS AND INITIATIVES
The STEM Equals project aims to have an impact on diversity, equality, and inclusion in STEM communities within the university and beyond through initiatives including:

- Expand upon good practices in support of women in the Engineering Faculty to the Science Faculty (WISE Committee)
- Develop tailored private networks, social media platforms and newsletters for women and LGBT+ staff

LGBT+ IN STEM

- Discrimination, exclusion and a concerning lack of initiatives.
- 28% of LGBT staff and PhD students considered less visible in the workplace because of discrimination



Photo by Jack Yang



Dissemination

During the first years of the project, the STEM Equals team actively sought opportunities to present the project's aims, research, initiatives, and activities both within Strathclyde and beyond.

Talks and Conference Presentations

To date, we have delivered **18 invited talks, conference and poster presentations.**

Highlights include:

- Reggiani, M., Gagnon, J., & Lunn, R. (2019, September). *STEM Equals: Creating more inclusive STEM communities*. [Poster presentation]. Vitae Researcher Development International Conference, Birmingham, UK.
- Gagnon, J., & Reggiani, M. (2019, November). *EPSRC Inclusion Matters – The Scottish Projects*. [Conference presentation]. SRPe Annual Conference 2019, Glasgow, UK.
- Gagnon, J., & Reggiani, M. (2019, November). *STEM Equals: Creating more inclusive STEM communities*. [Conference presentation]. STEMM-CHANGE Annual Conference, London, UK.
- Reggiani, M., Gagnon, J., & Lunn, R. (2020, January). *STEM Equals: Creating more inclusive STEM communities*. [Poster presentation]. LGBTQ+ STEMinar 2020, Birmingham, UK.

Several accepted presentations have been cancelled or rescheduled due to the current COVID-19 pandemic including:

- Gagnon, J., & Reggiani, M. (rescheduled March 2021). *STEM Equals: Creating more inclusive STEM communities*. [Accepted for presentation]. Advance HE Equality, Diversity and Inclusion Conference, Edinburgh, UK.
- Gagnon, J., & Reggiani, M. *STEM Equals: Creating more inclusive STEM communities*. [Accepted for presentation]. Gender and Education Association Conference 2020, Calgary, Canada
- Gagnon, J., & Reggiani, M. (rescheduled July 2021). *STEM Equals: Creating more inclusive STEM communities*. [Accepted for presentation]. Network Gender & STEM 2020 Conference, Sydney, Australia
- Reggiani, M., & Gagnon, J. *Opening the Laboratory Doors: Spatial Inequalities for Women and LGBT+ People in STEM* [Accepted for presentation]. Understanding Inequalities Conference 2020, Edinburgh, UK.

Publications

In October 2019, the STEM Equals team published a short article in the Glasgow-based science magazine theGIST (The Glasgow Insight into Science and Technology, Issue 11, Autumn 2019). Titled ***The STEM Equals project asks: "What does it mean to be seen?"***, the article introduces the STEM Equals project and explores the role of visibility in creating more inclusive STEM communities. The article can be consulted online at the following [link](#).

Currently, we are working on a number of articles based on findings from the first phase of data collection.

Events

STEM Equals Launch Event

On 28th October, 2019, STEM Equals officially launched with a celebration attended by over 100 people and featuring six stellar guest speakers who discussed working cultures and diversity in STEM, and the work that needs to be done to create more inclusive STEM communities within academia and industry. **Professor Scott MacGregor**, Vice Principal, University of Strathclyde, provided the welcome for the event and **Laura Watkin** of UKRI offered an introduction to the EPSRC Inclusion Matters initiatives. The speakers included:

- **Professor Becky Lunn**, MBE, Head of the Centre for Ground Engineering and Energy Geosciences, University of Strathclyde
- **Professor Ijeoma F. Uchegbu**, Pro-Vice Provost, Africa and The Middle East, Chair in Pharmaceutical Nanoscience, UCL
- **Dr Ben Britton**, Senior Lecturer, Deputy Director, Centre for Nuclear Engineering, Lead, Experimental Micromechanics Group, Imperial College London
- **Dr Brynley Pearlstone**, Physicist and founder and host of SciCurious podcast
- **Alasdair E Henderson**, Global Director HR Business Partnering, BAM Nuttall
- **Zoë Davidson**, PhD student, Physics, and founder of Equality, Diversity, Equity & Inclusion in Physics, University of Strathclyde

Highlights from attendee comments within the event evaluation include:

"We are measured and scrutinised as academics from all directions (NSS, REF, Student Evaluation) but not on Equality and Diversity."

"There are lots of us actively working towards inclusion and we can be a strong voice if we co-ordinate."

"Great occasion to meet and network with people, to share experiences and identify problems, inequalities faced by women and LGBT staff and to discuss possible interventions to make things better."

Mark your calendars

Future events we are planning include:

- The event "**LGBT+ in higher education: Building networks, making change**" rescheduled from 25th March to 21st October 2020 as a result of the pandemic. The afternoon event will include a keynote by Dr Izzy Jayasinghe, a panel discussion focused on LGBT+ people in higher education, and the official launch of the LGBT+ Staff and PhD Students Network at Strathclyde (see page 8). Free event; [Registration Required](#).
- An 18th November **LGBT+ STEM Day** event focused on the contributions LGBT+ STEM researchers make in addressing climate change challenges
- An **international conference** focused on Creating more inclusive STEM communities (2nd-4th June 2021).



"If you actually want to have the best outputs for your organisation, gender and ethnic diversity at all levels of decision-making will actually give you that." (Professor Ijeoma Uchegbu)

"How can we create more inclusive environments in STEM? ... I think so often we misplace our efforts and think that it's all about diversity ticking boxes, but you can make a team as diverse as you want and if it's not inclusive and you're not giving those people a voice and making them feel welcomed, it can be really damaging." (Zoë Davidson)

"We must consider ... the impact of members who are members of more than one underrepresented group. This is the broad concept of intersectionality. ... It is really important in this space." (Dr Ben Britton)



Collaborations and Networking

At Strathclyde

Within the University, the STEM Equals team serves on a number of committees relevant to the project, including the Equality, Diversity, and Inclusion committee (Professor Becky Lunn); the WISE committee (Professor Becky Lunn and Dr Jessica Gagnon); the LGBT Charter Mark committee (Dr Marco Reggiani); and the Gender Equality Steering Group (Dr Jessica Gagnon).

STEM Equals cosponsored events organised by the EDEI (Equality, Diversity, Equity, and Inclusion) in Physics group, including participating as a panellist (Dr Marco Reggiani) and moderator (Dr Jessica Gagnon) for the *Resilience and Wellbeing in Academia* event. STEM Equals was invited also to celebrate the *International Pronouns Day* on 16 October 2019, and supported events organised by the PhD student group Women in Engineering, including serving as a speaker (Dr Jessica Gagnon) for the event focused on Mental Health in Academia.

In Scotland

Within Glasgow, STEM Equals participated in the **Glasgow Science Centre's Curiosity Live** events in November 2019. Thousands of pupils attended. At the table hosted by STEM Equals, pupils could engage in activities to promote diversity and inclusion in STEM including **#DrawAScientist and #ScienceSelfie**.

The STEM Equals team also facilitated an hour-long training workshop with the staff at the Glasgow Science Centre called

Pronouns Matter. Feedback indicated high levels of satisfaction and that the workshop was one of the best training sessions received by the staff.

Dr Marco Reggiani and Dr Jessica Gagnon were invited to speak on the Equity, Advocacy, and Justice panel for the STEM Village virtual symposium on 28th August 2020, focused on improving visibility for the LGBTQIA+ STEM community. The event featured opening remarks by Scottish First Minister Nicola Sturgeon.

Across the UK

Nationally, the STEM Equals team have connected with a number of researchers, professionals, and leaders focused on diversity and inclusion in STEM, including **building relationships with** a number of the **other Inclusion Matters teams**. As examples, we spent a full day meeting with leaders at Imperial College London to learn about the work they have been doing to address systemic inequalities in STEM. We spent multiple days meeting with leaders at Durham University similarly discussing their programmes and initiatives focused on creating more inclusive STEM communities.

Global connections

Globally, we have built upon existing connections in Australia to share findings from STEM Equals and learn about their programmes and initiatives focused on addressing systemic inequalities (see page 16 for additional information).



#DrawAScientist

Science Centre visitors were encouraged to get creative by drawing and naming a scientist, opening up conversations about who can be a scientist and what scientists do.

#ScienceSelfie

The STEM Equals team provided science props, lab coats, safety goggles, and a photo frame and visitors were welcomed to pose in front of a wall display of diverse scientists.



Additional Funding

Over the course of the first year of STEM Equals, the research team has secured just **over £33,000 of additional funding** in support of initiatives related to the goals of the project of creating more inclusive STEM communities.

RKES Global Engagement Fund

STEM Equals was awarded **£3,000 of internal funding** from the University of Strathclyde's Research & Knowledge Exchange Services (RKES) from the Global Engagement Fund **to partially support the development of new and existing partnerships and networks in Australia** for the project and for the benefit of the wider University community. Collaborating with universities and industry in Australia on advancing diversity, inclusion, and innovation in STEM is especially aligned with the Australian government's commitment to increasing gender equity in STEM. The funding will enable the STEM Equals research team to strengthen existing relationships; make new connections/build new relationships; Develop plans for future collaborations/engagements; Disseminate findings from STEM Equals globally. Although the initial plans were to travel to Australia in July 2020, the pandemic has meant the trip has been postponed until 2021.



Together for a better world: Innovation to address climate change starts with more inclusive STEM communities

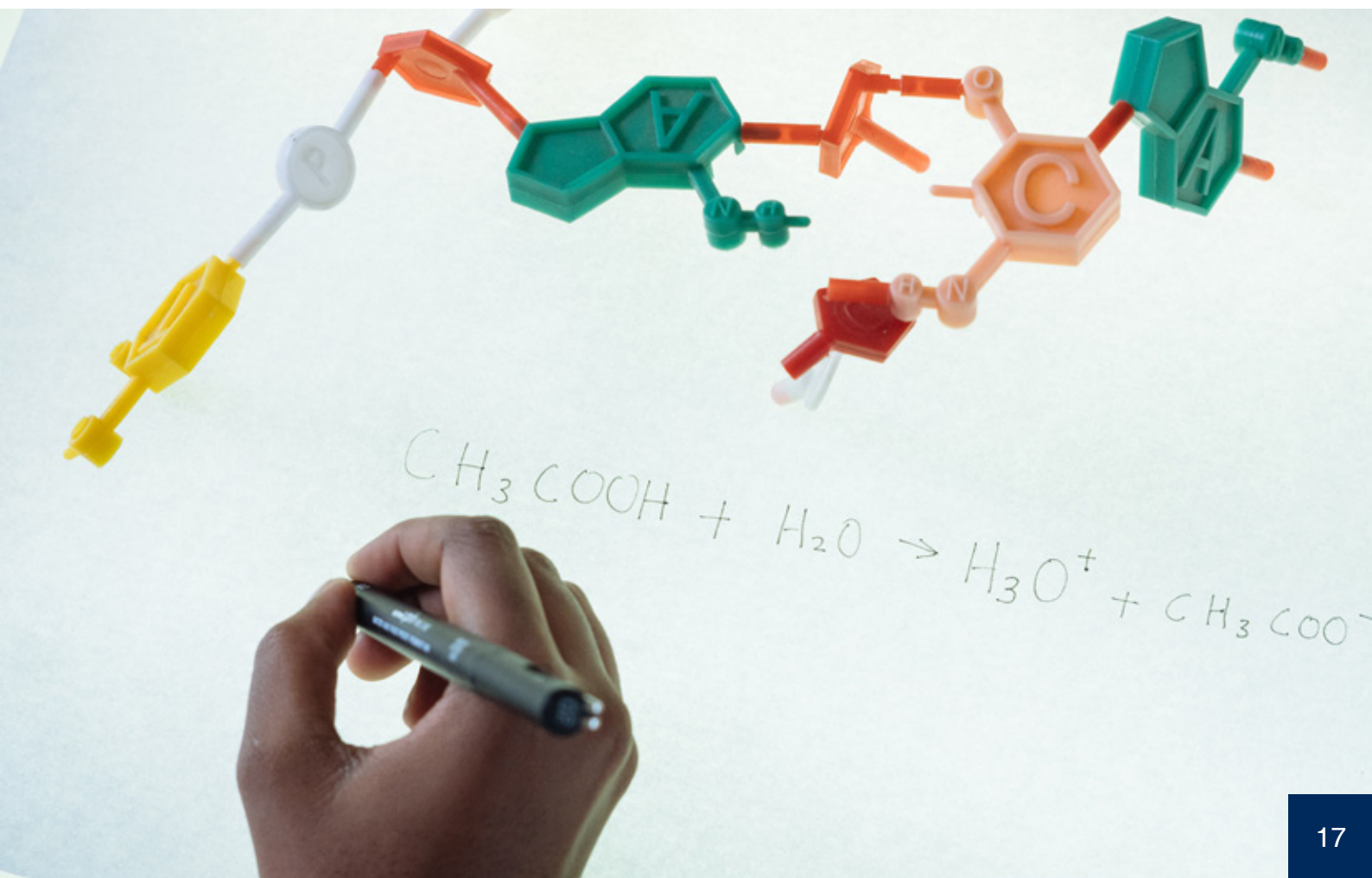
STEM Equals was awarded **£10,000 of internal funding** from the University of Strathclyde's Research & Knowledge Exchange Services (RKES) **from the EPSRC funded Impact Acceleration Account (IAA)** in support of a workshop titled: *Together for a better world: Innovation to address climate change starts with more inclusive STEM communities*. STEM Equals facilitated the workshop virtually over Zoom on 8th July 2020. Out of the workshop, academic staff, especially underrepresented staff, are encouraged to apply for funding for up to £10,000 for a project focused on innovative solutions for addressing climate change.

The workshop aims and objectives are:

- Increase the number of PIs from diverse/underrepresented groups
- Encourage research collaborations between interdisciplinary teams across the University (each team would be required to have at least one social scientist and at least one engineer or scientist)
- Foster diverse and inclusive research teams in order to enhance innovation
- Promote research leadership and pump-prime more substantial external research applications

See Yourself in STEM

STEM Equals was awarded funding as a **partner with Glasgow Life/Glasgow Libraries** for a project titled *See Yourself in STEM*. The funding is awarded to Glasgow Life by the Scottish Library and Information Council (SLiC) as the grant holders with the total value of the grant at just over £20,000. Although the project start has been delayed by the pandemic, a new timeline has been arranged with Glasgow Life and the funders to deliver the project to four classes of S1 students (ages 11-13) at four secondary schools in Glasgow during the 2020-2021 academic year. The purpose of the project is to enable students, particularly those from groups underrepresented in STEM, to engage with science and technology around climate change through research and hands-on science activities to inspire them to consider a STEM career path.



STEM Equals Online

STEM Equals established a strong presence online in order to build impact, connect with people and organisation in the sector, and disseminate results from the project.

STEM Equals on Social Media

STEM Equals launched the [project Twitter account](#) in on 18 June 2019. In one year's time, the project reached over **1,500 followers, tweeted over 1,000 times** (with an average of 83 tweets per month), and reached **over 397,000 impressions** (times the project tweets have been seen by other Twitter users). The project also has a growing presence on Facebook and Instagram and all social media accounts for the project use the same @STEMEquals name for easier recognition.

The STEM Equals Website

The project published a website in October 2019 in advance of the official launch event. Working with JISC, we secured the URL stemequals.ac.uk, which reflects the fact that, while the project is led by the University of Strathclyde, it has implications for both wider academia and industry in its focus on creating more inclusive STEM communities.

As we work towards building impact at the local, national, and global levels, the website serves as a space to share the latest news, events, and publications.

Re/Act: Updates from the STEM Equals project

The project published the first digital newsletter with updates from the project in April 2020, enabling us to connect with the growing list of university, industry, non-profit and community leaders; STEM and/or inclusion focused organisations; academics; researchers; students; and more who are part of the STEM Equals network after either signing up to receive our newsletter by email or by connecting with us through social media.

Read previous Re/Act issues:

[Re/Act #1](#) (April 2020)

[Re/Act #2](#) (June 2020)

#academia #advertising #alevelresults2019 #apollo11 #beautifullybisexual #biinsci #blackhistorymonth #blackintheivory #buildingequality #comingoutday #curiositylive #diversity #diversityinstem #diversityinstem... #engineering #engineerscensus #en... #epsrc #february11th #followfriday #glasgow #globalscienceshow #highereducation #highereducation #iamaphysicist #idahobit #idahobit2020 #inclusioninstem #inclusionmatters #inequalities... #internationaldayofwomenandgirlsinscience #inwed #inwed19 #inwed20 #lesbian #lgbt #lgbti #lgbtinstem #lgbtstem #lgbtq #lgbtqia #lgbtqstem #lgbtqstemday #lgbtstem #lgbtstemday #lgbtsteminar20 #lgbtsteminar20 #lgbtstemi... #lgbtst... #lgbt... #mentalhealth #onthisday #otd #o... #playingthesexycard #pride #prideinstem #pridemonth #pronounsday #protectdisabledblackwomxn #queerinstem #raengawards #recruitment #research #scicomm #science #scienceisforeveryone #shapetheworld #shutdownstem #snpride #space #srpe19 #stem #stemchangeconference #stemequals #stemmchangeconference #stemmch... #stemvillage #stemvillage20 #stonewall50 #strathclyde #strathlife #strike4blacklives #svvs20 #s... #thisisengineering #transdayofvisibility #transedu #transinstem #transinstem... #vitae19 #womeninengineering #womeninmedicine #womeninscience #womeninscienceday #womeninstem #womeninstem... #womenintech #w... #...



STEM Equals Project @STEMEquals · Nov 15, 2019

#STEMEquals team are visiting @imperialcollege today meeting w @Stephen_Curry_Caz @Imperial600 Kani @Imperial_EDIC & Rob Imperial @Athena_SWAN we brought copies of @GlasgowGist & picked up a copy of Disrupt @iCenteriseLab featuring @wendytanwhite & @jesswade thank you @EMatB

3 9 19

EDI Centre @ Imperial @Imperial_EDIC · Nov 15, 2019

It was lovely meeting you Jess and Marco! Let's keep in touch! - Rob & Kani.

STEM Equals Project @STEMEquals · Nov 15, 2019

It was wonderful to meet you both! We've had such a great day at Imperial. We look forward to keeping in touch :-)

Agusti Egca @agustiegea

I am happy to present my profile in the @STEMEquals project. As gay Lecturer, I believe that it is important to keep pushing D&I at universities. Training university staff in D&I is an area that we should work on @EEEStrathclyde @UniStrathclyde 🇺🇪🇬🇧⚡

stemequals.ac.uk/Initiatives-Re...

12:29 PM - Jun 23, 2020 · Twitter for Android

9 Retweets and comments 40 Likes

STEM Equals Project @STEMEquals · Nov 4, 2019

The #STEMEquals team @jess.gagnon & @marcoreggiani_ along with Carla of @vsNET presented posters at @Scotherd today representing @EPSRC #InclusionMatters #DiversityInSTEM #WomenInSTEM #LGBTInSTEM

Katherine Kirk @KatherineKirk · Nov 13, 2019

Dr Jess Gagnon and Dr Marco Reggiani showcase the Scottish-based EPSRC Inclusion Matters projects including @STEMEquals @vsNET @PWR19

Zed Davidson @zeddavidson

The @STEMEquals Launch last night!

Thank you @Jess_Gagnon & @marcoreggiani_ for inviting me to be a part of this

my heart is full from being around so many inspiring & uplifting people

A great evening with friends, old & new. Hope to see you all again soon!

1:55 PM - Oct 28, 2019 · Twitter Web App

Engineering and Physical Sciences Research Cou... · Oct 28, 2019

Laura and Ciara from our EDI and People team are attending the @STEMEquals event today in Glasgow

#STEMEquals #WomenInSTEM #LGBTInSTEM #EPSRCInclusionmatters

STEM Equals Project @STEMEquals · Oct 28, 2019

Today is the day! 28th Oct #STEMEquals launch stemequalslaunch.eventbrite.co.uk speakers: Prof Becky Lunn Prof Ijeoma Uchegbu @AEHendersonBAM @zoe_two_dots. @BPearlstone @EMatB @EPSRC #InclusionMatters #WomenInSTEM ...

STEM Equals Project @STEMEquals · Feb 11

Report on @nyscf #WomenInSTEM Initiative suggests efforts to promote women into senior roles are inadequate. Institutions haven't put in place policies that support the development of women's careers in #STEM werepstem.com/2019/09/09/4-y... #WomenScienceDay #WomenInScience

4-year study shows institutions can recruit women into STEM b...
File photo courtesy: Pixabay. A four-year analysis of 541 institu...
"report cards" conducted by researchers at the New York Stem...
wepstem.com

20 27

STEM Equals Project @STEMEquals

Celebrating #PronounsDay #StrathLife

Dr Jessica Gagnon and Marco Reggiani

12:27 PM - Oct 16, 2019 from Glasgow, Scotland · Twitter for iPhone

9 Retweets and comments 16 Likes

STEM Equals Project @STEMEquals · Oct 1, 2019

What does it mean to be seen? in @GlasgowGist #SciencesForEveryone issue in which we discuss the impact of visibility like @jwandeepkohl's viral tweet & ask: How can we build a more inclusive STEM community? the-gist.org/2019/09/09/the-st... #WomenInSTEM #LGBTInSTEM #DiversityInSTEM

Jiwandeep Kohli @jwandeepkohl · Jun 1, 2019

I'm proud to be a bisexual bearded baking brain scientist. I feel fortunate to be able to express all these aspects of my identity, and will continue to work toward ensuring the same freedom for others. #PrideMonth #PrideTurban #LoveIsLove

Show this thread

11 18

Inclusion Matters!

STEM Equals: Creating more inclusive STEM communities

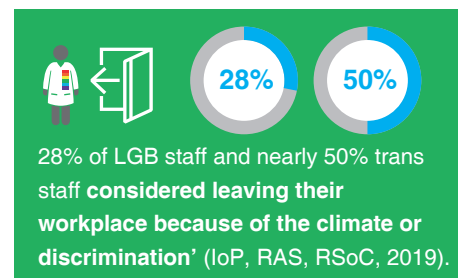
WOMEN IN STEM



Women engineers receive fewer citations (Murphy, 2017)



LGBT+ IN STEM



Male applicants are rated as more competent (Moss-Racusin et al., 2012).



EPSRC grants awarded gone to projects led by men (Weale and Barr, 2018).

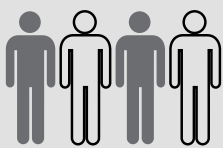
LGBT faculty, staff, and students are more likely to have negative perceptions of their campus climate, and are more likely to consider leaving their institution (Rankin et al., 2010).

LGBT students in STEM are less likely to persist (Hughes, 2018).

'the lived experiences of students reveal **stereotypes, biases, chilly campus cultures, unsteady identities, and a wavering sense of belonging** that are still barriers for successful degree completion and career entry' (Blackburn, 2017, p. 250).

Staff 'working in STEM fields with better representation of women reported a higher degree of [LGBTQA] openness' and 'those who reported a higher degree of openness in the workplace were more likely to describe their workplace as safe and welcoming' (Yoder and Mattheis, 2015, p. 21).

UNDERSTANDING DIVERSE NEEDS



HETERONORMATIVE HEGEMONY

Discrimination
Insecurity
Isolation
Anxiety



CELEBRATING INTERSECTIONALITY

Inclusion
Belonging
Community
Wellbeing

PROMOTE INSTITUTIONAL CHANGE



Conclusions

This report provides an insight into the research and the activities undertaken during the first year of the STEM Equals project. While examining the experience of women and LGBT+ individuals in STEM through an intersectional lens, we collected evidence that adds to the understanding of the challenges, hostile working culture, bias, and systemic inequalities faced by underrepresented groups in STEM disciplines. At the same time, we started to deliver evidenced-based initiatives to remove barriers to inclusion and engage with the community to widen access to STEM.

Adapting to the Pandemic

The coronavirus pandemic has changed the way we work. Since mid-March 2020, the STEM Equals team started working remotely while adapting to this difficult time. To comply with the government guidelines and with everybody's safety in mind, we responded to the crisis by redesigning or postponing events we had planned for Spring 2020. While this required extra effort and disrupted the delivery of several initiatives, it also prompted the STEM Equals team to **creatively find new ways to stay relevant, advocate for equality and inclusion, and deliver the expected outcomes from the project.**

Initiatives delayed by the pandemic include: the launch of the Strathclyde LGBT+ Staff and PhD Students Network, the project See Yourself in STEM, global engagement initiatives in Australia, STEM Equals mentoring scheme, LGBT+ Ally training scheme, and a number of other events, conferences, and presentations.

Planning for the year ahead

Despite uncertainties and the challenges posed by the continuing pandemic, we have exciting plans as we enter in the second year of the project. They include:

- A **wide survey** with staff and PhD students at Strathclyde to investigate working culture along with EDI issues emerging from phase one of the study.
- A line-up of **exciting events** including LGBT+ in higher education: Building networks, making change (new date 21 October 2020); LGBT+ STEM Day 2020 (18th November 2020); an international conference, and more (see page 12 for additional information).
- The project **See Yourself in STEM** in collaboration with Glasgow Life/Glasgow Libraries (see page 17))
- Plans for a **mentoring scheme** for the University's Senior Executive team and other senior management at Strathclyde to increase awareness around diversity, inclusion, and systemic challenges faced by underrepresented groups.
- Work to **develop existing partnerships and establish new connections** both within the UK and internationally.

By undertaking research and implementing these interventions, we will continue to support marginalised and underrepresented communities at Strathclyde, increase awareness around equality and diversity in academia, and contribute to building more inclusive STEM communities.

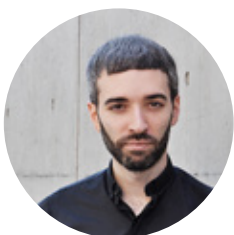
Meet the Team



Professor Becky Lunn, MBE, (she/her) is a Royal Academy of Engineering Research Chair and Head of the Centre for Ground Engineering and Energy Geosciences in the Department of Civil & Environmental Engineering at the University of Strathclyde. She is currently a member of EPSRC's Science Advisory Team for Engineering and has led more than £6M of research projects. In 2011, she was awarded the Geological Society's Aberconway Medal. Becky has a significant track record of supporting women in engineering and, in 2015, the Saltire Society named her one-of-ten 'Outstanding Women of Scotland'.



Dr Jessica Gagnon (she/her) is an educational sociologist focused on inequalities. She has worked in universities in the US and UK for 20 years. Dr Gagnon completed her PhD in Education and her MSc in Social Research Methods at the University of Sussex. She completed her MA in Higher Education at Santa Clara University. She completed her BA at Framingham State University. Dr Gagnon was a first-generation student from an American working-class, single mother family.



Dr Marco Reggiani (he/him) has been researching urban development, place identity, mobilities, and public life – particularly in the context of Japan, where he completed a PhD in Architecture at the University of Tokyo. In addition to his research, he has taught and tutored at the postgraduate level and has two years of experience as an architect. He is also the author of *Giappomania*, an illustrated book about Japanese culture and lifestyle translated in five languages.

Advisory Board

Professor Scott MacGregor (he/him) is Vice-Principal of the University of Strathclyde (UoS) and chairs the Staff and Equality & Diversity Strategy Committees.

Annie McLaughlin (she/her) is responsible for the development and implementation of the University's Equality and Diversity strategy, priorities and plans, including the delivery of its Equality Outcomes.

Professor Susan Pyne (she/her) is Professor of Molecular Signalling, Strathclyde Institute of Pharmacy and Biomedical Sciences (SIPBS).

Dr Joanna Renshaw (she/her) is a Senior Lecturer in Environmental Radiochemistry and Geomicrobiology, in the department of Civil and Environmental Engineering, UoS.

Professor Ian Rivers (he/him) is Executive Dean of the Faculty of Humanities and Social Sciences and Associate Principal at the University of Strathclyde.

Professor Zoe Shipton (she/her) is Professor of Geological Engineering in the department of Civil and Environmental Engineering and works on geological controls on fluid flow and quantifying geological uncertainty.

Acknowledgments

The STEM Equals team are grateful for the academic staff and PhD students who participated in the first phase of our research as well as the continued support from: our funder, EPSRC; BAM Nuttall; our advisory board members; the administrative team the department of Civil and Environmental Engineering; and friends of the STEM Equals project within the University of Strathclyde, within Scotland and the wider UK, and across the globe.

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Appendix A

Categories have been drawn from HESA, Stonewall, census questions and other standardised sources that do not fully reflect the diversity of possible responses to each question. Participants were encouraged to self-describe where the available categories did not fit with their identities. A fuller reporting of participant demographics will be published in forthcoming reports and articles focused on findings from phase one of the research.

Sexual Identity

Bisexual: 7
 Gay Woman/ Lesbian: 4
 Gay Man: 10
 Heterosexual/ Straight: 56
 Prefer to self-describe: 4
 Prefer not to say/No response: 2
Self-description: Asexual; Hetero-bisexual; Queer; Het/Straightish

Ethnicity

Asian or Asian British - Indian: 1
 Asian or Asian British - Pakistani: 1
 Asian or Asian British - Chinese: 4
 Black or Black British - African: 1
 Other Black background: 1
 Mixed – Black African and White: 1
 Other Mixed background: 2
 White – British [English, Welsh, Scottish, Northern Irish]: 47
 Other White background: 24

The STEM Equals Project: First Year Report

This report has been written by
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Layout and editing by
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