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PERSPECTIVE

Conversations with LGBT+ scientists about visibility, leadership and climbing the career ladder

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ABSTRACT

February is LGBT+ history month, and to celebrate, Journal of Cell Science Editorial Advisory Board member David Bryant organised a conversation with a selection of scientists to explore their experiences of being LGBT+ in academia.

KEY WORDS: LGBT+, LGBTQ+, LGBT+ history month, Equality, diversity and inclusion, EDI

Introduction

D.B.: Part of being a scientist is communicating what we find, openly and honestly, with a rigour that should stand up to criticism and challenge. We train our mentees to strip themselves out of the conversation, including their personal biases, prejudices and cultural lenses to let the science speak for itself. We ask for external verification of what we have communicated. Being judged by our peers is part of building solid scientific foundations for new avenues of understanding of the natural world. The science, and not the scientist, should be what we pay attention to. The problem is that these meritocratic ideals are incongruous with a reality where bias, prejudice and inequalities based solely on protected characteristics such as (but certainly not limited to) sex, sexual orientation, race and disability plague society at large. Academia is not immune to, but rather can be reflective and perpetuating of, these inequalities.

As an LGBT+ scientist, I am acutely aware of trying to be judged on my science, not my 'personal life'. This is because I, like many LGBT+ scientists, can try to keep this aspect of my life, well, personal. The science should speak for itself. The problem in this approach is that I, as a tenured group leader, have the privilege to do so because I have already moved someway up the career ladder. I acknowledge my privilege to have been, and continue to be, in environments where that could happen. I know that this is not the case for all.

What happens, though, when one is at the start of their career and the majority of people they see on this ladder look, sound or behave nothing like them? Such unpalatable options could include not attempting to pursue a passion for science or to pack away the part of themselves that doesn't mirror who they see to try to fit in.

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I am greatly encouraged in the dramatic shift that is occurring in the cell biology field to celebrate and champion diversity. Such a move has sprung from the many, sometimes small, but powerful efforts of those that speak up about being different. Hearing the voices of diverse peoples, trembling out words and topics they would not normally share, is starting to put the person back into the science and scientist.

This perspective is personal. It engages with established and emerging leaders in the cell biology field whom are LGBT+ community members (for Biographies, see the respective Boxes). By answering a number of pertinent questions, they share with us their experience of how being LGBT+ has intersected with their careers, challenges and changing levels of acceptance, and how reaching behind to help others up the ladder is an important part of being a leader.

Questions

At what stage of your career did you come out?

R.B.: I came out relatively late at age 28 during graduate school and entered into a long-term relationship. It seemed a natural fit for me at that time and provided stability within my personal and professional life.

J.E.: As a postdoctoral fellow. It wasn't something I was expecting, but in retrospect, it was not a surprise. I was very lucky that my mentor, Don Ganem, was incredibly accepting and supportive. I was also incredibly lucky to be living in San Francisco and to be at UCSF – both places have been at the forefront of the LGBT+ universe.

M.K.: I first came out in college. However, in my experience, coming out is a continuous process – especially in science, where we constantly meet new people. When people notice my wedding band, they often ask about my wife, and I smile and tell them that I have a husband.

I.J.: I was a PhD student when I first came out as a transgender woman to two of my closest colleagues (also PhD students). Then it took me until my first faculty position to transition at work.

O.S.: I came out when I was a group leader. This was after I met my now husband, so it felt the right time for me.

What type of bias, if any, have you experienced during your career?

R.B.: I have been very fortunate to have trained in departments and institutions in Canada and abroad that were very inclusive. I have therefore felt supported during my career in both in my medical training and my training in basic and discovery science as it relates to tumor cell biology.

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Box 1. Rob Bristow

Dr Rob Bristow completed his MD (1992) and PhD (1996) at the University of Toronto, followed by research fellowships at Massachusetts General Hospital, MD Anderson Cancer, the MAYO clinic and Erasmus University Rotterdam. In 1999, he was appointed as Clinician-Scientist in Genito-Urinary Oncology at the Princess Margaret Cancer Centre and subsequently became Professor of Radiation Oncology and Medical Biophysics, University of Toronto. He joined University of Manchester, UK, as Director of the Manchester Cancer Research Centre (MCRC) in August 2017 with a remit to developing a new cancer strategy for Manchester with a cancer team science approach. The MCRC is a unique partnership between CRUK, the University of Manchester and the Christie NHS Trust. Working with scientific and clinical researchers, his aim is to develop personalized medicine approaches for cancer patients across the UK and worldwide.

His primary research interests are in tumour hypoxia, DNA damage signalling and repair in tumours, and the genomics of prostate cancer progression and cancer treatment response. He is particularly interested in novel clinical trials that intensify cancer therapy to prostate cancer patients whose tumours harbour aggressive genetic changes and hypoxic sub-regions.

He is currently a senior group leader in Translational Oncogenomics at the CRUK Manchester Institute and was the lead PI for the Canadian component of the ICGC whole genome prostate cancer sequencing project (CPC-GENE). He serves on a number of Scientific Advisory Boards and committees for: the MOVEMBER Foundation, the American Association for Cancer Research (AACR), Institut Curie, Institut Gustave Roussy, the Danish Proton Centre, and the American Society for Therapeutic Radiation Oncology (ASTRO). He also sits on the Scientific Advisory Board for Cancer Research UK (CRUK) as Chair of the Clinical Research Committee. He has over 300 published papers and book chapters. He is twice a Canadian Foundation for Innovation (CFI) awardee and was made a Canadian Cancer Society Research Scientist in 2004 and an ESTRO Honorary Fellow in 2011. He was admitted as Fellow of the Academy of Medical Sciences (UK) in 2019.

J.E.: I feel that I've experienced more bias, either overt or unconscious, as a woman in STEM than as an LGBT+-identified individual. As an undergraduate at Yale, I was the third freshman class that admitted women, and I was aware, more so in retrospect, of the small percentage of undergraduate women in STEM. Likewise, as an MD-PhD (Medical Scientist Training Program) student at Stanford, I was one of the first women to enter and complete this joint program. As I've advanced in my career, I've certainly been aware of being perceived as an 'aggressive' woman as opposed to an 'assertive' or 'passionate' individual. Indeed, there was a leadership position a few years ago to which I applied and for which I received this specific feedback.

I.J.: Biases that I have experienced are difficult to dissect, because my gender, name, skin colour and mixed accent all evoke various prejudices in others. At times, they have manifested in every-day incidents like being mistaken for catering staff at conference events where I was invited as a speaker. At a more structural level, I have been overlooked on job applications, rejected on grant applications without an explanation, and discouraged or stopped from applying for fellowship schemes aimed at women.

Box 2. David Bryant

Dave Bryant is a Reader/Associate Professor at the University of Glasgow Institute of Cancer Sciences and a group leader at the Cancer Research UK Beatson Institute in Glasgow. He initially studied music composition with composer Philip Bračanin and biological science at the University of Queensland, Australia. He was eventually swayed over to science by Jennifer Stow introducing him to her, and subsequently his, love of membrane trafficking in cell biology. He went on to get his PhD (Molecular Bioscience) on the role of endocytic trafficking in regulating cell adhesion with Jenny Stow at the Institute of Molecular Bioscience, Australia. He moved to the University of California, San Francisco (UCSF) in 2006 to work with Keith Mostov on the function of membrane trafficking in regulation of apical-basal polarisation of epithelia. It was at UCSF that out and proud faculty members, such as Joanne Engel, made him realise that reaching back down the academic ladder and clearing the way for those on their academic journey could be as fulfilling as the science itself.

With American husband now at his side, he moved to Scotland to start his own laboratory at the CRUK Beatson Institute and University of Glasgow in 2014, where his research interest is in the rules that cells follow to assemble into tissues and how these are disregarded in tumorigenesis. That he received an outstanding reception to his performance in drag as Bette Midler at the annual Beatson Institute Christmas party mere months after arriving cemented his belief that he had moved to the right institution. He is currently a UK Research and Innovation (UKRI) Future Leader Fellow. He is also chair of the Institute of Cancer Sciences Athena Swan and V.O.I.C.E. (Visibility, Opportunity, Inclusion, Career Development, and Equality) initiative, which aims to enact the processes in the initiative's namesake into everyday life in his workplace.

Dave (on the left) is shown with his partner Zach and dog Lucy.

O.S.: So, I have felt very lucky in my career to have been well supported. Therefore, I don't think I experienced bias, although I do feel that you have your own perceived biases about not fitting in. Ironically, I'd originally not applied for the PI position at the Beatson as I felt that institutes at that time wanted a type of person I

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Box 3. Joanne Engel

Dr Joanne Engel received her B.S. in Molecular Biophysics and Biochemistry from Yale in 1976, where she became enthralled with molecular biology after taking a course with Syd Altman. She took a 'gap' year to work at the NIH in the lab of Mike Cashel, and got a crash course in bacterial genetics and gene cloning. It was an incredibly exciting time on that floor – Phil Leder and his group (which included Shirley Tilghman, who went on to become the president of Princeton, John and Cricket Seidman, and Dean Hamer), cloned hemoglobin genes, and Heiner Westphal's lab had some of the first evidence for RNA splicing from R-loops seen by electron microscopy. She then decided to apply to MD-PhD programs (why not?) and completed an MD-PhD program at Stanford, where she studied the human actin gene family. Afterwards, she completed a residency in Internal Medicine at the University of Pennsylvania, followed by a clinical and postdoctoral fellowship in Infectious Disease at UCSF, returning to her first love, microbiology, and the nascent field of microbial pathogenesis. She joined the lab of Don Ganem, where she began her studies of *Chlamydia*, a wily obligate intracellular pathogen whose secrets she continues to study 35 years later!

She was appointed to the faculty at UCSF in 1990 and is currently a Professor in the Departments of Medicine and Microbiology/Immunology. She has served as the Chief of the Division of Infectious Disease since 2005 and is the founding and current co-director of the Microbial Pathogenesis and Host Defense Program (recently rebranded as the Integrative Microbiology Program) program at UCSF. She is passionate about mentoring and training young investigators and is active in several graduate and medical programs at UCSF.

Her lab focuses on the complex interplay between bacterial pathogens and their human hosts. Guided by the motto that the 'pathogen is the tutor', she enjoys being a life-long learner and applying new technology to understanding the pathogenesis of human infections. She is an elected member of the American Society for Clinical Investigation, the Association of American Physicians and of the American Academy of Microbiology. She and her spouse, together with two Dads, have co-parented a son, Daniel, who graduated from the University of Pennsylvania with a degree in Neurobiology and is now pursuing a career as a professional magician. In her spare time, she is an avid cyclist and skier, having had to retire from her other favourite sport, tennis.

Joanne (on the far right) is shown with her family at Christmas 2020.

was not. I did my postdoc in the UK outside of well-known institutes and the 'golden triangle' (Oxford, Cambridge, London). So, I think it is a good lesson that sometimes you put up your own bars. However, I think where there is more work to do, is in senior roles. From my own experience applying for the Director role at the Beatson, whilst it difficult to explicitly state I've experienced bias here, there were times I encountered intimations that I was not quite the personality they envisioned to undertake leadership. I think now more than ever it is important to challenge assumptions about who 'looks and talks' like someone in a leadership role, simply because of an expired historical precedent, not ability. Moreover, the interviews for this position were organised for the day before my wedding, and there was a lot of pressure on me to attend this day. Eventually, I did interview on a different day from the other candidates, and I got the job in the end! I do think things have improved; however, there are still very few open LGBT+ Directors in UK academia, and I hope this is something that will change in the near future.

Has being LGBT+ influenced any of your professional decisions?

R.B.: It influenced my medical specialty as I was considering a career in either surgery or oncology, and only the latter had visible LGBT+ role models. It also impacted the cities and work environments where I chose to train, as I wanted an inclusive 'vibe' in and out of the lab. This was an important element in choosing my post-graduate posts (Boston, Houston and Rotterdam), and also my current leadership position and move with my husband to Manchester, UK. It also influences my 'collaborators of choice'; I choose collaborators with whom I can be entirely open with when co-designing experiments and write grants or manuscripts, over that all-important beer.

J.E.: Indirectly. It has influenced where I've lived and what academic job opportunities I pursued, but these decisions were for geographical reasons. My spouse of 35 years, whom I met when I came out, took a faculty position at UCSF after she finished her residency training, so staying at UCSF was a high priority. Likewise, when we decided to start a family and co-parent with the two involved Dads, one of our 'parenting' agreements was that we would all stay in the Bay Area until our child was an adult.

M.K.: Yes, I have definitely factored into my decisions how LGBT+ friendly an organization or geographical area is.

I.J.: Yes, I have found that Higher Education, particularly in the UK, is generally protective and inclusive of LGBTQ+ staff and students. This is perhaps one of the reasons why I have remained in this career path. There are of course exceptions to that logic.

How does being LGBT+ interface with your career now?

R.B.: It is important to be a strong leader and drive successful initiatives at both the national and international level. As a Cancer Centre director, I try and coalesce ideas from scientists, patients and clinicians with an inclusive, team science approach. Diversity in these elements adds breadth and depth to our basic and translational research programming. It allows us to subsequently provide best care for our patients. Cancer itself does not discriminate; an important concept given the diversity of cancer patients in the UK.

J.E.: Most of my career currently focuses on the usual issues – directing research, doing the best science that I can do, being a good

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Box 4. Izzy Jayasinghe

Dr Izzy Jayasinghe is a Senior Lecturer in the University of Sheffield (UK) in the newly-formed School of Biosciences. Her research primarily focuses on the adaptation of various materials, optical technologies and *in situ* molecule counting tools to advance super-resolution microscopy. Through collaborations with other super-resolution experts, clinical researchers and computational biologists, she has worked on visualizing the organisation of the ryanodine receptors and the calcium handling machinery in the myocardium. In 2015, she became the first to optically resolve the ryanodine receptor, *in-situ*. Her current work focuses on putting these imaging technologies in the hands of clinical and field researchers.

She was awarded her PhD in the University of Auckland (New Zealand) before two postdoctoral posts in the University of Queensland (Australia) and University of Exeter (UK). Subsequently, she founded her research group (the Applied Biophotonics Group) in 2015 at the University of Leeds (UK) before joining the University of Sheffield in 2020. You can read more about her scientific career and research in the recent feature in The Scientist.

As a trans woman of colour, she uses her academic platform to educate and advocate for the inclusion of minoritized groups, such as ethnic minorities and LGBTQ+ people. She co-chairs an organisation called LGBTQ+ STEM, which convenes the longest-running conference in the UK to provide a platform to STEM professional who are LGBTQ+ to present and share about their research or professional work. She also advises funding bodies, scientific journals and professional societies on Equality, Diversity and Inclusion, as well as researcher development.

mentor, getting grants, writing papers, doing my best to make UCSF a welcoming and inclusive workplace, and serving in leadership roles (I'm the founder and current co-director of the UCSF Integrative Microbiology Program and the Chief of the UCSF Adult Infectious Disease division). I have an 'open door' policy at work; I am always happy to meet with trainees and faculty when they seek out advice or just want to talk, including on LGBT+ issues. When interviewing individuals for the myriad of programs, with which I interface (graduate school, medical school, Molecular Medicine residency, Infectious Disease Fellowship, and faculty recruitment), I am open about my LGBT+ identity with the goal of making individuals feel welcome and comfortable and for them not to feel the need to be closeted. I'm also very willing to share the story of our five-person family (four parents and one now young adult son). I continue to work on and try to learn how to recognize and deal with my own unconscious biases.

I.J.: I am very open about my identity as a queer trans woman of colour, and my day-to-day work is not affected by it. I have a large network of colleagues and collaborators who are inclusive of LGBT+ people, and many of them are LGBT+ themselves. In the various leadership and advocacy roles that I hold in the academic sphere, I have an opportunity to share my lived-experiences, personally and professionally, and influence positive change. So, I would say that my lived-experiences and decision to be my authentic self at work have been a positive force in my career as an academic.

O.S.: For me it brings an awareness of feeling that you don't fit in. Society has changed so much over the last 25 years (and even more in the last 50) for LGBT+ people. So now it's so important we push for much more inclusion for all groups through science. We have a long way to go, but I do think there is a real appetite for change coming through. Also, this feeling of a not fitting in pervades so many groups, and we do need to change this

What do you consider to be the most pressing issues for LGBT+ scientists?

R.B.: To make sure that opportunities for scientific success, leadership and governance are open to all those who want to be at the top of their scientific game.

I.J.: There are a few big issues. Firstly, finding inclusive workplaces that encourage us to bring our authentic selves to work is challenging. Advocating for more inclusion, withstanding microaggressions and finding true allies can be exhausting in the workplace. Secondly, building collaborations, broadening the international reach of universities and any field work that is required to generate your primary data all involve international travel. Most countries in the world still exercise anti-LGBT+ laws, which make travel an opportunity that is unavailable. LGBT+ scientists often also experience social exclusion, which means that collaboration opportunities are also limited. Finally, LGBT+ people in scientific workplaces still endure disproportionally higher levels of harassment, bullying and professional devaluation. These archetypal workplace cultures often place significant barriers against career progression or endurance for scientists like us.

J.E.: Visibility, representation, acceptance.

Why is visibility important?

R.B.: It provides strong role models. Hopefully this reduces the worry that there is a glass ceiling for scientific careers. LGBT+ early career investigators and trainees need to feel that they are not alone within their scientific environments. They can lead in committees and drive development of institutional or national scientific strategies.

J.E.: To help ensure that all individuals are treated fairly and to show learners that careers in science as out LGBT+ individuals are possible. Visibility also facilitates mentorship.

M.K.: I think visibility sends an important signal of support and belonging to the next generation of scientists who themselves are from a disadvantaged background – whether they are LGBT+, people of color, disabled – and it is an important way to reduce prejudice in others.

I.J.: In the words of a great friend, Hannah Simpson, "Because not hiding my past might help someone else to stop hiding from their future". Meeting other scientists who were out as trans was one of the most powerful catalysts for my decision to start living as my authentic self. I am so much happier for it – both personally and professionally. I know that this is true for so many colleagues with other LGBT+ identities who have come out. In addition to inspiring the courage to come out, visibility also helps dispel culturally entrenched beliefs, practices and hostility underpinned by homophobia and transphobia. There is immense strength and safety in knowing that you are not alone in a workplace.

O.S.: I think the more visibility, the more acceptance. We now run events that celebrate diversity at the Beatson and where we hear from LGBT+ scientists. These events always go down very well and are well attended. Understanding people's journeys and hearing their points of view removes misconceptions and allows people to better relate to one another.

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Box 5. Martin Kampmann

Dr Martin Kampmann is an Associate Professor at the UCSF Institute for Neurodegenerative Diseases and the Department of Biochemistry and Biophysics, and an Investigator at the Chan Zuckerberg Biohub. He received his BA in Biochemistry from Cambridge University and his PhD in Biophysics/Cell Biology from Rockefeller University. The goal of his research is to elucidate cellular mechanisms of brain disease and to develop new therapeutic strategies. He co-developed the CRISPRi and CRISPRa screening technologies, and his lab has pioneered CRISPR-based functional genomics in cell types derived from induced pluripotent stem cells (iPSCs). A major focus is the investigation of neurodegenerative diseases in human iPSC-derived neurons, astrocytes and microglia, and 3D assembloids/organoids.

He was named an NIH Director's New Innovator, an Allen Distinguished Investigator, a Chan Zuckerberg Biohub Investigator, and he received the CZI Ben Barres Early Career Acceleration Award.

What can you do to help bring other LGBT+ scientists up the career ladder?

R.B.: Essentially, it's to do my job well as a senior administrative lead and as a scientist. Equality, diversity and inclusion (EDI) are important elements of our research. It provides a lens to look at other non-LGBT+ groups who may have similar challenges in being accepted or experiencing blocked career opportunities. We can't pick and choose to champion one area for EDI and say we are not supportive of other areas, thereby actually limiting inclusion. Similar challenges, when discussed, may lead to similar solutions. So providing a clear message that my cancer centre is inclusive to all, hopefully can drives success for all.

J.E.: Freely and willingly sharing my experiences, encouraging other LGBT+ scientists to share their experiences, always being available to listen to LGBT+ scientists and to learn from their experiences, supporting them and encouraging them to advocate for themselves, and being aware and pro-active about micro- and macro-aggressions.

I.J.: Firstly, LGBT+-led mentoring of LGBT+ scientists can be a powerful support mechanism. I mentor a handful of LGBT+ scientists, and they find it useful to discuss various structural barriers that they face with someone who can relate to their experience. Secondly, events like the LGBTQ+ STEMinar, which provide a platform and networking opportunities, can be a positive force for queer scientists to forming new collaborations and connections. Giving a research talk at my first LGBTQ+ STEMinar in 2018 was the start of an upward curve in my scientific career, and I know many others in my community who have similar experiences.

How can senior LGBT+ scientists use their privilege to make their field open and accepting to all?

J.E.: Similar to how I answered the previous question, and, moreover, being willing to take on leadership roles to help enact change and to be visible. Leading by example – whether it is displaying a rainbow flag in the lab, displaying family photos in one's office, creating safe spaces at work or at scientific conferences, serving on LGBT+-related panels.

I.J.: Senior scientists, whether they are LGBT+ or otherwise, should be advocating for LGBT+ inclusion at every opportunity – to their workplaces, professional societies, funding agencies and the public in general. The platform they have within their field is a powerful pathway to positive change, yet most of the burden for such advocacy falls on LGBT+ scientists who are out. This is an opportunity for allies in senior positions to step up.

O.S.: I think we have a clear role in both advocacy but also pushing our funders and peers to keep promoting diversity and inclusion. We would all agree that in diversity in science is essential for the best ideas to develop and to tackle the most difficult questions; therefore, we need to keep challenging ourselves to continue improving things. It is very easy to say these issues are a 'larger problem' and outside of the control of a single institution. We also have to call out problems. That said, certainly now in the UK, I do think institutions and/or funders are keen to improve EDI, but we do need to ensure this does not merely become an exercise in box-ticking.

Looking back at your career, what has changed for LGBT+ scientists?

J.E.: I think there are more visible LBGT+ scientists, from trainees to faculty, than there were when I came out and started my career over 35 years ago. That said, I think there is still much less visibility in the scientific community compared to the medical community. As progressive as UCSF is, even just a few years ago, I had trouble naming other LGBT+ faculty members.

I.J.: LGBT+ scientists have always existed; however, many of them have lived quietly and kept their identities private. Universities have also had a 'don't ask, don't tell' culture, which have discouraged LGBT+ staff and students from being out. This has meant that exclusionary workplace cultures have persisted much to the detriment of individuals like us, and their career satisfaction. This culture is rapidly changing. It is now illegal to discriminate, and there are many efforts in so many scientific workplaces that genuinely celebrate LGBT+ inclusion through events such as LGBT+ history month, Pride month and LGBTQ+ STEMDay. If you are an LGBT+ scientist, you increasingly have fewer worries about being excluded or overlooked on the basis of your identity. That growing safety is powerful.

O.S.: When I started my PhD in 1990s, there really were very few visible LGBT+ scientists. But even then, this was department specific, as certainly some departments were more receptive to LGBT+ scientists, while others were not so tolerant. Now I think there has been a revolution in our attitudes. I am really hopeful that we are creating an environment in which people can feel comfortable about being open about their LGBT+ status as work. I think efforts in highlighting LGBT+ colleagues and faculty, such as this Perspective, is helping to achieve this.

Do you have any LGBT+ scientist heroes?

R.B.: Alan Turing, a Mancunian (defined as being from Manchester, UK), was clearly a genius of his time in computing science and mathematics, and he broke the Enigma code during WWII. Having the UK recognize his brilliance though the Turing Institutes and other Turing-named awards gives legacy to a man

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Box 6. Owen Sansom

Dr Owen Sansom is Director of the CRUK Beatson Institute in Glasgow, UK, where his research laboratory is based. He received his BSc in Genetics from the University of Nottingham, his MRes in Biology from the University of Manchester and his PhD in Cancer Biology from the University of Edinburgh. He has been instrumental in determining the molecular hallmarks of colorectal cancer and defining the roles of APC, WNT signalling and intestinal stem cells in tumorigenesis. Much of his work utilises very sophisticated genetically engineered models of cancer. He also directs the MRC funded National Mouse Genetics Network and co-leads the CRUK Scotland Centre. He has been awarded the BACR/AstraZeneca Young Scientist Frank Rose Award and CRUK Future Leaders in Cancer Research Prize and has been elected a Fellow of the Royal Society of Edinburgh, a Fellow of the Academy of Medical Sciences and an Honorary Fellow of the Royal College of Physicians and Surgeons of Glasgow.

who unfortunately lived in the wrong time. He was persecuted for his lifestyle rather than celebrated for his gifts to the world. The Alan Turing law of 2017 and the Royal Pardon in 2013 for Turing has gone some way to retrospectively and prospectively protect thousands of people; they will not have to endure the extreme penalties he did in the 1950s, just for being his true self.

J.E.: Sadly, no.

M.K.: The late Ben Barres – he was not only an out transgender scientist, but also a visionary researcher and a strong advocate for mentorship and women in science.

I.J.: I have many. Some of them are personal friends who had considerable impact on me and my career. However, someone who was recognizable to many, was the late Dr Penny Whetton. She was one of the leading climate scientists whose team won the Nobel Peace Prize for their pioneering work on projecting atmospheric changes. She came out as a trans woman whilst working as a scientist in CSIRO (Australia), and not only did she thrive in her work as a leading climate researcher, she also campaigned for the LGBT+ community in Australia, for their right to marriage equality. She is a heroine of mine because she symbolized overcoming social stigma, both with regard to her personal identity and for being an outspoken leader in her scientific specialty.

O.S.: Mine are from the generation below me, who have been so active in changing things. There are lots of heroes now and so many great initiatives in LGBT+ STEM. Two people who I would highlight as great role models are Dr Luke Boulter (a PI from Edinburgh, UK) who has been a huge advocate for the LGBT+ community since his PhD and Professor Josephine Bunch (National Physics Laboratory, UK).

What would you say to LGBT+ scientists who are worried about coming out?

R.B.: Be yourself and do it at a pace that suits your personality and life goals. Chronic worries can be draining. Understand that the additional energies you gain when you are out within your scientific community can be channeled into your best science and a steeper career trajectory.

J.E.: The courage needed to come out should never be underestimated. Only you can decide when you are comfortable coming out, and to whom. You don't have to come out 'all at once' – it's ok if it is a gradual process, and it's ok if you're out in some aspects of your life and not in others. Most importantly, you should always be the person in control of your own coming out process, and you should do it at a pace that works for you. Seeking out role models and mentors, if possible, can be quite helpful. Being closeted may result in a psychological burden, and if and when you decide to come out, that burden will be relieved. You may find that, as a result, cognitive space may be freed up for your scientific and other pursuits.

I.J.: Surround yourself with the support that you need and people who will see you for who you are. Coming out can be a painful process, but you do not owe it to anybody else. So, make sure that you come out on your own terms, when you are ready. Not being out does not mean that you do not exist. Society, and scientific workplaces, are increasingly becoming inclusive to LGBT+ people. Therefore, things will only get better over time.

What influence does the environment at the institution/university/place of work have? Are there any initiatives or structures you could think of that could help LGBT+ scientists?

J.E.: Inclusiveness, representation, and visibility are incredibly important in creating a welcoming work environment for all. I've been fortunate that UCSF has done many things over the years – from the creation of the LGBT Resource Center over 20 years ago, which publishes a voluntary 'out list', holds social events, and organizes training for staff and faculty about how to be more welcoming and inclusive, to the establishment of the Chancellor's Advisory Committee for LGBTQ+ Advocacy and the establishment of the UCSF Chancellor Award for LGBTQI+ Leadership award. Even fairly small initiatives can make a substantive difference, such as encouraging people to include their preferred pronouns routinely in their email signatures and providing rainbow stickers for members of the LGBTQ+ community and allies to put on their ID badges.

I.J.: Initiatives like the Stonewall Diversity Champions do a great job in encouraging universities to become more inclusive towards LGBT+ staff and students. However, here in the UK, we are experiencing a period of political disinformation that has led some universities to roll back some of these LGBT+-inclusive efforts. However, there are so many professional societies in STEM and organisations like LGBTQ+ STEM (which I am involved in running) that work tirelessly to provide a safe community and platform to colleagues regardless of their workplace environment. The annual LGBTQ+ STEMinar conference, is a great place for LGBT+ scientists to come and be their authentic selves.

How can scientists who do not identify as LGBT+ themselves be effective LGBT+ allies?

R.B.: Tackle collegial inclusion and diversity in the way we tackle patient complexity and heterogeneity – as a team, in which embracing differences leads to personalized and best outcomes, for all.

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I.J.: Listen and learn. Take the initiative to self-educate, particularly through reading. As I mentioned earlier, small gestures that show solidarity (e.g. wearing rainbow lanyards and stating your pronouns in the email signature) go a long way towards shifting the workplace culture to an inclusive one. Advocate your university, institute, company or organization to adopt LGBT+-inclusion policies and trans-awareness training. Make a commitment to being an active bystander and intervening on LGBT+-exclusionary behaviours or practices. Finally, play your role in educating others, particularly against disinformation targeting trans, nonbinary and gender-diverse people.

Editorial note: We are aware that the contributors to this Perspective are not a balanced representation of the LGBT+ science community, and we are only able to present a snapshot based on availability and desire to participate.