

Looking out for visual impairments



By Paul Upchurch

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Representation and discrimination of those with mobility and sensory impairments is a serious problem in academia, especially in the Earth sciences. Non-disabled academics must fight prejudice and increase the support to, and visibility of, physically impaired colleagues, states Paul Upchurch.

I am a vertebrate palaeobiologist and have a severe visual impairment: this combination is rather unusual and I rarely meet other Earth scientists with any form of disability. My love of dinosaurs started at an early age, and this grew into a broader fascination with the history of the Earth and life. However, at the age of eight, my vision deteriorated as a result of a rare retinal dystrophy. This diagnosis was traumatic, involving many upheavals, not the least of which was the threat to my ambition to become a palaeontologist. Despite this unpromising start, I am now a professor of palaeobiology and Head of Department, and I've had a long career in this fascinating field. Looking back, I realise that I have only made it this far through a combination of the support of others, my motivation and determination, and at times some large slices of luck.

There are many challenges created by severe visual impairment, not only to academic work and career trajectory, but in everyday life. Collecting and extracting information from fossils is central to palaeontology. It is not easy for me to traverse rugged field terrain, leading me to focus on museum data and more analytical and theoretical issues. This focus fortunately had the advantage of pushing me to tackle some of the larger evolutionary questions. However, everything I do is inevitably slower. Things that others take for granted, such as knowing which way a door is going to open, navigating around streets and buildings, finding a seat on the train, reading papers and processing data, take up more time and can be anxiety provoking. Much of my early career was spent reading using a video magnifying system – meaning my reading speed was

5 times slower than my fully sighted colleagues. This continuous 'drag factor' means that it is hard to be as productive as non-disabled colleagues, often with knock-on effects on career progression and traditional academic measures of esteem.

Things do seem to have improved substantially relative to when I started my first degree in the 1980s – nevertheless, major problems still persist. [Statistics from the UK show](#) that, since the 2010s, there has been virtually no increase in the representation of visually impaired undergraduates, there are lower completion rates for disabled PhD students, numbers of university senior managers with disabilities have decreased, and that many university staff are reluctant to declare their disability to employers for fear of retribution. So, what can be done to help?

Representation

There is still [a serious problem](#) with the representation of people with mobility and sensory impairments in academia. In particular, the traditional view of a geologist stomping around an outcrop looking at rocks is now only a small part of what Earth scientists actually do, but retaining this traditional view could be dissuading potential undergraduates. People with disabilities who cannot work in a field environment can still have careers in Earth sciences – the huge influx of data that can be obtained through various remote sensing techniques is just one example of how the subject can be made more accessible.

People with disabilities should be encouraged to consider career options in Earth sciences via outreach, role models and case studies, and non-disabled researchers should not just leave such efforts up to their disabled colleagues.

Giving academics with disabilities a higher profile in the media is also key. The Paralympics has done wonders for the public perception of the physical prowess of disabled people – just imagine what might happen if the media celebrated a similarly broad range of disabled people for their intellectual contributions.

Equitable schemes and systems

Personally, one of the more exhausting aspects of being a visually impaired academic is the additional 'life admin' that stems from the frequent need to break new ground by requesting changes in working practices or some additional support. Not surprisingly, it is often people with disabilities that do the 'heavy lifting' in terms of promoting equality, diversity and inclusion of disabled people – but this all represents additional time taken from their research, leading to further detriment to their own careers.

Institutions and grant bodies must consider compensating mechanisms that can help boost their research. There are already schemes for supporting early career researchers (such as NERC's New Investigator Grants) – there should be more ring-fenced schemes in order to boost diversity and support the careers of those in minority groups. Some grant awarding bodies (such as The Royal Society) are exploring such initiatives, which is encouraging, but the funding landscape still puts disabled researchers at a distinct disadvantage at present.

Employers should create systems that have accessibility already built in, enabling people with disabilities to slot more seamlessly into an organisation without feeling awkward or afraid. For example, universities depend heavily on webpages and bespoke IT applications for their administration and teaching, but many of these are partially or completely inaccessible to people with severe visual impairments. Yet, accessibility can be greatly enhanced through some fairly simple steps such as the use of the right file formats, webpage construction and appearance, and using the 'accessibility checker' built into some software. These efforts need to be standard and embedded practice, not just something that is applied when someone with a disability highlights that they cannot use a system.

Fight prejudice

Fundamentally, the attitude of non-disabled academics needs to change. Of course, allies are vital, and I would certainly count many of my colleagues as such allies. However, there is [worrying evidence](#) that many principal

investigators and university management teams have unfounded concerns about the abilities of people with disabilities, and are prone to view the issues as a problem rather than an opportunity. For example, a researcher's 'productivity' is often used as a key criterion when assessing hiring, grants, and promotion: this is understandable, but creates an unconscious bias against many disabled academics who often cannot produce at the same rate as their non-disabled colleagues. Greater emphasis on quality over quantity, combined with a holistic view of someone's research career and the personal circumstances they have faced, could go some way to addressing such biases.

I would argue that there are benefits in having people with disabilities in one's research group and in the wider organisation. People with disabilities bring new strengths and perspectives because they have had to think and adapt beyond the standard approaches.

My inability to dig up new dinosaurs pushed me towards bigger picture questions in my field. In addition, people with disabilities are often quite psychologically resilient. The COVID-19 pandemic (which adversely affected the anxiety levels of other colleagues) had less impact on me – perhaps losing a substantial portion of one's vision at the age of eight means some of life's other problems seem less daunting.

Finally, about 15% of UK and 20% of US undergraduates declare a disability: universities therefore need to have greater representation of disabilities among their staff (at present, [declaration among staff can be as low as 1%](#)). Although 22% of the US population is considered to have a disability, [only 4% of university faculty staff have a disability](#). Disabled students appreciate seeing that some of their lecturers also have disabilities, and such staff provide role models and mentors for these students.

Equality, diversity and inclusion is now receiving far more attention and momentum than ever before, and there has been a genuine effort by universities to work on these issues over the last few years. Yet, the statistics suggest that the representation of people with physical disabilities in academia has not changed much since the 2010s. Now is the time for individuals, societies, institutions and funding bodies to turn momentum into actions.

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