THIS WEEK

EDITORIALS

PHOTOSYNTHESIS Enzyme upgrade helps plants grow faster **p.280**

WORLD VIEW Research can bolster new UN world goals **p.281**

FOSSIL Ancient spiral-toothed shark went for soft centres **p.282**

Diversity challenge

There is growing evidence that embracing diversity — in all its senses — is key to doing good science. But there is still work to be done to ensure that inclusivity is the default, not the exception.

Earlier this year, Tom Welton, a chemistry professor at Imperial College London, wrote about the prejudice he experiences as a gay scientist. Intolerant peers jump to conclusions, insult him and make assumptions about his beliefs and behaviour. It is better, Welton wrote, to hide behind a lie: "I often find it easier to say 'I'm a teacher'."

Scientist colleagues had no problem with him being gay. But he found that people in the lesbian, gay, bisexual and transgender community seemed to have a problem with him being a scientist. "Most scientists, medics and engineers know that unless they have a stethoscope around their neck they aren't valued," he wrote.

As we explore in a Feature on page 297, others may have a different experience. Scientists, of course, should not be judged by their sexuality. The principles of research — reliance on data, rigorous experimentation and respect for evidence — do not cluster by any of the ways that humans choose to define themselves and each other. Gender, race, ethnic background, social status, wealth, nationality, age, skin colour and sexuality are as irrelevant to doing science as a person's musical taste or dietary preference. Or are they?

There is no place in science (or outside it) for prejudice. But there must be a place for diversity, and there is growing evidence that such variety is a key ingredient for doing good science. Much of that evidence is discussed this week in a joint special issue of *Nature* and our sister publication *Scientific American*.

Diversity is a vague word. The special-issue content (available at nature.com/diversity) is wide-ranging and covers much ground. It can be usefully tied together by a working definition: diversity means an inclusive approach, both to the science itself and the make-up of the groups of people who carry out the research.

Diversity is a topic too often discussed in the negative, through stories of discrimination and bias against select communities. Science has its problems here just like most of society, and *Nature* has long spoken out, for example, against the under-representation of women. Much of the special-issue content frames the subject in a different way, and examines the benefits of an inclusive approach.

Attention, busy scientists: if diversity sounds like a worthy topic but one better left to your university's human-resources department, then turn to page 305, where Richard Freeman and Wei Huang explain how it might boost your citation rate. Their analysis of the surnames of US-based authors on some 2.5 million research papers suggests that scientists who tend to stick with their own kind publish less-cited work, and in lower-impact journals.

Why published collaborations with a greater mixture of surnames perform better is unknown. What is clearer is that a mixture of people (mixed across whatever divisions you care to mention) will be able to consider and to enable a wider range of possible solutions to a problem. If the problem is scientific, then the result of that diversity can be better science. On page 301, for example, Esteban Burchard describes how his ethnic background and experiences with a variety of cultures have helped him to study the genetics of asthma in Latino Americans. On page 304, Mónica Ruiz-Casares highlights how the results of mental-health research based on adult, Western populations might not apply to other cultures and communities.

DIVERSITY
A *Nature* and *Scientific American* special issue **nature.com/diversity**

"There is a place for positive discrimination to address specific imbalances."

But collaboration that spans vast personal differences can raise problems. On page 303, Wenzel Geissler and Ferdinand Okwaro discuss the sometimes-fraught scenarios that arise when researchers from very different economic backgrounds work closely together. To draw attention to this inequality can be awkward, say the duo, but that is better than the destructive ways it can surface if ignored.

Science has already been through one revolution in diversity. Traditional academic silos that held subjects as distinct disciplines have crumbled. Interdisciplinary research now sets the agenda in many fields, especially those with a direct impact on society, such as climate-change research. That shift, although beneficial, was not entirely spontaneous. It was managed and encouraged by senior scientists and funders, who saw the pay-off. To fully develop the benefits of diversity, to ensure that science becomes fully inclusive, similar intervention is necessary — even if it is as simple as a busy lab head stopping to consider the issue for the first time.

As a telling graphic in the special issue of *Scientific American* illustrates, 51% of the science and engineering workforce in the United States is white and male. There is a place for positive discrimination to address specific imbalances. But diversity is not just a case of championing minority interests — the benefits of diversity go to the majority. ■

A worthy ambition

Finalizing the European Research Area is still a vibrant and relevant goal.

The completion of the European Research Area remains a "gradual process", admits the European Commission rather forlornly, at the conclusion of a report it published earlier this week on progress towards an entity within which European researchers and their ideas can circulate freely.

The European Research Area (ERA) was originally due to be finalized by the end of this year. The notion that this could happen, set