



TB TREATMENT University of Warwick & Liverpool School of Tropical Medicine | Public health, health services and primary care

The World Health Organization estimates that tuberculosis (TB) kills at least a million people every year. There are as many as 9 million new cases of the disease annually — and one third of these, often in developing countries, are missed by health-care services. Work by researchers Bertie Squire and Luis Cuevas in Malawi, Ethiopia, Yemen and several other countries has helped to identify the barriers that prevent residents on low incomes from accessing TB treatment services.

Some cases of TB are missed because diagnosing the disease is complicated and time-consuming, requiring the patient to make several visits to the clinic. Research by the team suggests that, in fact, one visit is usually sufficient for a positive diagnosis, saving time and money.

The researchers also found that engaging the community

in recognizing the disease helps to encourage people to seek treatment. When the researchers trained shopkeepers in a district of Lilongwe, Malawi, to spot TB symptoms, they found that disease detection rate doubled. In Ethiopia, sending health workers to households known to have an infected person similarly increased the rate of detection.

Reducing time to diagnosis was crucial to the success of the initiatives, and made sense to the communities that the researchers worked in. “It’s not that they don’t want to go,” says Squire, “they just can’t afford to pay for someone to look after the kids, for example.”

Such strategies have since been included in the national TB programmes of Malawi and Ethiopia, and are under consideration in Nigeria and in several other countries in sub-Saharan Africa.

PARALYMPIC PROWESS Loughborough University | Sport and exercise sciences

Great Britain’s paralympians stormed into third place at the London 2012 Olympic Games. The athletes’ success owed a lot to scientific research alongside hard work and training.

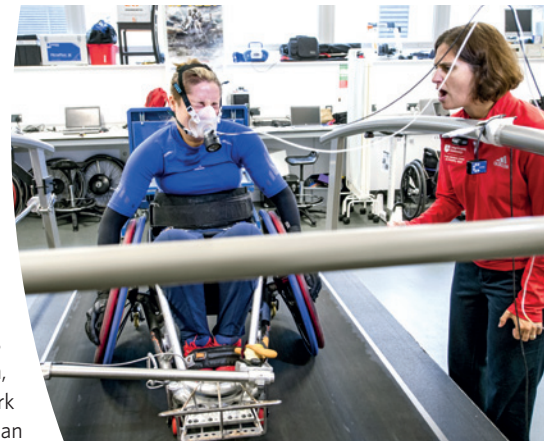
All athletes must give thought to their kit as well as their fitness. For wheelchair sports, this means setting up the chair. Research from a team led by Vicky Goosey-Tolfrey showed that camber and wheel size can radically affect the effort needed to propel a wheelchair. Goosey-Tolfrey’s team used this knowledge to help the GB paralympic basketball and rugby teams.

Her team, together with the university’s Sports Technology Institute, also worked on a project with UK Sport and BMW to improve the ergonomics of wheelchair

seats, customizing them for eight players at London 2012. The moulded seats enable faster movement and more stability.

The team’s research received extensive media attention, which helped to raise the profile of athletes with disabilities in the UK. “London was a tremendous experience. We’re prepping for Rio now!” says Goosey-Tolfrey.

Researching different designs of wheelchairs for elite athletes could help companies to make chairs for all people who need them, Goosey-Tolfrey says. “Although we’re doing work at a high-performance level, I hope the work can be disseminated to rehabilitation specialists.”



Rugby player Kylie Grimes and Goosey-Tolfrey (right).

TAKING ACTION ON CLIMATE CHANGE Cardiff University | Psychology, psychiatry and neuroscience

Climate change is arguably the biggest challenge facing our planet. Mitigating its effects will require widespread cooperation across nations, but each country needs to get its own house in order, too. Prompted by psychology research from Cardiff University, the UK set up a Climate Change Committee (CCC).

Climate targets have to be long term, but political cycles are short. Work by Nick Pidgeon at Cardiff University’s School of Psychology has helped to identify this mismatch — known as a ‘governance trap’ — and suggested that a separate body be established to deal with climate targets. As a result, the CCC was set up in 2008 as an

independent body of experts whose job is to influence government “across the board of energy and economic policy”, says Pidgeon.

The CCC has helped to introduce binding targets to reduce UK carbon emissions. Its initial recommendation, swiftly enshrined into legislation in 2008, was that UK carbon emissions be cut by 80% by 2050.

A fundamental change in the way we use energy will have myriad effects on the economy. Already, as a consequence of the CCC, the government is providing extra funds for developing renewable and other low-carbon energy sources and green technologies such as electric vehicles.

A NOTE ON THE FEATURED CASE STUDIES

These case studies were selected by Nature Publishing Group (NPG) from a shortlist provided by HEFCE. The shortlist represented a range of research subject areas from high-performing universities across the UK, and was not based on individual study scores. NPG chose the final line-up on editorial grounds.