

Correspondence

Iraq's unseen burden of wounded civilians

The burden of war-related mental disorders is well documented among US veterans (*Nature* 477, 390–393; 2011), but not among civilians in Iraq. This oversight must be rectified so that adequate medical support can be provided to the Iraqi people.

US combat troops will soon depart Iraq, leaving Iraqis to cope with the consequences of the 2003 invasion. Although the number of violent deaths is falling, civilians have been killed almost every day this year, most of them in coordinated bomb attacks. Roadside blasts cause long-term disabilities and societal effects among injured civilians. However, these have been largely neglected by the media and no systematic surveillance has been undertaken.

Despite Iraq's damaged health-care system, primary repairs of many injuries are being carried out with acceptable results. But some patients require advanced procedures that are not available in the country. For international aid organizations that are unable to work safely inside Iraq, one operational model is to treat patients outside the country.

Médecins Sans Frontières (MSF; also known as Doctors Without Borders) started a surgical programme in Amman, Jordan, in 2006 to provide functional reconstructive surgery and psychosocial support for Iraqi civilians. Although MSF has managed progressively to increase the capacity of its programme, it can still accommodate only a small fraction of the Iraqi civilians in desperate need of advanced surgical care.

Development of standardized data-collection tools would greatly improve future monitoring of mental health and of explosion injuries. Culturally adequate interventions and tailored support networks are needed to alleviate the long-term physical and psychological

repercussions of exposure to war-related trauma. Above all, efforts must concentrate on improving security for civilians.

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Brazil's forest code puts wetlands at risk

Brazil's revisions to its Forest Code threaten not only the Amazon rainforest but also its wetlands (*Nature* 476, 259–260; 2011). Many Brazilian flood plains extend into neighbouring countries, so they could also be affected.

Seasonal rainfall causes the levels of most Brazilian rivers to fluctuate. Flood plains reach widths of tens of metres along small streams and tens of kilometres along large rivers, and up to 90% of these dry up during periods of low rainfall.

These wetlands provide the environment and humans with important services, such as water storage, discharge buffering, water clearing, sediment retention, recharging of the groundwater level, local and regional climate regulation, and maintenance of a large biodiversity. Some provide homes and livelihoods for traditional human populations as they harbour important fish stocks and can also be managed for low-density cattle ranching and timber production.

Neither the old nor the new version of the Forest Code specifically mentions wetlands. The old code protects forests along streams and rivers, according to the river's width and maximum water level, thereby integrating and protecting the wetland areas. The new code protects areas only to a poorly defined "regular" water level, opening up opportunities for the destruction of high-lying

wetland areas. This will damage the integrity of the remaining low-lying areas, along with most of their benefits for humans and the environment.

The Intergovernmental Panel on Climate Change predicts that large parts of Brazil will experience heavier rainy seasons and more severe dry periods interspersed with heavy rainfall. Buffering by intact wetlands will be increasingly important as water availability and distribution become the limiting factors for agricultural development and the well-being of rural and urban populations.

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Small colleges aided by research networks

As faculty members of primarily undergraduate institutions (PUIs), we have successfully developed research programmes with our students despite funding and collaborator limitations (*Nature* 477, 239–241; 2011). Long-term research at PUIs is challenging, but feasible.

To improve our research productivity, we have set up collaborative research networks with other PUIs. Through our Ecological Research as Education Network (EREN, comprising 72 PUIs), we are helping each other to develop grant proposals, research protocols, data sets and manuscripts, and are teaching students through multi-institutional, collaborative research (D. R. Bowne *et al.* *BioScience* 61, 386–392; 2011).

Internal research funding, including start-up packages, varies widely among institutions.

In a survey of 50 ecology faculty members from PUIs at the Ecological Society of America's 2011 annual meeting, 30% of respondents reported no internal support for research equipment and supplies, and 51% said there was none for student-researcher stipends. Inter-institutional networks enable faculty members to share research resources at minimal cost.

PUI faculty members are creative in seeking research funding. For example, the same survey revealed that 94 funding sources had been successfully accessed, including US government agencies.

PUI faculty members often collect long-term data during undergraduate courses and in independent research, although better coordination is needed to enhance the scientific and educational impact of this work. Members of EREN have shared research protocols with many institutions to answer continental-scale questions.

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Aboriginal people agreed to DNA study

As research manager of the Goldfields Land and Sea Council (GLSC), I was involved in your discussion of Aboriginal genome research (*Nature* 477, 522–523; 2011) and would like to make it clear that the decision to allow analysis of the 90-year-old hair sample was made by the duly mandated people. The decision took proper account of ethical research practices and of the rights of Aboriginal people to safeguard their cultural heritage.

The GLSC is the representative body for the Aboriginal people

in the region where the sample was obtained, and is recognized under the Native Title Act 1993. The directors are elected by GLSC members, and membership is open to all Aboriginal residents of the region. In granting their permission for the research, the board exercised properly defined moral, cultural and legal authority to speak on behalf of the Aboriginal people there.

Most research — be it sociological, historical or genetic, or even political polling — extrapolates from a sample to draw conclusions. Participants are rarely expected to seek consent from their entire group before giving up information.

Because the hair sample was almost certainly given to British ethnologist Alfred Cort Haddon voluntarily in the early 1920s, this example of an informal exchange between an Aboriginal person and a researcher does not provide a model for all such exchanges in the future. These should be underpinned by a

standard indicating that free, prior and informed consent was sought from the proper people. **Craig Muller** *Goldfields Land and Sea Council, Perth, Western Australia, Australia.* craig.muller@glc.com.au

Give more priority to phosphorus studies

I agree with James Elser and Elena Bennett that we should recycle phosphorus (*Nature* **478**, 29–31; 2011). However, there are situations in which the natural recycling of phosphorus is not ecologically desirable.

As the authors note, excess phosphorus in water bodies can feed algal blooms and create anoxic zones. What is less well known is that these waters can become permanent dead zones, stuck in an oxygen-deprived, nutrient-rich state. This happens when the algae die, sink and are decomposed by anaerobic bacteria that need only limited

amounts of phosphorus. Most of the algal phosphorus is released back into the water to feed further blooms. In the Baltic Sea, for example, reductions in phosphorus pollution from rivers have not yet led to ecosystem recovery because of this effect.

We have disturbingly little insight into major phosphorus fluxes in the marine realm. This is the legacy of decades of research priority being given to the microbial complexities of the nitrogen cycle over the methodologically challenging investigation of phosphorus cycling.

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Boost resilience to tackle mental illness

An economically efficient way of tackling the enormous social and economic costs of

mental ill health (*Nature* **477**, 132 and **478**, 15; 2011) would be to boost 'resilience' to mood disorders.

Mentally healthy individuals often show a positive affective bias because their processing of negative information is inhibited. This effect, possibly mediated by the neuromodulator serotonin, promotes resilience by dampening the stress associated with negative life experiences.

Devising ways to promote such resilience in healthy individuals could help to prevent chronic stress-related brain disorders, saving huge amounts of money and headache every year.

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Disclaimer: Views presented in this Correspondence are solely those of the author and do not necessarily represent the views of the US federal government.



NATURE'S READERS COMMENT ONLINE

Selected responses to 'Fund people not projects' by John P. A. Ioannidis (Nature 477, 529–531; 2011).

Yiding Zhao says:

'Fund people not projects' was once the model used in China, but major international journals frowned on it because it risked creating *Xue ba* (scientific autocracy that suppresses others' ideas). So we worked hard to adapt the grant-based model. Now you are telling us the grant-based model is worse? yidingzhao@pku.edu.cn

Ken Whitmire says:

A way to fund people rather than projects would be to allocate money directly to individual graduate students and postdocs through fellowships, instead of funnelling it through a principal investigator's grant. This redirection wouldn't cost the system any more money, and it would make it clear to non-scientists that fellowships are funding the training of a highly skilled technical workforce, as well as helping a research enterprise. Students would have more independence in choosing an adviser and advisers would

be under less pressure to raise huge sums of money to support an active research group. whitmir@rice.edu

Sander Heinsalu says:

Funding models have trade-offs. Detailed checks create bureaucracy, but avoid misuse of money. Specific goals limit creativity, but avoid funding less useful projects. I would like to see scientific evidence on which funding models generate better output — although the best definition of output is also debatable. sanderheinsalu@hotmail.com

Adrian Barnett says:

One option is to fund projects retrospectively, with money being handed out for work delivered (including papers, policy changes, improvements in health), rather than for promises made in grant applications. Most current grant systems are heavily biased towards senior staff, but this scheme would work irrespective of applicants'

status. The process would be less burdensome for researchers because it would involve gathering their existing evidence and costs. a.barnett@qut.edu.au

Craig Macfarlane says:

The funding model is largely irrelevant — what really matters is the amount of money. Whatever the system is, scientists are smart enough to learn to play it, and it will be dominated by established players who are closest to its centre. The only solutions are for developed countries to increase public funding for research to ensure that it is not just the heavyweights who receive grants, and to support more public-good research. Anything else is just fiddling at the margins. Until that happens (when hell freezes over perhaps), get used to things the way they are. fisheye@iinet.net.au

To join this debate, go to <http://go.nature.com/ciahh5>.