

Correspondence

Shock prize announcement

This year's Gruber Cosmology Prize — the most prestigious in the field — went to the European Space Agency's Planck satellite observatory team for its precise measurement of the Universe's contents and contours. The US\$500,000 prize will be awarded on 20 August in Vienna. The Planck team has more than 300 members, of whom about one-fifth are women. Yet the collaboration has indicated that the team's half-share of the prize money (two principal investigators share the other half) would be divided between 43 senior members of the collaboration, all of whom are men. Although the number of recipients has to be limited and the prize money might end up being pooled, it is remarkable that this situation has arisen in 2018.

That all Planck's female scientists have even temporarily been deemed unworthy of controlling a share of the prize is unwelcome news, especially to the many of us trying to tackle the under-representation of women in astronomy.

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Speed up global ban on trans fats in foods

I suggest that the food industry should be subject to a time limit for removing hazards identified in the global food system (see L. Haddad *Nature* **556**, 19–22; 2018). For example, we have known for decades that industrially processed *trans*-fatty acids (TFAs) in food are a risk factor for cardiovascular disease. Although TFAs can be removed from the food supply efficiently, in many countries these still persist (see, for example, S. Stender *et al.* *BMJ Open* **6**, e010673; 2016).

Denmark has been leading the fight against TFAs since 2004. And seven years have been lost

since the European Union issued its food-labelling regulation in 2011, which would have been an opportunity to tackle TFAs. Although a TFA ban is still on the EU agenda (see go.nature.com/2okkffs), taking action is up to individual states — for example, TFAs are no longer permitted in Slovenia.

By contrast, a ban on partially hydrogenated vegetable oils, the source of TFAs in food, has just come into effect in the United States; Canada will follow next month. And the World Health Organization this year made elimination of TFAs by 2023 the highest priority in its 'REPLACE' action programme (see go.nature.com/2vintqf).

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Undergrad research: begin at the start

I question the common practice of training undergraduate students in research only during their final year at university (see J. Ankrum *Nature* <http://doi.org/gdwps2>; 2018). For an honours thesis, a student in Canada typically spends 4 months learning technique to inform 4 months — or around 350 hours — of effective research. Instead, my lab trains undergraduates in research methods throughout their degree, so that they have about 1,200–1,600 hours of hands-on research experience by the time they graduate.

We use a vertical peer-mentoring system in my synthetic-chemistry lab: graduates and postdocs oversee undergraduate projects, assisted by experienced undergraduate researchers, who help to train the new undergraduates. The lab currently hosts 25 undergraduates, with an annual intake of around 7 promising first-year students. They spend their first year learning and developing

techniques, their second testing and troubleshooting chemical reactions, their third designing and implementing small research projects, and their final year producing their thesis.

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Tackling AI impact on drug patenting

Initiatives are already under way to avoid ill-considered moves concerning the impact of artificial intelligence (AI) on drug patenting (see L. Heuer *Nature* **558**, 519; 2018).

Heuer mentions some of the issues. For example, he foresees problems over whether to designate the algorithm or its programmer as the inventor, and whether a drug discovered through machine-learning methods would be patentable.

In the United States, at least, some of these issues are currently clear. For example, US patent law states that “a person shall be entitled to a patent”, and an algorithm is not a person. It also states that “patentability shall not be negated by the manner in which the invention was made”. More generally, it is insufficient to assert that just because an AI could arrive at a particular solution, then that solution must be obvious.

However, a serious problem for pharmaceutical companies is that, according to US law, only people can make the inventive step in patents. In practice, it is likely that algorithms are making many of those steps, raising questions about the validity of these patents in the United States. We welcome efforts to arrive at a consensus over such dilemmas by the robotics research community (see go.nature.com/2onhgcb), intellectual-property professionals (see go.nature.com/2oiwh4c), the European Commission and the European Patent Office.

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Junior reviewers jump into the pool

As members of the Association of Polar Early Career Scientists (APECS), we participated in a group review of the upcoming report on the ocean and cryosphere from the Intergovernmental Panel on Climate Change (IPCC). Our analysis compared well with reviews by more senior scientists (see also L. van der Veer *et al.* *Clim. Change* **125**, 137–148; 2014). Early-career scientists are an untapped source of peer reviewers who, in our view, could be deployed as successfully on journal manuscripts as on large reports.

We encourage other early-career scientists to engage in individual and group reviews, such as those organized by APECS, including the second review of the IPCC ocean and cryosphere report taking place later this year.

Expanding the reviewer pool in this way would benefit the scientific community by mitigating the review burden (see, for example, M. Kovanis *et al.* *PLoS ONE* **11**, e0166387; 2016). There would be career advantages for junior researchers who were accomplished reviewers. And they would gain insight into improving the preparation and presentation of their own papers.

Comprehensive reports such as those compiled by the IPCC provide a means for the scientific community to reach the public. Such engagement is becoming increasingly important, so early-career researchers must learn to contribute to it effectively.

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**On behalf of 12 co-signatories (see go.nature.com/2mdtryf for full list).*