A trading scheme to reduce false results

Cap-and-trade systems have proved useful in cutting pollutants such as sulphur dioxide, nitrogen oxides and lead additives in petrol (see L. H. Goulder *J. Econ. Perspect.* **27,** 87–102; 2013). We suggest that they could also be applied to reduce pollution of the scientific literature with irreproducible results (see go.nature.com/huhbyr).

Companies do not have to deal with the social costs of pollution, so there is little incentive for them to reduce it. Likewise, researchers do not have to face the cost of publishing their own unverifiable results (most of which could have been prevented). That cost is borne by the scientific community and the public — for instance, in subsequent research inspired by false positives, which can lead to badly designed policies.

Cap-and-trade systems force excessive polluters to purchase permits. Initially, institutions could receive 5 free permits per 100 published results, reflecting the widely accepted ideal of a 5% false-positive production rate. It would then be necessary to buy extra permits from other institutions should they 'emit' significantly more false positives that this (irrespective of whether these were honest or deliberate errors).

Institutions that successfully reduce false positives in their research output could then sell off their surplus permits to other institutions that have exceeded their allocation. This flexibility would create incentives for researchers to find innovative ways to reduce false positives.

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