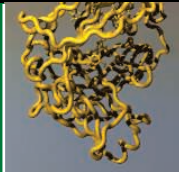




Building in flexibility

1566



Closer to combination therapies

1567

viral shedding, and transmission) should be considered with respect to both seasonal and pandemic influenza.

The unpredictable nature of influenza presents a challenge for both research and pandemic preparedness planning. Our ability to anticipate pandemic events is poor, and our anti-pandemic armamentarium is weak. In an ever-shifting landscape of influenza evolution, we need to be farsighted and forceful in optimizing pandemic response capacity.

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References and Notes

1. N. J. Dharan *et al.*, *JAMA*, 10.1001/jama.2009.294, published online 2 March 2009.
2. M. E. Halloran *et al.*, *Proc. Natl. Acad. Sci. U.S.A.* **105**, 4639 (2008).
3. A. S. Monto, *Clin. Infect. Dis.* **48**, 397 (2009).
4. The United States has stockpiled 81 million doses of oseltamivir—one dose each for 25% of the population.
5. D. M. Morens, J. K. Taubenberger, A. S. Fauci, *J. Infect. Dis.* **198**, 962 (2008).
6. This research was supported in part by the Intramural Research Program of the NIAID and the NIH.

Romanian Expatriates Face Career Obstacles

IN HIS NEWS FOCUS STORY “REACHING FOR the stars in Romania” (21 November 2008, p. 1183), M. Enserink gives a realistic description of some important problems of Romanian science. I would like to add another important issue: Successful expatriated Romanian scientists should be encouraged to return to Romania to hold important positions, and they should be appropriately compensated for doing so. In theory, expatriated scientists are encouraged to return and take leadership roles. In practice, these scientists have trouble securing their place in the applicant pool. To qualify for consideration, the expatriated scientists must demonstrate that the position they

hold abroad is equivalent to the Romanian position immediately subordinate to the open position. The legal process to determine equivalency is cumbersome, and there is no definite authority who can certify equivalence. These ambiguous requirements often serve as an obstruction to expatriated scientists.

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Reversible Exploration Not Worth the Cost

C. P. MCKAY (“BIOLOGICALLY REVERSIBLE exploration,” Policy Forum, 6 February, p. 718) makes an impassioned case for so-called biologically reversible exploration of Mars. However, such a strategy will impose additional costs on an already strained program (1), and it is neither feasible in the context of a robust Mars exploration program nor necessary to ensure the fidelity of future in situ scientific endeavors. The concept of biologically reversible exploration is focused on potential effects of forward contamination—the transport of terrestrial microorganisms to other planetary bodies. Using real options theory (2), we can evaluate the ability to preserve future decision paths (such as the ability to

“reverse” biological incursions) with present investments [such as spacecraft sterilization and constraints put in place on “special regions” (3)]. An accounting of present and future scientific costs and benefits must be made to critically assess this idea. In the near term, additional costs will result from spacecraft preparation regimes, compliance, and possibly reduced mission capability due to constraints on instrumentation and landing site restrictions. The suggestion that even human exploration should achieve “biological reversibility” will impose an enormous burden on such missions in terms of both direct costs and curtailed science from restrictions on access to the subsurface. In contrast, the supposed benefits are only potential benefits, mostly in the event of terraforming, and extremely long-term in nature. The exchange of meteorite material between Earth and Mars (4), the flotilla of existing landed missions, and the fleet of orbiters that will eventually crash into the surface already determine both the past and near-future two-way exchange of biological material between Earth and Mars. Special regions of scientific interest on Mars do call for prudent measures to reduce contamination, but the extreme measures advocated by McKay will not yield sufficient benefits to justify their high costs.

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References

1. A. Lawler, *Science* **322**, 1618 (2008).
2. A. K. Dixit, R. S. Pindyck, *Investment Under Uncertainty* (Princeton Univ. Press, Princeton, NJ, 1994).
3. COSPAR, “Report on the 34th COSPAR Assembly,” COSPAR Inform. Bull. No. 156, 24 (April 2003).
4. B. J. Gladman, J. A. Burns, M. Duncan, P. Lee, H. F. Levison, *Science* **271**, 1387 (1996).

CORRECTIONS AND CLARIFICATIONS

News of the Week: “NSF restores data on minority Ph.D.s” by J. Mervis (27 February, p. 1161). The National Science Foundation estimates that its new policy on reporting small numbers of minorities will suppress data on 3.7% of the new Ph.D.s in the Survey of Earned Doctorates. The original story incorrectly reported that 4% of the 280 subfields would be affected.

News Focus: “Tales of a prehistoric human genome” by E. Pennisi (13 February, p. 866). The story mischaracterized James P. Noonan’s mouse experiment that used an enhancer showing human-specific activity. In that study (published in the 5 September 2008 issue of *Science*, p. 1346), the enhancer drove the expression of a reporter gene in the mice, but the researchers did not examine its effect on thumb development.

News Focus: “On the origin of art and symbolism” by M. Balter (6 February, p. 709). Ochre expert Ian Watts was cited as saying that there was little sign that ochre found at Twin Rivers, Zambia, was ground into powder, as needed for decoration. This incorrectly states Watts’s view. Although only a small percentage of the approximately 300 pieces of ochre found at Twin Rivers show signs of grinding or other use, nearly all those that do are a dark, sparkly red. This leads Watts to conclude that they might have been preferentially chosen for symbolic purposes, although that is not certain.

Reviews: “Darwin’s originality” by P. J. Bowler (9 January, p. 223). On page 226, reference 8 should read as follows: J. Browne, *Charles Darwin: The Power of Place* (Jonathan Cape, London, 2002). In reference 22, *Transmutation Notebook D* should have been *Notebook B*. Also in reference 22, two page numbers were missing: *Natural Selection*, p. 36, and *Charles Darwin’s Notebooks*, p. 180.

Reports: “Observation of pulsed γ -rays above 25 GeV from the Crab pulsar with MAGIC” by The MAGIC Collaboration (21 November 2008, p. 1221). The e-mail address for N. Otte was incorrect. The correct address is nepomuk@scipp.ucsc.edu.