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► **COVER:** '3D model bear' by Philip Patenall, inspired by the Review on p791. Using standard 3D glasses (left eye, red; right eye, green) achieves the full effect.

Infections can take many forms, but they do not take place in two dimensions. Nonetheless, most tissue culture systems look at the interaction of pathogens with a single flat layer of cells. On page 791, Cheryl Nickerson argues that using the rotating wall bioreactor and other three-dimensional culture systems can provide insight into pathogenic mechanisms that cannot be obtained with two-dimensional systems.

On a population scale, infections such as HIV, influenza and severe acute respiratory syndrome (SARS) can be transmitted from one species to another. Some viruses need to adapt to the new host, whereas others do not. If adaptation is required, predicting whether cross-species transmission will occur requires knowledge of the genetic make-up of the circulating viruses and the changes required for a virus to adapt. Kim Pepin and colleagues describe on page 802 how this information can be acquired and analyse the literature to assess what relevant information is normally captured in studies on four sample viruses.

On page 814, Peter Hotez and colleagues describe two other pressing public-health issues, namely, hookworm infection and intestinal schistosomiasis. They describe vaccination approaches for each infection and argue that a multivalent vaccine may have many benefits, such as decreased cost of vaccination and better distribution.

Last, as part of our series on Applied and Industrial Microbiology, Gareth Griffiths and colleagues describe the use of biodegradable nanobeads for the delivery of antimicrobials, with a specific focus on the treatment of tuberculosis. These systems have several advantages, including potentially shorter treatment times and the possibility of combining treatment with imaging agents.



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