Nuclear division takes place in the mother cell in Ascomycetes (left) but occurs in the newly budded daughter cell in the Basidiomycetes group of fungi (right). Using a systems biology approach, Sutradhar, Yadav, Sridhar, et al. report that the number of cytoplasmic microtubules is a key determinant of the site of nuclear division in these fungi. See the article on p. 3954 of this issue of MBoC. Shown here are images of cells undergoing mitosis as predicted by computational simulations. Cell, blue; DNA, magenta; spindle, yellow; spindle pole bodies, cyan; septin ring, green. (Image: Sabyasachi Sutradhar and Raja Paul, Indian Association for the Cultivation of Science; Vikas Yadav, Shreyas Sridhar, and Kaustuv Sanyal, Jawaharlal Nehru Centre for Advanced Scientific Research)