When cells divide, the chromosomes become highly condensed. After cell division, the chromosomes in the daughter cells decondense, nuclear bodies reappear, and specific regions of the chromosomes, termed heterochromatin, frequently surround the nucleoli. These images illustrate steps during these events. Human RPE1 epithelial cells were stained to visualize DNA (blue) and the proteins Ki-67 (green) and nucleolin (NCL; red). The leftmost cell is about to divide and features Ki-67 coating the chromosomes, whereas most of the NCL is not associated with chromosomes. The two cells in the middle recently divided and feature Ki-67 in hundreds of distinct punctate foci while the majority of NCL resides within newly reformed nucleoli. The rightmost cell is later in the cell cycle and shows Ki-67 and NCL localized to the nucleoli. See the article by Matheson and Kaufman on p. 21 of this issue of *MBoC*. (Image: Timothy D. Matheson, University of Massachusetts Medical School)