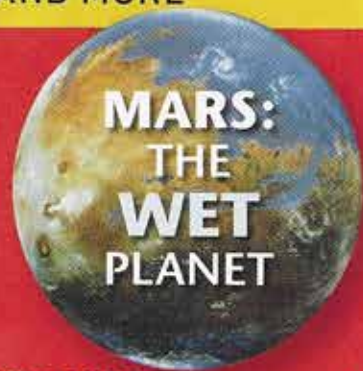


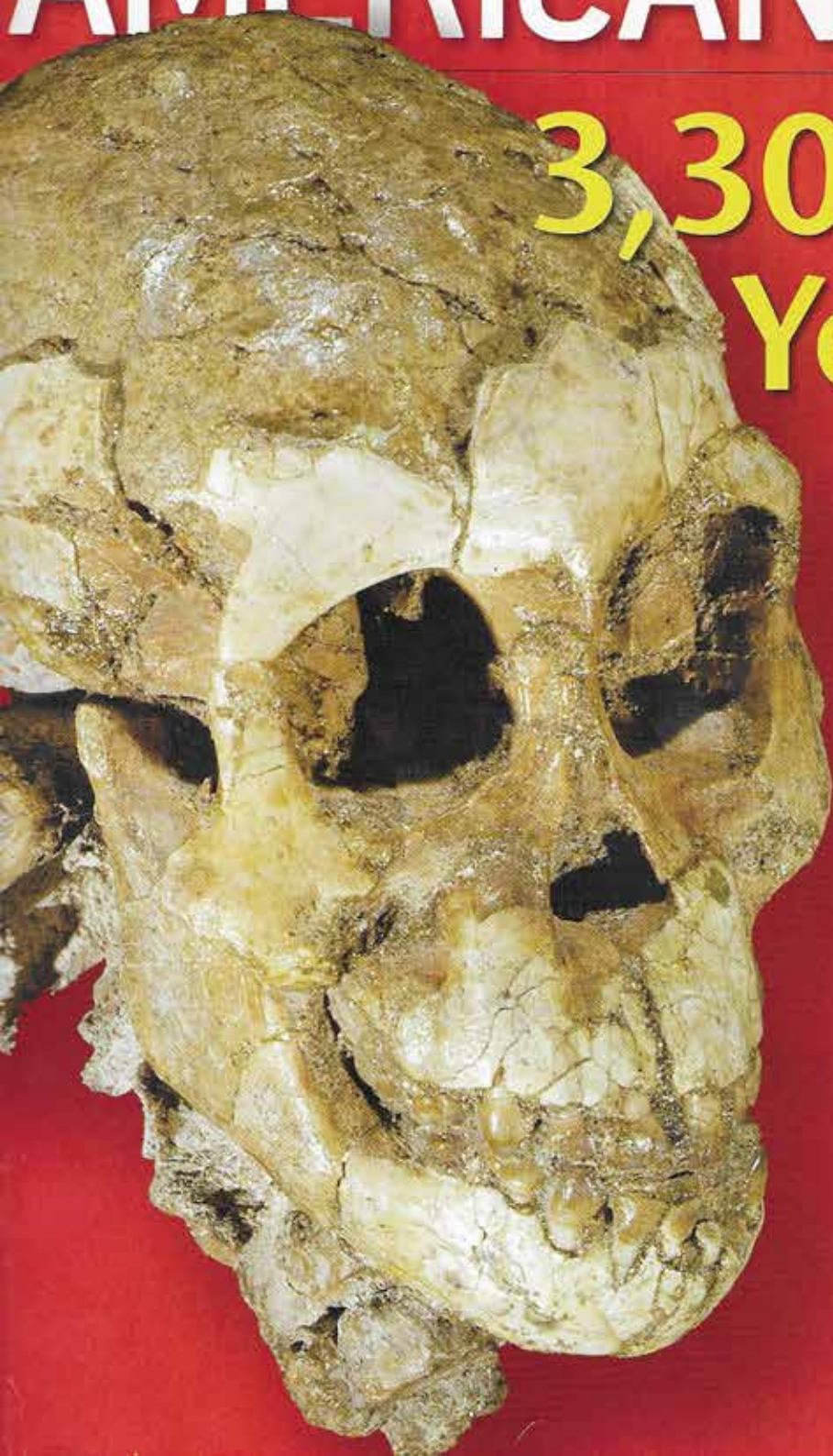
TECH LEADERS: THE SCIENTIFIC AMERICAN 50 FOR 2006
NANOELECTRONICS, STEM CELLS, ROBOTICS AND MORE

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The Promise of the Mother Cell

Stem cell biology continues to hint at medical benefits to come

A recent research trend has targeted the goal of having one's stem cells and preserving embryos, too—a nod to powerful critics such as President George W. Bush. Even if an embryo remains intact—the objective of these studies—it is unclear whether these methods will ever satisfy Bush and others who rail against what they perceive as immoral tinkering with the stuff of life.

Kevin Eggan and his colleagues at the Harvard Stem Cell Institute brought together embryonic stem cells with skin cells, or fibroblasts, creating fusion cells that reprogrammed themselves to resemble embryonic stem cells genetically matched to the donor of the skin cell. These cells would have the versatility to turn into any other cell type—and would not require a cloning procedure that necessitates the destruction of an embryo.

The promise of stem cells was again reaffirmed by an experimental therapy to treat patients with lupus—a disease

in which the patient's immune system targets the body's own tissue. A group led by **Richard K. Burt** of the Northwestern University, Feinberg School of Medicine, removed stem cells from the patient's bone marrow. Drugs then wiped out the population of white blood cells before the stem cells were returned to the body, where they formed new white blood cells that were less likely to make damaging antibodies. In a study of 48 patients, half did not have the disease after a period of five years.

Determining how an embryonic stem cell differentiates into mature cells might eventually allow development of methods to reprogram an adult cell. Those techniques might let the mature cell return to its pluripotent state, in which it is capable of turning into different cell types. **Laurie A. Boyer** and **Richard A. Young** of the Whitehead Institute for Biomedical Research and their colleagues demonstrated how three proteins control this process.

John Rennie
Editor in Chief

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October 25, 2006

Richard K. Burt, MD
Chief, Division of Immunotherapy

Dear Dr. Burt:

Congratulations. The Board of Editors of *SCIENTIFIC AMERICAN* magazine is pleased to announce that it has selected you for inclusion in the fifth annual *SCIENTIFIC AMERICAN 50*. This award from *SCIENTIFIC AMERICAN* honors 50 individuals, teams, companies and other organizations whose accomplishments in research, business or policymaking during 2005 – 2006 demonstrate outstanding technological leadership.

The honorees are celebrated for their contributions to a wide variety of areas, such as such as biotechnology, microelectronics, energy and genetics. Winners over the past several years have included Larry Page and Sergey Brin; founders of Google (sharing the distinction of 2005 Business Leader of the Year), research philanthropist Fred Kavli (2005 Policy Leader of the Year), renowned stem cell researcher Douglas A. Melton, Professor of the National Sciences at Harvard (2004 Policy Leader of the Year); and Nobel prize-winning neurobiologist Roderick MacKinnon, Professor of Molecular Neurobiology and Biophysics of Rockefeller University (2003 Research Leader of the Year).

We are delighted to say that you emerged as a winner for your research contributions to stem cell research.

The complete list of winners for the SA 50 will appear in the December 2006 issue of *SCIENTIFIC AMERICAN*.

The formal announcement of the SA 50 winners will be on Monday, November 6, shortly before the newsstand publication of our December issue. We ask that you please treat your inclusion in the list as **HIGHLY CONFIDENTIAL** until that date, so that we may organize publicity for maximum effect.

Please be sure to see the enclosed detailed instructions on how to release your announcement, as well as a template press release. Please be sure to pass on these materials to your public relations representative.

We hope that you will be pleased to be among this year's SA 50. Congratulations from all of us at *SCIENTIFIC AMERICAN*, and thank you for the many contributions that made this a well-deserved honor.

Sincerely,



John Rennie