

## *Campaigning for Stem Cells*

Research Advocates Launch a New Offensive for Funding

Ever since the Bush administration announced its policy on federal funding of embryonic stem cell research—funding only research on embryos destroyed before the policy’s announcement, and not after—research advocates have argued that the policy is

too restrictive. This spring, perhaps in the hope that stem cells might become a campaign issue in this year’s elections, opponents of the Bush policy mounted the most serious offensive yet.

In March, Harvard University researcher Douglas Melton announced that,

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using private funding, his lab had developed 17 new lines of embryonic stem cells, and would make them available at no cost to researchers. The lines that are currently available under the Bush policy, while eligible for federal support, are not provided for free by their owners. This might explain why, in one month, Melton received 320 requests for his lines, slightly more than the National Institutes of Health has received for the federally-supported lines in the last two and a half years, according to *USA Today*.

Melton's announcement and the immediate demand for his lines might be taken as a sign that substantial private funding for embryonic stem cell research is available and effective, and that perhaps no further public funding would be necessary. But advocates of the research insisted, on the contrary, that the new lines demonstrate why the Bush administration needs to loosen its funding policy, and why the scientists need more money for more lines, without limits.

In April, two major research universities announced new stem cell research institutes. The University of Wisconsin, which has been at the forefront of embryonic stem cell research from the beginning, announced a new program to bring together the various stem cell research endeavors on its campuses. "The intent," said R. Timothy Mulcahy, associate dean for the biological sciences at Wisconsin, "is to create an active, dynamic program that helps us develop an academic environment that is synergistic and opportunistic, helping keep Wisconsin at the forefront of the field."

Later in the month, in the same spirit of synergy and opportunism, Harvard announced a far more ambitious new institute to advance the development and use of

human embryonic stem cells. The institute, which is entirely privately funded, hopes to raise \$100 million for its operations over the next few years. That amount is substantially more than the federal government could be expected to devote to such research at any one institution, even if there were no limits on funding at all. But at the institute's launch, its promoters nonetheless focused their attention on the need for more government funding.

Meanwhile, the state of New Jersey is soon to inaugurate a \$50 million stem cell institute to be funded with state and private dollars, and research supporters in California have put a \$3 billion (yes, that's billion, with a "b") bond issue on the ballot for next November to support stem cell research in that state. Also in California, in early May, supporters of increased federal funding received a boost from former First Lady Nancy Reagan, who made a public case for the research, which she hopes might someday help those suffering from Alzheimer's (as her husband, former President Reagan, has been suffering for a decade).

And in Washington, on the same week as the Harvard stem cell institute's launch, a group of 206 congressmen, led by Democratic Representative Diana DeGette of Colorado, sent a letter to President Bush urging him to change his funding policy. "Scientists have told us," the letter says, "that since the policy went into effect more than two years ago, we have learned much more about why the embryonic stem cell lines eligible for federal funding will not be suitable to effectively promote this research."

The letter then lists four such things "we have learned," though only two actually have to do with the eligible lines of stem cells (the others are about the state of stem

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cell research in general). The letter declared that although 78 stem cell lines were said to exist, only 19 are now available to researchers, and that all 19 were developed with mouse feeder cells, which means that they are “contaminated.”

Neither claim gets things quite right. First, the number of *available* stem cell lines has been increasing steadily as more of the *eligible* lines are developed to the point that they can be distributed to scientists. Just days before the congressional letter went out, the number of available stem cell lines had been 18, three weeks earlier it had been 17, in January there were 15, and a year ago there were fewer than 10. In fact, the number of available stem cell lines has been rising so often this year that some Members of Congress can't keep up: Even as signatures were being collected for the congressional letter, the number of available stem cell lines increased twice—so that some copies of the letter posted on congressional websites still claim that only 15 stem cell lines are available, while others say 19. Certainly, not all 78 eligible stem cell lines will develop successfully, but the implication that only 19 are ever going to be available to researchers is disingenuous.

Meanwhile, the question of “contamination” by mouse feeder cells seems on the whole to be a red herring. Almost all currently available human embryonic stem cell lines were created with such mouse cells, and the FDA has said that use of these cells would not preclude approval of potential stem cell therapies, were they ever to be submitted to the agency. Perhaps more important, and unacknowledged in the congressional letter, is the fact that a number of the Bush-approved stem cell lines were *not* created with mouse feeder cells. These lines have so far not been

developed at all—they are frozen in an undeveloped form, for use when techniques that do not rely on mouse cells are perfected, and so they are not counted among the 19 available federally approved lines. As NIH director Elias Zerhouni said last fall, “there are at least those, which is about 16 lines, I believe, that have not been exposed to either mouse or human feeder cells.”

The congressional letter also put on prominent display another troubling aspect of the research funding campaign: gross and irresponsible exaggeration of the promise of embryonic stem cells. “As you know,” Rep. DeGette and her co-signers wrote, “embryonic stem cells have the potential to be used to treat and better understand deadly and disabling diseases that affect more than 100 million Americans, such as cancer, heart disease, diabetes, Parkinson's, Alzheimer's, multiple sclerosis, spinal cord injury, and many others.” Likewise, in a speech at the launch of Harvard's stem cell institute, Harvard president Lawrence Summers claimed the number of beneficiaries was more like 150 million.

These numerical claims are outrageous. Embryonic stem cell research is a very young science, and its promise is at this point purely speculative. No human therapies of any kind have yet been developed or tested at all, for any disease or condition. And the notion that embryonic stem cells will cure “cancer” and “heart disease,” broad categories of diseases that are not used by researchers to refer to particular ailments, is utterly unsupported by even informed conjectures. Yet these broad categories are the only way that advocates for funding can pump up the numbers of people to be cured into the nine-digit stratosphere. One has to wonder how many of the 206 members of Congress who signed

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DeGette's letter knew that this figure was wildly exaggerated, and whether they would still have signed if they had known the facts.

Scientists are normally exceedingly wary of making such projections of success about an unproven technique; they pride themselves on not getting ahead of the facts. But, perhaps caught up in the political spirit of the stem cell funding fight, they now seem to allow their advocates in Congress and in the academy to make bold and unsupported claims of cures, and at times they even make such claims themselves. Spreading such false hope misleads the patients who are suffering and distorts the public's understanding of the issues at stake in the stem cell debate.

Indeed, such distortion is evident in a recent opinion poll, prominently cited by DeGette in her announcement of the letter to President Bush. The poll, released in late April, was commissioned by the Civil Society Institute, a liberal Massachusetts think tank that recently teamed up with the American Association for the Advancement of Science to fight against the Bush stem cell policy.

Since the stem cell debate revolves around some fine distinctions and some technical details that are not widely known, any sampling of public opinion would first have to inform those being questioned about the basic facts. But the Civil Society Institute's poll began by offering interviewees the same "100 million patients" line used by Rep. DeGette and then offered a series of arguments for respondents to assess before expressing their opinion on the research. Among these arguments was the claim that "this issue is very similar to organ donation. Neither frozen embryos nor organ donors are going to live, and in both cases there is

an urgent medical need that can be filled by the donation of needed tissue. Just like organ donation, stem cell research can save millions of lives." Respondents were then further informed that "highly respected organizations such as the AMA, National Academy of Sciences, National Institutes of Health, Juvenile Diabetes Research Foundation, and Alzheimer's Association strongly support allowing research on newer stem cell lines." On the other hand, they learned that "pro-life organizations," which are apparently not so highly respected, "believe that it is immoral to destroy living human embryos, even for medical research."

Not surprisingly, after receiving this information, more than three quarters of those polled said they "supported stem cell research"—a number wildly at odds with all previous measures of public attitudes about embryo research. It is certainly hard to reach any judgment on public opinion on the basis of such gross distortions of the facts.

But aggressive PR by research advocates is not the only factor in the confusion that surrounds the stem cell debate. The Bush administration itself, in defending its funding policy, rarely enunciates the underlying reason for limitations on taxpayer funding of embryo research: that human embryos are destroyed in the course of the research, and that many Americans believe this to be the taking of human life for science. Too often, administration officials defend the policy only by arguing that the available lines are adequate for ongoing research; too rarely do they say what White House spokesman Trent Duffy told the press in response to the DeGette letter in April: "The president continues to believe strongly we should not cross a fundamental moral line by

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funding or encouraging the destruction of human embryos.”

Stepping back from the PR offensive of the last few months, a pattern of facts emerges. Embryonic stem cell research is promising but so far purely speculative; the federal government in no way limits such research in the private sector; supporters of the research believe they can obtain hundreds of millions of dollars (\$100 million at Harvard alone) in private

funding in the next few years; and yet, despite the ethical objections of a very substantial portion of the public, they insist that Congress should compel every American to support the research with tax dollars, and to make that happen they inflate the promise and distort the facts surrounding the research. Perhaps there is some truth after all to recent talk about the politicization of science.