

# nature biotechnology

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## Taking stock of spin science

In early November, the Geron Corporation (Menlo Park, CA), which specializes in anti-aging research, produced its second public relations bombshell of the year. Geron-financed researchers had succeeded in cultivating human embryonic stem cells, plucked from either discarded artificially fertilized human eggs or germ cells of aborted fetuses. This, crowed a front page story in *The New York Times*, pushed “the frontiers of biology closer to the central mystery of life” and would enable medical science to use the cells to regrow genetically damaged human tissue or create organs for implantation.

The hype this time around was subdued compared with Geron’s performance this past January, when it whipped up a media frenzy by announcing that its researchers had extended the lifespan of normal human cells using cloned telomerase. ABC’s television magazine show *20/20*, with Geron’s apparent acquiescence, treated the development as if the company had discovered the fountain of youth.

In its ardor to underscore the potential therapeutic value of human embryonic stem cell therapies—and despite thorny unresolved ethical and legal issues and very little data on immune system compatibility—Geron’s stoked-up publicity machine seems to be setting the pace for other companies involved in this promising branch of biotechnological research. Although banned by the US Congress in 1995 for government or government-funded research, experimentation with fetal tissue is unregulated in the private sector. With each new development, private companies, well aware that there is no publicly funded government competition or oversight, are becoming increasingly bold about foregoing rigorous scientific review in favor of going public with hopeful, hyped-up medical scenarios to attract research funding and pump up stock prices.

### Neither published, nor peer reviewed

Call it spin science, or science-by-press-release. Nothing could be worse for the credibility of the biotechnology industry. A week after the Geron story broke, *The New York Times* published a second front-page story in a week about human embryo stem cell research. This time a company called Advanced Cell Technology (Worcester, MA) claimed it had created a “human” embryonic stem cell by fusing a human cell with an unfertilized cow egg. This, it was suggested, at once solved both Geron’s ethical problems—since no morally or legally objectionable fetal tissue or embryonic cells were used—and the compatibility problem—since the human cells could be taken directly from the transplant or tissue-replacement candidate.

On the down side, of course, the Advanced Cell Technology results involved highly controversial and ethically charged questions about cross-species genetic manipulation—and, astonishingly, had been neither published nor peer reviewed. It just so happened that Advanced Cell Technology CEO and spokesman Michael D. West was also founder and former vice-president of Geron. “I want to be very open and level with everyone,” West explained to the *Times*. “Once the public understands how these cells can be used to treat any disease caused by loss or malfunction

of cells...the concerns will be overshadowed.” *48 Hours*, another US television magazine show, following the *Times*’ lead, promptly gave West the *20/20* treatment in a segment called “the search for immortality” that seemed oblivious to the difficult issues raised by this work.

### An abdication of responsibility

Unfortunately, this kind of dumbed-down dog-and-pony show in the press tends to erode scientific standards for the rigorous dissemination of data and

review of new research that traditionally lend public credibility to important scientific and medical advances. It also illustrates the distortions that take place when a highly politicized area of scientific research—namely, fetal tissue research—is declared off limits to government scientists and driven instead solely by unregulated market forces.

Lori Knowles, a bioethicist at the Hastings Center (Garrison, NY), deplores “companies using the press to put a spin on what they’re doing,” but believes the Congress’s 1995 ban on fetal tissue research is at fault—and has had a chilling effect on public debate. “If the point is to avoid things that are ethically wrong, why a partial ban? It’s an abdication of responsibility.”

While the ban remains in effect, companies like Geron and Advanced Cell Technology will continue to seek public approval by whatever means they can. The situation is only likely to worsen as human embryonic stem cell research becomes more sophisticated. It’s not much of a leap to imagine clinical trials and human experimentation being conducted by private US organizations in countries where informed consent is unheard of and in which US dollars are sought. The time has come for Washington to repeal the partial ban on fetal tissue research and replace it with a responsible regulatory regime, one that would ensure the public—and the scientific community—a role in determining how these technologies will be developed and subsequently commercialized.

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