Stem cell losses and gains in the US

As a protest at the newly formulated Bush administration policy on stem cell research, Netscape co-founder Jim Clark has suspended payment of $60 million of his $150 million gift to Stanford University. Faculty members are at a loss to explain why Clark, a former professor of engineering at the university, is withholding funds, in that stem cell research is not a major thrust of the university's efforts.

The university insists it will complete construction of the new Clark Center, the future home of Stanford's multidisciplinary program, Bio-X, using a gift of $60 million from an anonymous donor. Although Beth Kane, director of Bio-X operations, described Clark's announcement as a "stunning surprise and a huge loss," she says, "There isn't a shred of evidence to suggest that Stanford is rethinking the Bio-X initiative. If anything the commitment is stronger."

The Bio-X Program aims to integrate other sciences around biology; the X denotes a variable standing for many things, such as medicine, science or engineering. The Clark Center is an important part of the Bio-X Program because it will bring researchers together from three of Stanford's schools—those of Medicine, Engineering, and Humanities and Science.

The program has already awarded over $3 million in seed funding for 19 interdisciplinary projects. These include a collaboration between an ophthalmologist and a computer scientist to design an artificial synapse chip that could restore vision to the blind, and a joint molecular biology/chemical engineering project to develop a method for producing personalized cancer vaccines within a few hours. Harvey Cohen, who chairs the Bio-X Interdisciplinary Initiatives Program Committee, says that among the 89 grants submitted for seed funding, only 1 or 2 involved stem cells.

Meanwhile, scientists are continuing to raise questions about the quality of the 64 stem cell lines that can be bought with government money under the Bush policy: are the cells genetically diverse, characterized, and robust? And because most of them are nurtured with growth factors from mouse cells, will this prove problematic for use in humans? Should such cells be classified as chimeric and therefore subject to rules for the conduct of xenotransplantation?

Last month, a report by a National Academy of Sciences panel headed by Johns Hopkins University cancer expert, Bert Vogelstein, urged the government to fund the development of additional cell lines (http://books.nap.edu/html/stem_cells/report.pdf).

Doug Melton, chair of Molecular and Cellular Biology at Harvard University, has announced that he will create new stem cell lines for himself and other academic scientists from discarded embryos provided by a Boston fertility clinic. Such a move could dramatically increase the supply of cells available for study, although federal money could not be used to study them.

Melton, who has testified before Congress about stem cell research on behalf of the Juvenile Diabetes Foundation Center for Islet Transplantation at Harvard Medical School, says the idea was "not a response to President Bush's thinking and decision," and that the deal—funded by his own budget and approved by his employer, the Howard Hughes Medical Institute—was developed at least a year ago. "I wasn't confident that academic researchers could rely on companies to supply these cells, and it seemed reasonable to have an independent, noncommercial source of embryonic stem cells."

Finally, the Michael J. Fox Foundation (http://www.michaeljfox.org/html/frameset.html) announced last month that it is offering $2.2 million in research grants to scientists who can develop neuronal cell lines possessing the characteristics of dopaminergic neurons to advance the study and treatment of Parkinson disease. The source of the cell line can be adult or embryonic stem cells. The deadline for applications is 16 November.

Laura DeFrancesco, Pasadena & Marlene Cimons, Washington, DC

Prostate cancer prevention trial launched

The US National Cancer Institute (NCI) and the Southwest Oncology Group (SWOG) have launched the largest prostate cancer prevention trial to date, one of the largest cancer prevention trials ever. The Study of Selenium and Vitamin E Cancer Prevention Trial (SELECT) will enroll 32,000 men in 400 locations in the US and Canada to participate in a $120 million, 12-year, randomized placebo-controlled trial.

Based on two prior studies that showed that selenium and vitamin E individually reduced prostate cancer rates, this trial will look at prostate cancer incidence in healthy men who take the supplements together or separately over a seven-year period. The study will yield "a gold mine" of samples with well-characterized clinical and natural history, according to study coordinator Scott Lippman of Houston's M.D. Anderson Cancer Center.

Epidemiological studies dating back to the 1970s show an inverse relationship between dietary selenium and cancer rates. Larry Clark and co-workers at the University of Arizona Cancer Center showed a 60% reduction in prostate cancer incidence in men who took selenium daily for four and a half years (*JAMA* **276**,1957; 1996). In this study, as in a 1998 trial of vitamin E that together form the basis of the present trial (*J. Natl Cancer Inst.* **90**, 440; 1998), prostate cancer was not the primary endpoint, but one of a number of secondary endpoints, so even though the findings were important, study designers cannot rule out chance, says Alan Kristal, a nutritional epidemiologist at the Fred Hutchinson Cancer Center in Seattle and a member of the SWOG team. The new study will clarify this issue.

A controversial aspect of the trial is the form of selenium chosen for study. In the original Clark study, selenized yeast was given to participants. In the present trial, selenomethionine, one of many selenium metabolites in selenized yeast, will be used. According to Leslie Ford, associate director for clinical research at NCI's Division of Cancer Prevention, analysis of the material used in the Clark trial showed that selenomethionine was the most prevalent form of selenium in all lots. In addition, *in vitro* studies have shown that selenomethionine is biologically active. However, James Marshall, a co-worker of Clark's, cautions that there may be another active ingredient in selenized yeast. "It may be a good bet, but they are taking a chance," he says.

Laura DeFrancesco, Pasadena