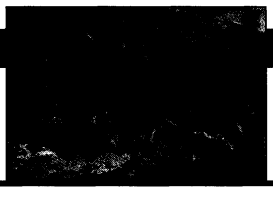

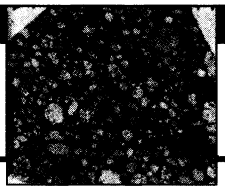

of diversity, it nevertheless will recommend that all the players—DOE and private groups as well as NSF and NASA—cooperate formally, perhaps through a joint advisory committee. "The idea is to set up a process that the agencies will buy into," says one researcher. Once the report is out, however, it will be up to White House officials to crack the whip to implement those recommendations. **–ANDREW LAWLER**

STEM CELL LINES

NIH's List of 64 Leaves Questions

The National Institutes of Health (NIH) has publicly posted the names of 10 companies or research groups in possession of 64 human embryonic stem (ES) cell lines that the U.S. government says meet its new criteria for federal funding. But many are in early stages, and scientists suspect that far fewer will prove to be of research quality.

The names were posted on 27 August following a whirlwind week of consultations, by phone and in person, with what NIH officials call "the derivers." And there are some surprises. One is a San Diego, California, company, CyThera, set up less than 2 years ago, that claims to have nine ES cell lines. Researchers there are trying to develop pancreatic islet cells for treatment of diabetes. "We're not at the point of providing materials yet for researchers," says company co-founder Jonathan Jones of Northwestern Medical School in Chicago.

Another surprise came from India, where NIH located two groups. The first is at Reliance Life Sciences in Mumbai, which makes new blood products; the other is at the National Center for Biological Sciences in Bangalore. Reliance earlier hesitated to confirm having any human ES cell lines; after NIH posted its list, a spokesperson told *Science* that it was company policy to wait until NIH had publicized the lines.

In a statement issued with the list, NIH reported that all 64 lines—which must have been derived before 9 p.m. on 9 August—"show characteristics of stem cell morphology." NIH said the lines have undergone several population doublings, and most have demonstrated all the protein markers "known to be associated with human embryonic stem cells."

But observers believe that NIH has established a low threshold of acceptability. For example, Göteberg University in Sweden is listed as having 19 lines. But researcher Peter Eriksson had earlier stated that he only had five, adding later that 12 colonies were less than 3 months old and not yet ready to be called cell lines.

NIH has promised to supplement the list with more extensive information on the scientific quality of the cells—including details on how they were cultivated, growth characteristics, and evidence of pluripotency (their ability to grow into any of the more than 200 human tissue types). But it won't be involved in accessibility issues. "Once they're posted, NIH is basically out of it in terms of brokering," says Judith Greenberg, who's in charge of setting up the stem cell registry.

The ramifications of the Bush policy will likely become clearer at an all-day hearing on 5 September called by Senator Edward M. Kennedy (D–MA), chair of the Senate Committee on Health, Education, Labor and Pensions. But so far, the biomedical community seems happy with how NIH has handled the issue. "I have to say I think they've done a wonderful job," says Tony Mazzaschi of the Association of American Medical Colleges.

–CONSTANCE HOLDEN

NUMBER OF EXISTING STEM CELL LINES REPORTED TO NIH

Source	number of lines
BresaGen Inc., Athens, Georgia	4
CyThera Inc., San Diego, California	9
Karolinska Institute, Stockholm, Sweden	5
Monash University, Melbourne, Australia	6
National Center for Biological Sciences, Bangalore, India	3
Reliance Life Sciences, Mumbai, India	7
Technion–Israel Institute of Technology, Haifa	4
University of California, San Francisco	2
Göteborg University, Göteborg, Sweden	19
Wisconsin Alumni Research Foundation, Madison	5

SOUCE: NIH

HUMAN SUBJECTS

Court Rebukes Hopkins For Lead Paint Study

Maryland's top appeals court last week issued a scathing indictment of a study run by an affiliate of Johns Hopkins University involving children exposed to lead-based paint in their homes. The ruling, which compared the study to the infamous Tuskegee syphilis experiments, dealt another blow to Hopkins, which is already under fire for its oversight of human subjects research. Federal officials are now investigating. Stunned health researchers say the ruling could restrict the enrollment of children in nontherapeutic studies.

The court's decision centers on a study in the mid-1990s to determine the effectiveness of different levels of lead abatement from homes in Baltimore. Two mothers in the study, run by the Kennedy Krieger Institute, filed suit, complaining that they weren't completely informed of the risks and were denied prompt information about high lead levels in their children's blood and homes. Lower courts dismissed the case, but on 16 August, the appeals court ruled that it should go to trial. The study was "inappropriate," the appeals decision says, adding that the Johns Hopkins ethics board that reviewed it "abdicated [its] responsibility" to protect subjects. This is the latest of several problems with trials at Hopkins, including the death this spring of a volunteer in an asthma study and controversy over a cancer drug trial it sponsored in India (*Science*, 10 August, p. 1024).

The lead investigator of the lead paint study, Marc Farfel, and a Kennedy Krieger official vehemently defend the research, although they note that the facts cannot be fully examined until the case goes to trial. "This was ethical [research]," says Kennedy Krieger president Gary Goldstein. The Department of Health and Human Services' Office for Human Research Protections is now investigating the study, says HHS spokesperson Bill Heal.

Kennedy Krieger launched the "Repair and Maintenance Study" with a $200,000 grant from the Environmental Protection Agency. The study aimed to evaluate cheaper alternatives to the $20,000 per house needed for full lead abatement. The investigators helped landlords apply for grants and loans for lead paint cleanup strategies. Some of the 108 homes were occupied

when the study began; in other cases, landlords were encouraged to rent to families with young children. Investigators then measured lead levels in dust and children's blood over 2 years. Families were offered incentives to participate, such as T-shirts and $15 payments for answering questionnaires. Johns Hopkins' institutional review board (IRB) approved the protocol.

The suit claims that researchers waited 9 months to share test results showing that one child had developed blood levels of 32 micrograms per deciliter (μg/dL)—"highly elevated," according to Centers for Disease Control and Prevention standards, which say that 9 μg/dL is safe. Baltimore lawyer Kenneth Strong, who represents the mother, says that the child now has learning disabilities. The second mother charges that she was given test results showing that lead dust levels in her home were low, but not results collected by a different, experimental method showing higher levels. Her child had blood lead levels as high as 21 μg/dL.

Although a lower court found that Kennedy Krieger had no legal obligation to notify the families of the test results, the appeals court disagreed. It also faulted the strategy because it "enticed" families to "potentially lead-tainted housing." "It can be argued that the researchers intended that the children be the canaries in the mines," wrote Judge Dale R. Cathell and five other judges. (A seventh judge dissented from the opinion, but agreed that the case should go to trial.) The research, they conclude, "presents similar problems as those in the Tuskegee" study in which African-American syphilis patients were monitored but not offered treatment.

Too risky. Studying families' exposure to lead paint in old homes was "inappropriate," a Maryland court says.

CREDITS: (TOP TO BOTTOM) SAM KITTNER; ARTHUR S. AUBRY/PHOTODISC

The decision finds that Hopkins' IRB advised the researchers to tweak the design to get it approved and that IRBs in general "are not designed to be sufficiently objective." In Maryland, the decision says, parents should not be allowed to let their children participate in "nontherapeutic research ... in which there is any risk of injury or damage" to health.

The appeals court's scathing indictment surprised other lead-poisoning researchers, who say they have conducted similar studies on lead abatement and that this study was important. The neurotoxic metal is "already out there in hundreds of thousands of older homes," notes Bruce Lanphear of the University of Cincinnati. "We don't really have any other system" to study cleanup techniques, Lanphear says.

Pioneering lead researcher Herbert Needleman of the University of Pittsburgh acknowledges, however, that with such environmental studies "the ethical issues are complex." The key element, he says, is the study's "stopping point" at which study subjects are advised to visit a doctor if their lead level is elevated. University of Pennsylvania bioethicist Arthur Caplan agrees: "You better be watching day to day." He agrees with the court's conclusion that the study's informed consent form didn't fully lay out the risks, although he thinks the comparison to Tuskegee goes too far.

Even more critical than the rhetoric, researchers say, is the court's conclusion that children should not be included in trials that don't have a therapeutic benefit. That troubles University of Kansas Medical Center bioethicist Mary Faith Marshall, who believes that "the court didn't quite get how research works." She argues that nontherapeutic research can have indirect benefits, and that the U.S. human subject protections system seeks to balance all risks and benefits. "The court is just wrong," adds Mark Barnes, a health law attorney at Proskauer Rose in New York City. However, the decision is "binding law" for institutions in Maryland, Barnes says. Indeed, Johns Hopkins is now "looking at the opinion very carefully" to see if it will impact ongoing and future studies that might fall into this category, says spokesperson Joann Rodgers.

Ironically, Caplan notes, this restrictive ruling comes just as children's health advocates and federal agencies are encouraging researchers to include more children in drug trials and study childhood environmental risks. It also comes at a time when concerns about patient protections are at an all-time high, Caplan says: It's "another arrow" launched at the struggling IRB ethics review system. –JOCELYN KAISER

ScienceScope

Klausner Staying Put Despite widely circulating rumors that he is leaving, Richard Klausner says he plans to remain at the helm of the $3.8 billion National Cancer Institute (NCI)—for now. "I am not job hunting, and I'm very happy at NCI," the director of the National Institutes of Health's (NIH's) largest institute told *Science* last week. He explained that he "looked at a job this summer and then decided against it," which he says stirred up the rumor mill. "At some point, I suspect I will move on," added Klausner, but "I have no time frame in mind."

Klausner also denied reports that he's not getting along with the Department of Health and Human Services (HHS) or its secretary, Tommy Thompson. A clampdown by HHS on large salary increases for administrative personnel, concentrated at NCI, has not affected Klausner's rapport with the secretary. "The only pressure I've gotten from Tommy Thompson," Klausner says, "is to please not consider leaving."

Klausner spoke as Thompson was spending 4 days last week touring NIH, where he visited the new vaccine research center and gave blood, among other stops.

Pedal to the Metal It is time to rethink a government-industry partnership to develop superefficient cars, according to a new National Academy of Sciences report. Although the 7-year-old Partnership for a New Generation of Vehicles (PNGV) has made great strides in developing technologies to boost gas mileage, the program won't meet its original goal of tripling the fuel efficiency of family sedans by 2004, according to an annual review led by retired Allied Signal engineer Craig Marks. In addition, the new technologies—from fuel cells to hybrid electric-gas powertrains—face cost, pollution, and technical problems that limit their commercial appeal, the panel concluded.

The government and the car industry —which together pump more than $1 billion a year into PNGV—should rewrite the program's specific goals, the panel recommended, particularly in light of the growing popularity of light trucks and sport utility vehicles, which were not a major focus of the original plan (*Science*, 30 July 1999, p. 680).

Secretary of Energy Spencer Abraham, whose department is PNGV's biggest government backer at more than $100 million a year, welcomed the advice. He's pushing to have a revised PNGV plan in place by next year.