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**Feds get corporate donations for research**

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WASHINGTON -- Government scientists are launching a major project to uncover elusive genetic variations that make people vulnerable to some of the most common diseases, and then determine what in the environment - pollution, behavior, diet - pushes those people into full-blown illness.

The surprise: The National Institutes of Health is trying to raise \$60 million from drug companies to help do the work, saying an industry-government partnership is crucial to speed research.

First to donate is the world's largest drug maker, Pfizer Inc., followed by a leading producer of gene-detection equipment, Affymetrix Inc.

Gene discoveries won't become the property of the companies who invest, but instead will be available to all scientists, NIH Director Elias Zerhouni stressed in announcing the project Wednesday.

The NIH hopes to put \$68 million of its own into the three-year project, if Congress approves a \$40 million increase over already planned spending.

"This is not just an academic exercise by a bunch of nerdy gene-hunters," said Dr. Francis Collins, the NIH's genetics chief, who said science is poised for "an avalanche" of potentially lifesaving discoveries.

Most diseases aren't caused by a big mutation in a single gene, but by subtle differences in multiple genes, plus environmental influences. Yet only last year was research completed that allows scientists to begin a systematic hunt for inherited patterns of DNA variation that make individuals susceptible to - or sometimes protected from - common illnesses such as heart disease, asthma or Alzheimer's.

Those tiny variations in the genetic code are called SNPs, pronounced "snips," for single-nucleotide polymorphisms. The goal: Compare the DNA of 1,000 people with an illness with the DNA of 1,000 similar but healthy people, to see which SNPs play a role.

They're fairly simple studies, each costing around \$3 million - and NIH already has in hand DNA from thousands of patients to be tested. (Non-NIH scientists can apply to have their own DNA caches analyzed, for free, under the industry-financed project.)

Pfizer announced Wednesday it was giving NIH \$5 million to set up the Genetic Association Information Network, and then would pay for five of the studies, \$15 million worth. Affymetrix pledged to perform an additional two studies.

Overall, the Foundation for the National Institutes of Health, a group established by Congress

to encourage such private-public partnerships, seeks to raise \$60 million in industry funding for additional studies. The first diseases chosen for the gene analysis will be announced this summer.

What does Pfizer receive from the investment? No patents on discoveries, insisted company vice president Martin Mackay.

But such discoveries could "make a profound difference in the way we treat disease," he said. "We can't do it all ourselves."

Gene-testing is just part of the project. As Collins puts it, "Genes load the gun, environment pulls the trigger."

So, as part of a separate Genes and Environment Initiative, NIH will study what gene-environment interactions are important by developing wearable sensors that measure people's exposure to such things as pesticides, air pollution, or metals in foods or the environment - or other controllable factors such as physical activity. Eventually, those sensors also may simultaneously measure how the body reacts to certain exposures.

Zerhouni said lawmakers should not consider the industry donations a replacement for taxpayer-funded research.

However, President Bush has proposed no raise for the NIH for next year, prompting cuts in some programs to allow increases for others. One cut is triggering special criticism, the elimination of a major children's health study, including what gene-environment reactions put youngsters at risk. Zerhouni denied Wednesday that the National Children's Study was sacrificed for more gene-testing money. But John Porter, an influential former congressman now with the Foundation for the NIH, said there are strong efforts on Capitol Hill to revive the children's research.

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On the Net:

National Institutes of Health: <http://www.nih.gov>

Foundation for the NIH.: <http://www.fnih.org>