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Biotech Critic Considers Darker Questions of Science

By Tom Gorman

Some people look at San Diego's contributions to biotechnology and are awe-struck by the industry, its players, their accomplishments and their vision for the future.

But that same tableau frightens biotech critic Jeremy Rifkin, co-author of the 1977 what-if book, "Who Should Play God?" and head of the Washington-based Foundation on Emerging Technologies, which urges detailed and exhaustive public scrutiny of where biotechnology is headed.

In his book, Rifkin predicted, among other things, test-tube babies and crossing genes between different species. "Scientists came back to us and said we were alarmists, that we wouldn't be able to do those things for 1,000 years. And most of them were done in 10 years," he said.

Rifkin cautiously embraces some of the benefits of biotechnology-of people being able, for instance, to screen themselves to determine if they are susceptible to a particular disease, and to then take appropriate preventive measures.

"I can see us, within five or 10 years, being at a point where we'll have increasing access to human gene screening, so we can then launch a personal and public preventive health campaign," Rifkin said. "We can use that genetic information to change nutritional habits, our lifestyles, our exercise habits, so that we don't trigger those genetic predispositions to disease."

But Rifkin also is bracing for the darker consequences of biotechnology.

"The technology of human gene engineering is running way ahead of our developing the appropriate social, political and ethical response to it. We need to put on the brakes long enough to pause and develop regulatory standards that consider ethics and the environment and the implications of what is the most potentially dangerous technology in history."

He and others, for instance, wonder why a few large agri-companies are synthesizing artificial hormones so cows can produce more milk at a time when there is no need to boost milk production-especially at the expense of the rural farming family.

He discusses the prospect of patented farm animals, genetically engineered to produce, say, leaner meat, and how the farmer will have to pay a royalty for each offspring.

He talks of new biomedicines gone bad because of laboratory shortcuts to reduce manufacturing costs-shortcuts that result in genetically-mutated medicines.

He cites new-age medicines that are more costly than traditional ones-and in some cases shown to be no more effective than the old ones.

He worries that employers and others may use genetic screening as a high-tech form of discrimination, by not recruiting a person for a management-track career, for instance, because he shows a predisposition to Alzheimer's disease, or not hiring a laborer in a chemical job because of a predisposition to cancer.

Abuses in genetic screening, Rifkin says, will lead to such high-tech and far-reaching discrimination that the civil rights movement will pale by comparison.

Mostly, Rifkin wonders about the long-term repercussions of toying with human genes.

"This technology is more powerful and more intimate than any technology in history. It's a tool to change the genetic blueprints of living creatures. Scientists have the power to tinker, engineer and rearrange the blueprints of the map of life.

"The question is, who among us do we trust with this, to rearrange millions of years of evolution?"

"Scientists say they're just discussing one small part of gene manipulation, but every manipulation means a scientist has taken it upon himself to change evolution in a very dramatic way. This is playing God on a level that's unprecedented."