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# U.S. Bioethics Commission Gives Green Light to Synthetic Biology

By **ANDREW POLLACK**

The president's bioethics commission says there is no need to temporarily halt research or to impose new regulations on the controversial new field known as synthetic biology.

In a report being issued Thursday, the [Presidential Commission for the Study of Bioethical Issues](#) says that at present the technology — which involves creating novel organisms through the synthesis and manipulation of DNA — poses few risks because it is still in its infancy.

Instead, the report recommends self-regulation by synthetic biologists. It also says the president's office should better coordinate government agencies that oversee different aspects of the field.

"The commission thinks it imprudent either to declare a moratorium on synthetic biology until all risks can be determined and mitigated, or to simply 'let science rip,' regardless of the likely risks," the report says. "The Commission instead proposes a middle ground — an ongoing system of prudent vigilance that carefully monitors, identifies and mitigates potential and realized harms over time."

Synthetic biology uses genetic engineering and other techniques to create novel organisms tailored for particular tasks. The idea is that by synthesizing DNA and by combining standard genetic building blocks, engineers can efficiently design a biological machine much as they might design a bridge or computer chip.

Synthetic biology is already being used to engineer micro-organisms to manufacture a [malaria](#) drug and produce [biofuels](#), so it might form the basis of a huge new bio-economy that could partly supplant petroleum-based industry.

But the promise is accompanied by the risks of "bio-terror" and "bio-error" — that the same techniques, either nefariously or inadvertently, might create organisms that would harm public health or the environment.

[President Obama](#) asked the commission, which he created about a year ago, to examine

synthetic biology as its first order of business in May, right after the scientist [J. Craig Venter](#) announced that he and his colleagues had created what might be called the first “synthetic organism.” Dr. Venter’s team had manufactured the complete genome of a bacterium from chemicals and transplanted it into another closely related type of bacterium, where it took over control of the organism.

While the feat raised concerns that man was now playing God, the commission’s report says that Dr. Venter’s team did not create life, since it had duplicated a known genome and transplanted into an already living cell. Nor, the report says, are truly novel creatures on the immediate horizon.

“Here’s something significant in science, but there’s no cause for fear and dread about what is going to happen immediately next,” Amy Gutmann, the chairwoman of the commission, said in an interview Wednesday.

Dr. Gutmann, who is president of the [University of Pennsylvania](#), said the 13 scientists, ethicists and public policy experts who make up the commission had unanimously endorsed the report’s 18 recommendations. Among those recommendations was that training in ethics be required for researchers in the field.

Some critics of synthetic biology lambasted the recommendations. “This is a disappointingly empty and timid little report,” Jim Thomas of the [ETC Group](#), a Canadian environmental organization, said in a statement. Mr. Thomas testified at the first of three public meetings the bioethics commission had on synthetic biology.

More than 50 environmental groups from around the world signed an open letter to federal officials calling for a moratorium on the release and commercial use of synthetic organisms until the risks are understood and regulations developed.

“The commission’s lack of attention to the ecological harms posed by synthetic biology is irresponsible and dangerous,” the letter said, adding that “self-regulation amounts to no regulation.”

Brent Erickson, executive vice president of the [Biotechnology Industry Organization](#), which represents companies that use the technology, called the report “reasonable, well balanced and insightful.” He said the commission had recognized that synthetic biology “is not something radically new and threatening, but is part of an ongoing continuum of biotech innovation that has resulted in safe and successful products and public benefits for the past 15 or 20 years.”

Drew Endy, a Stanford engineer who is considered one of the most influential researchers in synthetic biology, said he welcomed leadership from the executive branch of the government,

which he said was needed for the field to thrive. He also praised a recommendation in the report asking the government to evaluate whether patents might be hindering progress.

Dr. Venter, whose work precipitated the commission's study, also praised the recommendations as "wise, warranted and restrained, which will help to ensure that this young field of research will flourish in a positive manner."