

# The Washington Post

## Presidential commission urges caution on 'synthetic biology'

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The emerging field of "synthetic biology" holds great promise for producing new medicines, cleaning up the environment, and providing alternative energy sources and other benefits, but the U.S. government needs to take precautions to ensure that laboratory-made microbes do not cause unexpected catastrophes, the [Presidential Commission for the Study of Bioethical Issues](#) has concluded in its first report (read the [executive summary](#)).

The [188-page report](#), released Thursday, was praised by advocates of the technology, independent bioethicists and others. But it was criticized by those seeking tougher protections and tighter government oversight of the controversial field. [President Obama](#) requested the study after the [Rockville-based J. Craig Venter Institute](#) had announced in May the creation of the first "[synthetic cell](#)."

"Synthetic biology, as exemplified by the creation of the first synthetic genome to be injected into a living cell, is a significant breakthrough that holds out great promise," said Amy Gutmann, president of the University of Pennsylvania and head of the 13-member commission. "We have an unprecedented opportunity to recommend to the government that its oversight be ongoing but that it not overreact with a moratorium that would stifle scientific progress."

The report provides evidence that Obama's bioethical advisers plan to take a different approach than their predecessors. President [George W. Bush's Council on Bioethics](#) issued reports addressing a variety of contentious issues - human embryonic stem cells, cloning, animal-human hybrids, aging and memory - that often offered a philosophical, often critical appraisal of emerging technologies. Critics said the council was providing support for a more ideological approach to science.

The new panel, which has three commissioners who are federal officials, was tasked with providing more practical and less ideological or esoteric advice about government regulation.

"It's a complete 180 from the prior council," said Arthur Caplan, a University of Pennsylvania bioethicist who testified before the commission. "It sees its mission, and says so very overtly, as getting involved in practical policy guidance. We're not getting the philosophical treatise treatment

from this council."

Synthetic biology involves creating bacteria, viruses, algae and other organisms in a lab for potential applications. Scientists hope such creations will be used for a range of purposes, such as to produce new medicines, eat toxic waste and churn out new fuels, plastics and other products.

But the field has also generated concerns, including fears that scientists may inadvertently create organisms that could cause new diseases or devastate the environment by upsetting delicate ecosystems or destroying wildlife. Some are also worried that terrorists will use the technology to create new biological weapons. Such concerns have been heightened by the burgeoning "do-it-yourself" community of amateur biologists tinkering with genes. Some ethicists and theologians have also questioned whether the field raises moral issues by potentially creating entirely new forms of life or hybrids.

Venter, a prominent and pioneering geneticist, focused attention on the field in May when scientists working at his institute announced that they had created a cell controlled entirely by genetic instructions synthesized in the laboratory.

In the report released Thursday, which was prepared based on three public hearings in Washington, Philadelphia and Atlanta, the commission concludes that although Venter's work represented a significant advance, it "does not amount to creating life as either a scientific or a moral matter" and that the field remains "in the early stages," with any dangers far in the future.

The commission issued 18 recommendations designed to "minimize the risks and foster innovation." They include coordinating regulation of the field; reviewing federal funding within 18 months; making sure any entities released into the environment include safeguards, such as "suicide genes," that would prevent their inadvertent spread; and fostering the creation of "a biology equivalent to FactCheck.org, in which a private group would track statements about the science and offer an independent view of the truth of such claims."

The report was praised by several bioethicists and others as striking the proper balance. BIO, a trade group representing the industry, said it was "well reasoned, balanced and thoughtful." In a statement, Venter called the report's recommendations "wise, warranted and restrained, which will help to ensure that this young field of research will flourish in a positive manner."

A spokesman at the White House Office of Science and Technology Policy called the report a "thoughtful analysis" and said it concluded that "the main moral issue focuses on weighing the risks and benefits of these new technologies."

"We appreciate the commission's main conclusion that synthetic biology does not currently pose novel safety or ethical issues that require the creation of new oversight bodies," the spokesman said.

Others were critical. [Allison A. Snow](#), a professor of evolution, ecology and organismal biology at Ohio State University, said the report "sends a mixed message that is too watered down." A coalition of more than 30 environmental groups sent a [joint letter](#) to the commission criticizing the failure to call for tougher precautions, including a moratorium until scientists prove such organisms are safe.

"Our main concern is the potential environmental impacts of synthetic biology," said Eric Hoffman of [Friends of the Earth](#), one of the groups that sent the letter. "We think it is a potentially very dangerous technology."

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