

## Has the war on synthetic biology already begun?

I've only been with the Genetic Literacy Project for less than two years, yet I find the war over genetically modified organisms utterly exhausting. Imagine how scientists who have spent their entire careers trying to do their jobs while from inside a miasma of toxic rhetoric and public suspicion must feel.

The battle to ground policy discussions about genetically modified crops in empirical data rather than fear and disinformation may yet be 'won,' but it's hard not to see the war itself as a loss — a loss for science's public presence, for science communication, and for rational discourse. So how do we prevent another destructive war as synthetic biology, the next wave of biotech, comes of age?

Synthetic biology (synbio) has [a definition problem](#), but what sets it apart from other biotechnologies — and genetic modification in particular — is that it involves the creation of new genetic material, new organisms, new biological building blocks. Genetic modification, by contrast, mostly rearranges existing components (although it can lead to the creation of novel proteins). If GMOs are remixes of nature's greatest hits, then the creations of synbio are entirely new compositions.

It's understandable why this might worry people. Unfortunately, it appears that science and industry are, again, on a different page from some members of the public when it comes to synbio.

Grist's Nathaniel Johnson — whom [the GLP has](#) noted for stepping in and stepping up Grist's previously lopsided coverage on GMOs with an earnest and thorough series of articles — recently [broached the subject of synbio as a "new discipline"](#)—meaning, we can assume, that it's now cracking the public consciousness. Meanwhile, a blog post at Nature begins by noting that synthetic biology "emerged more than 15 years ago."

The actual age of synthetic biology as a discipline doesn't matter, but the discrepancy in how it is perceived does. Coincidentally, both blog posts are concerned with the public perception of synbio and how the discipline can avoid generating a new culture war. It may already have, though.

Johnson chronicles [the New York Times's recent revelation](#) that some soap companies were replacing the palm oil in their products with a substitute made genetically modified algae—an issue addressed last week by GLP's [XiaoZhi Lim](#) in a thoughtful [article](#). Johnson writes:

In the *New York Times* piece, written by Stephanie Strom, the companies that were trying out synthetic-biology-palm-oil replacements responded furtively to inquiries — and the activists who had brought their work to light acted as if it were a shameful secret.

The tenor of the NYT piece is worrisome enough, but it's Johnson's personal experience that chills my science advocate's heart:

Here's what happened: A few months ago, a group of synthetic-biology startups asked me to give a talk at a conference, addressing these fears of a public backlash. Their goal, as I understood it, was to learn from the debacle of the GMO debate, and so I prepared a talk based on what I've learned on that topic. (I didn't take any fee or money.)

I intended to say the following: The key to the GMO argument — and now, by extension, the synthetic-biology discussion — is transparency.

[...]

This is still what I believe. But I never ended up giving that speech. Part of the reason was purely personal, but part involved complaints from activists, who labelled me as an “industry advisor,” on suspicion of fraternizing with the enemy. (You can read the rest of that crazy story [here](#), along with the talk I prepared.)

My experience suggests that many activists' minds are made up before the debate has even taken place: They see synthetic biology as an evil that must be stopped, not a potential part of the solution.

So while biologist Jim Philp, the lead author of the Organization for Economic Cooperation and Development's [Emerging Policy Issues in Synthetic Biology](#) report tells Nature that a public debate needs to start now to avoid a PR debacle like that surrounding GMOs, one can't help but wonder if it's not already too late.

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#### **Additional Resources:**

- [“Synthetic Biology Products May Increasingly Fall Outside Regulatory System, Study Says,”](#) Pat Rizzuto | Bloomberg BNA
- [“Ask All Your Questions About Synthetic Biology!”](#) Ria Misra | io9
- [“Culture wars threaten synthetic biology's future: Debate on open source versus closed door,”](#) Kenrick Vezina | Genetic Literacy Project