

Biologically Engineered Biofuels

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Problems

- Lack of renewable energy sources
- Rising greenhouse gas emissions and global warming

Proposed solutions

- Can use genetically engineered algae, bacteria, or plants
- Produce various types of fuels such as
 - Biodiesel
 - Ethanol
 - Jet fuels
 - Hydrogen
 - Other hydrocarbons that can be more easily blended into existing fuels than ethanol and other current options

Issues

- Which is the most important goal/can we achieve both
 - Emissions
 - Energy Independence
- Cost/Efficiency
 - Want to maximize output vs. input
 - Has to be sufficiently better than current options to justify likely increase in costs

Engineering

- Which organisms
- Which pathways
- What types of DNA technology to use
- Level/completeness of genetic modification
 - Complete genome re-engineering
 - Small modifications/transgenics

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