

On Designing and Testing Technical Safeguards for Gene Drives and Industrial Chassis

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Regulators and civil society have expressed concern over the environmental implications of advanced biotechnologies. The first part of this talk will describe safeguards now under development that are intended to address environmental concerns. Technologists developing gene drives to limit vector borne diseases and suppress invasive species are also developing mechanisms to mitigate potential adverse environmental effects. Safeguards such as daisy drives, precision drives and under-dominant drives are intended to localize effects. Technologists developing advanced biological chassis for materials production are also developing mechanisms to limit fitness and reduce lateral gene flow in the event of inadvertent release. The second part of this talk will treat implications for national regulations and international conventions, with analysis of the status of debates within the EU, US and UN Convention on Biological Diversity and with discussion of how engagement with regulators, insurers and civil society may help in development of scientifically sound tests of safeguards.