

Ethical, Economical, Environmental, Legal and Social issues of Synthetic Biology (for High Schools)

1. I consent			
		Response Percent	Response Count
I Consent	<div><div></div></div>	100.0%	49
	answered question		49
	skipped question		0


2. Have you ever heard of synthetic biology?			
		Response Percent	Response Count
Yes	<div><div></div></div>	39.6%	19
No	<div><div></div></div>	62.5%	30
	Comment		0
	answered question		48
	skipped question		1


3. What are your thoughts on synthetic biology?			Response Count
	<div><div></div></div>		41
	answered question		41
	skipped question		8


4. What are your thoughts on the examples given on page 4?			Response Count
	<div><div></div></div>		39
	answered question		39
	skipped question		10


5. Do you think continuing this research is worth while?			
		Response Percent	Response Count
Yes	<div><div></div></div>	82.1%	32
No	<div><div></div></div>	2.6%	1
Don't Know	<div><div></div></div>	5.1%	2
<div><div></div></div> Comment	<div><div></div></div>	10.3%	4
	answered question		39
	skipped question		10

6. Do you think this research is problematic?			
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	Response Count
 view	39
answered question	39
skipped question	10


7. What potential products do you envision coming from synthetic biology?		
	Response Count	
 view	38	
answered question	38	
skipped question	11	


8. Another example of synthetic biology would be designing a biosensor that detects arsenic levels in water and emits a pH signal in response. The device could be used to test whether drinking water is safe and meets the guidelines set out by the World Health Organization. However, the complexity of living systems and their interactions with nature mean that no synthetically produced biosensor will always perform as expected. Rate your level of concern on the following issues related to the biosensors. (1 least concerned to 10 most concerned)											
	1	2	3	4	5	6	7	8	9	10	Response Count
Biosensors disrupting species native to the area	0.0% (0)	0.0% (0)	0.0% (0)	5.3% (2)	13.2% (5)	10.5% (4)	23.7% (9)	21.1% (8)	7.9% (3)	18.4% (7)	38
Biosensors negatively impacting humans	0.0% (0)	5.3% (2)	10.5% (4)	2.6% (1)	5.3% (2)	2.6% (1)	7.9% (3)	23.7% (9)	15.8% (6)	26.3% (10)	38
Biosensors that successfully colonize an area but evolve beyond our control	2.6% (1)	7.9% (3)	2.6% (1)	7.9% (3)	2.6% (1)	7.9% (3)	10.5% (4)	15.8% (6)	13.2% (5)	28.9% (11)	38
Biosensors that disrupt the local environment eg water, vegetation	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	5.3% (2)	7.9% (3)	21.1% (8)	26.3% (10)	15.8% (6)	23.7% (9)	38
Comment										<div> view</div>	3
	answered question										38
	skipped question										11


9. Do you think synthetic biology should be regulated?			
		Response Percent	Response Count
Yes	<div><div></div></div>	86.8%	33
No	<div><div></div></div>	10.5%	4
Don't Know	<div><div></div></div>	2.6%	1
Comment  view			20
	answered question		38
	skipped question		11

10. If yes then who should regulate it?		
	Response Percent	Response Count


Provincial/state government	<div><div></div></div>	28.9%	11
Federal government	<div><div></div></div>	50.0%	19
International organization	<div><div></div></div>	60.5%	23
Civilian organization	<div><div></div></div>	10.5%	4
Military	<div><div></div></div>	2.6%	1
Other	<div><div></div></div>	21.1%	8
Comment  view			10
		answered question	38
		skipped question	11


11. Should humans be allowed to combine the genes of different species to make a genome?			
		Response Percent	Response Count
Yes	<div><div></div></div>	57.9%	22
No	<div><div></div></div>	15.8%	6
Don't Know	<div><div></div></div>	26.3%	10
Comment  view			27
		answered question	38
		skipped question	11


12. Do you think that advancements in synthetic biology are worth the potential risk to human health?			
		Response Percent	Response Count
Yes	<div><div></div></div>	60.5%	23
No	<div><div></div></div>	28.9%	11
Don't Know	<div><div></div></div>	10.5%	4
Comment  view			9
		answered question	38
		skipped question	11


13. Do you believe synthetic biology should be used for non-therapeutic human enhancement?			
		Response Percent	Response Count
Yes	<div><div></div></div>	16.2%	6
No	<div><div></div></div>	67.6%	25
Don't Know	<div><div></div></div>	16.2%	6
Other (please specify)  view			4
		answered question	37
		skipped question	12


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14. What issues or problems do you think research in synthetic biology could/should address in high income countries?			Response Count
			 view 37
	answered question		37
	skipped question		12


15. What issues or problems do you think research in synthetic biology could/should address in low income countries?			Response Count
			 view 37
	answered question		37
	skipped question		12


16. What products would you like to see come from synthetic biology?			Response Count
			 view 37
	answered question		37
	skipped question		12

17. How can we ensure that beneficial products are made available to low income countries?			Response Count
			 view 37
	answered question		37
	skipped question		12

18. Should synthetic biology be used to develop military applications?			
		Response Percent	Response Count
Yes	<div><div></div></div>	2.7%	1
No	<div><div></div></div>	29.7%	11
Don't Know	<div><div></div></div>	67.6%	25
If Yes give examples here if No say why		 view	11
	answered question		37
	skipped question		12

19. Do you believe a high school curriculum should include an unit on synthetic biology?			Response Count
Yes	<div><div></div></div>	67.6%	25
	<div><div></div></div>		

No	<div><div></div></div>	24.3%	9
Don't Know	<div><div></div></div>	8.1%	3
		Comment  view	22
		answered question	37
		skipped question	12

20. What is your educational level?			
		Response Percent	Response Count
Grade 10	<div><div></div></div>	2.7%	1
Grade 11	<div><div></div></div>	83.8%	31
Grade 12	<div><div></div></div>	13.5%	5
		Comment  view	6
		answered question	37
		skipped question	12

21. Are you in the international baccalaureate program?			
		Response Percent	Response Count
Yes	<div><div></div></div>	21.6%	8
No	<div><div></div></div>	78.4%	29
		answered question	37
		skipped question	12

22. Are you in an advanced placement program?			
		Response Percent	Response Count
Yes	<div><div></div></div>	32.4%	12
No	<div><div></div></div>	67.6%	25
		answered question	37
		skipped question	12

23. Gender? (optional but preferable if you answer) write N/A if you do not want to answer it			
		Response Percent	Response Count
Male	<div><div></div></div>	43.2%	16
Female	<div><div></div></div>	56.8%	21
N/A		0.0%	0
Comment		0.0%	0
		answered question	37
		skipped question	12

24. Ethnicity? (optional but preferable if you answer) write N/A if you do not want to answer it				
			Response Percent	Response Count
Yes		<div><div></div></div>	80.6%	29
No		<div><div></div></div>	2.8%	1
N/A		<div><div></div></div>	16.7%	6
Comment			<div><div></div>view</div>	30
		answered question		36
		skipped question		13

25. Faith? (optional but preferable if you answer) write N/A if you do not want to answer it				
			Response Count	
			<div><div></div>view</div>	36
		answered question		36
		skipped question		13