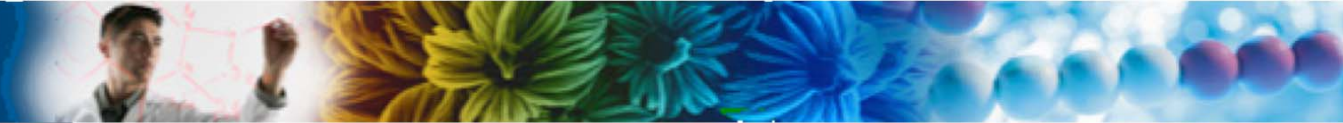




Woodrow Wilson
International
Center
for Scholars



Peter D
HART
RESEARCH
ASSOCIATES

Awareness And Perceptions Of Nanotechnology And Synthetic Biology

Key findings from a survey among 1,003 adults nationwide
Conducted August 20-25, 2008

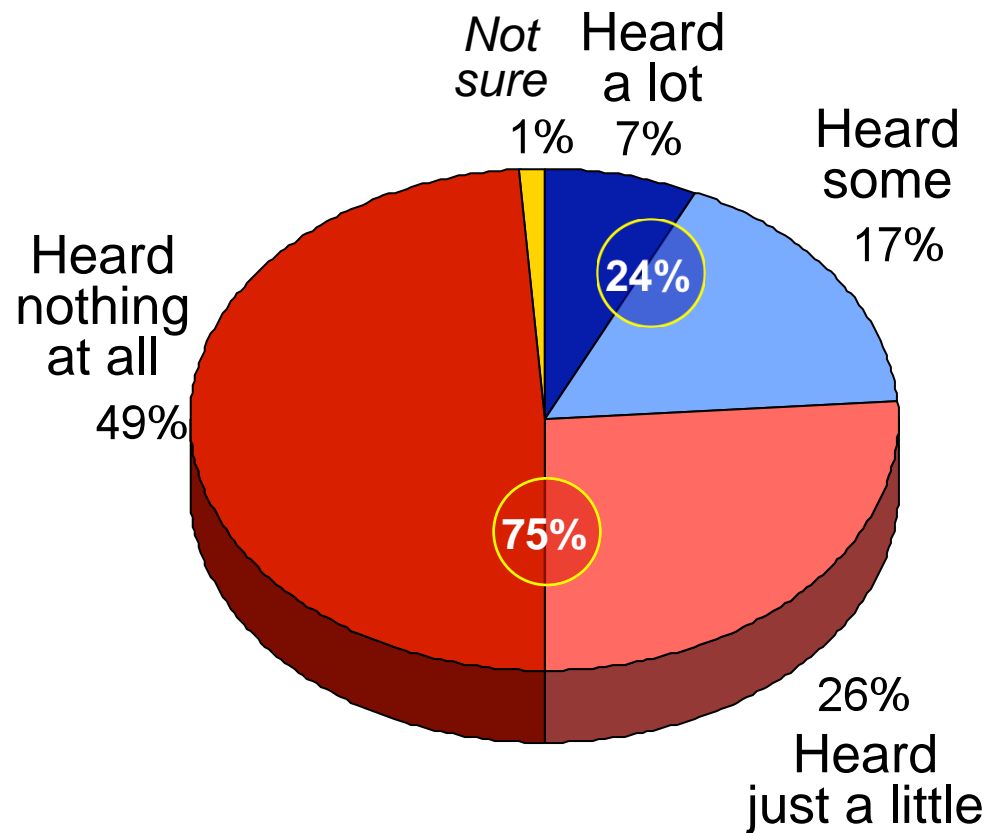
for

Project on Emerging Nanotechnologies
The Woodrow Wilson International Center for Scholars

Margin of error = ± 3.09 percentage points among all adults

Public Awareness Of Nanotechnology

How much have you heard about nanotechnology?



Public Awareness Of Nanotechnology

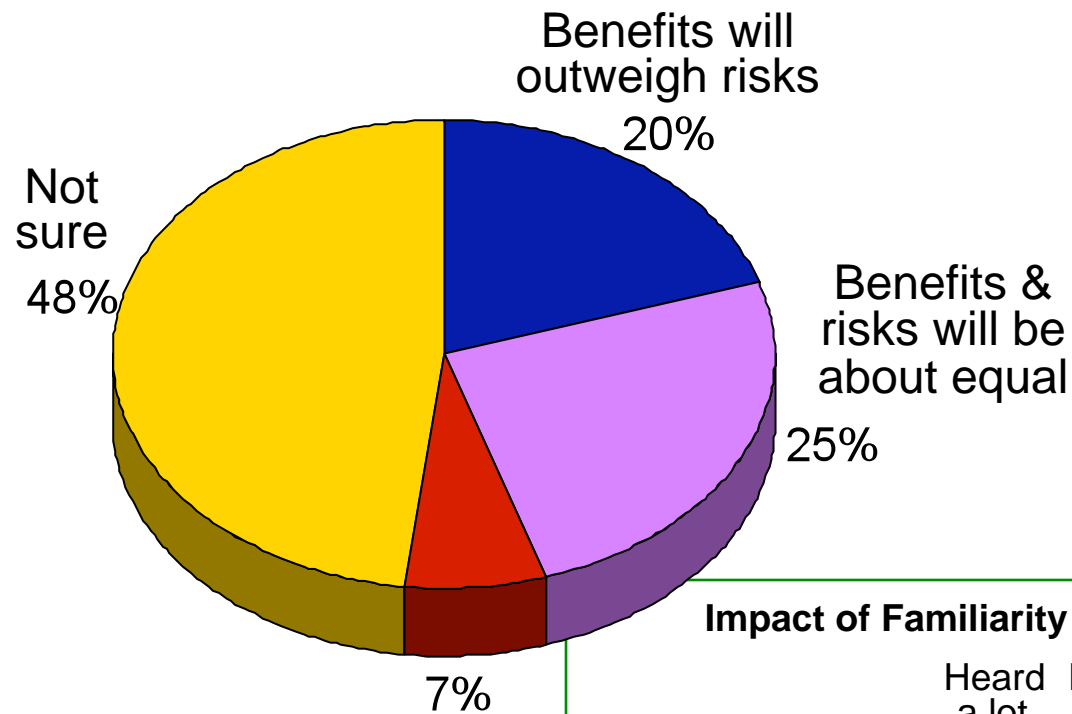
	Heard a lot/some about nanotechnology	Heard a little/nothing about nanotechnology
All adults	24%	75%
Men age 18 to 49	36%	63%
Men age 50/over	30%	69%
Women age 18 to 49	15%	85%
Women age 50/over	16%	84%
High school/less education	13%	87%
Some college/technical ed	21%	78%
College graduate/more ed	36%	64%
Income under \$30K	15%	84%
Income \$30K to \$50K	24%	75%
Income \$50K to \$75K	27%	72%
Income over \$75K	32%	68%
Whites	25%	74%
African Americans	13%	85%
Hispanics	25%	74%



Where Have You Heard About Nanotechnology?

- ✓ **Television**
- ✓ Internet
- ✓ News media, news program, newspaper
- ✓ Magazine, journal

Initial Impression Of Risks And Benefits Of Nanotechnology



Impact of Familiarity Prior to Survey

	Heard a lot	Heard some	Heard a little	Heard nothing
Benefits outweigh	49%	41%	24%	8%
Benefits/risks equal	33%	26%	29%	22%
Risks outweigh	8%	8%	8%	5%
Not sure	10%	25%	39%	65%

Initial Impression Of Risks And Benefits Of Nanotechnology

	Benefits outweigh risks	Benefits/risks equal	Risks outweigh benefits	Not sure
All adults	20%	25%	7%	48%
Men	29%	28%	6%	37%
Women	12%	23%	7%	58%
Men age 18 to 49	31%	30%	7%	32%
Men age 50/over	27%	26%	6%	41%
Women age 18 to 49	14%	29%	8%	49%
Women age 50/over	12%	16%	6%	66%
High school/less education	13%	29%	4%	54%
Some college/technical ed	17%	25%	9%	49%
College graduate/more ed	31%	22%	7%	40%
Income under \$30K	14%	28%	7%	51%
Income \$30K to \$50K	14%	34%	6%	46%
Income \$50K to \$75K	19%	32%	7%	42%
Income over \$75K	34%	22%	7%	37%



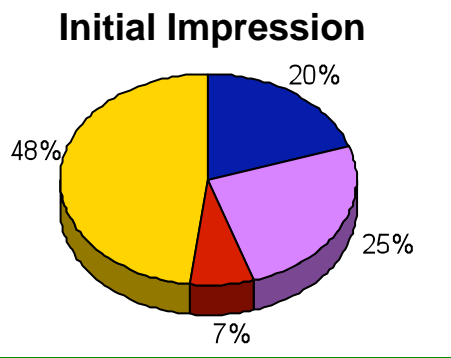
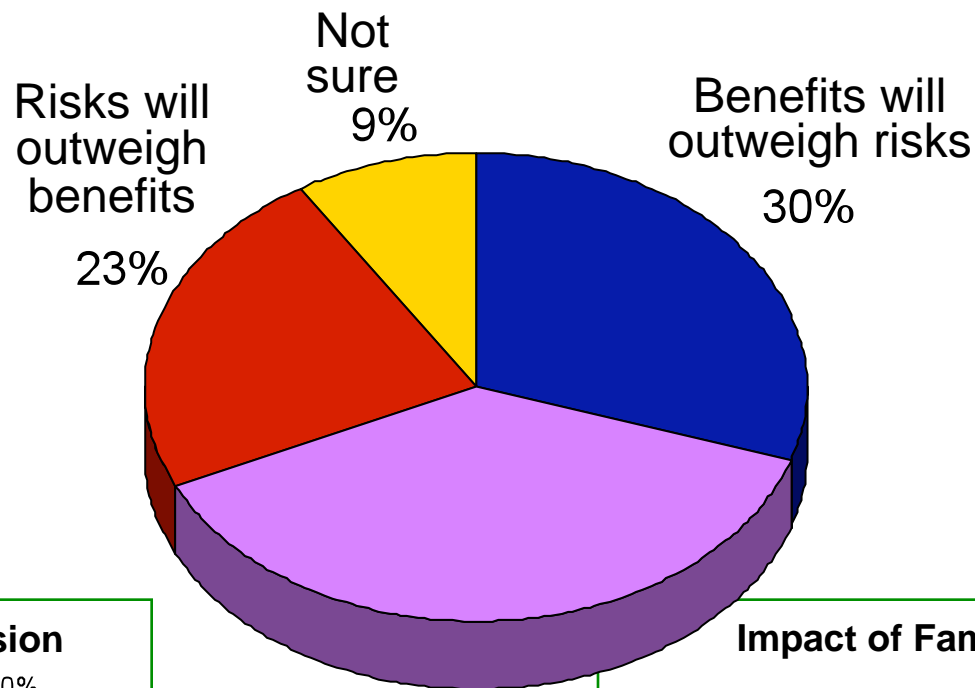
Information About Nanotechnology

Nanotechnology is the ability to measure, see, predict, and make things on the extremely small scale of atoms and molecules. Materials created at the nanoscale are called nanomaterials, and they often can be made to exhibit very different physical, chemical, and biological properties than their normal-sized counterparts.

The potential **BENEFITS** of nanotechnology include the use of nanomaterials in products to make them stronger, lighter, and more effective. Some examples are food containers that kill bacteria, stain-resistant clothing, high-performance sporting goods, faster, smaller computers, and more effective skin-care products and sunscreens. Nanotechnology also has the potential to provide new and better ways to treat disease, clean up the environment, enhance national security, and provide cheaper energy.

While there has not been conclusive research on the potential **RISKS** of nanotechnology, there are concerns that some of the same properties that make nanomaterials useful might make them harmful. It is thought that some nanomaterials may be harmful to humans if they are breathed in and might cause harm to the environment. There also are concerns that invisible, nanotechnology-based monitoring devices could pose a threat to national security and personal privacy.

Informed Impression Of Risks And Benefits Of Nanotechnology



Impact of Familiarity Prior to Survey

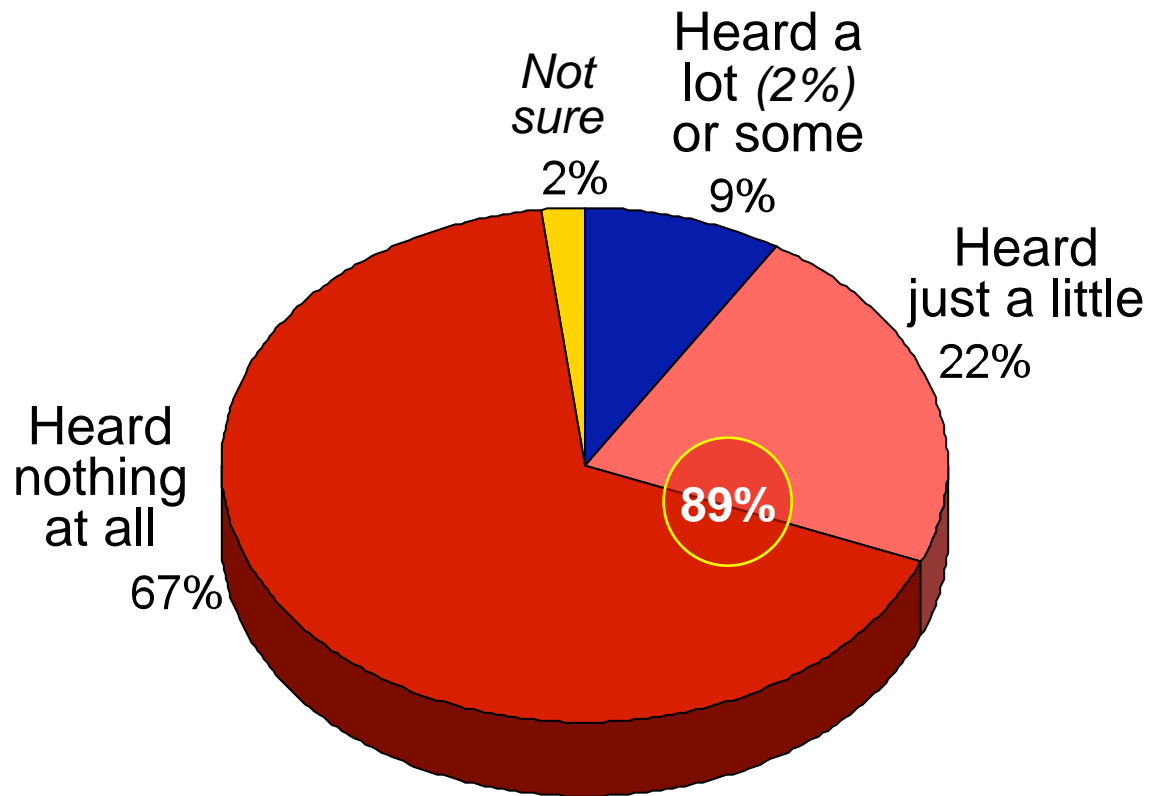
	Heard a lot	Heard some	Heard a little	Heard nothing
Benefits outweigh	55%	45%	32%	19%
Benefits/risks equal	26%	28%	44%	40%
Risks outweigh	16%	18%	17%	29%
Not sure	3%	9%	7%	12%

Initial/Informed Impression Of Risks And Benefits Of Nanotechnology

	Initial Impression				Informed Impression			
	Benefits outweigh	Equal	Risks outweigh	Not sure	Benefits outweigh	Equal	Risks outweigh	Not sure
All adults	20%	25%	7%	48%	30%	38%	23%	9%
Men	29%	28%	6%	37%	39%	33%	17%	11%
Women	12%	23%	7%	58%	21%	43%	28%	8%
Men age 18 to 49	31%	30%	7%	32%	41%	32%	18%	9%
Men age 50/over	27%	26%	6%	41%	36%	33%	18%	13%
Women age 18 to 49	14%	29%	8%	49%	20%	50%	27%	3%
Women age 50/over	12%	16%	6%	66%	21%	37%	29%	13%
High school/less ed	13%	29%	4%	54%	20%	44%	25%	11%
Some college/tech ed	17%	25%	9%	49%	27%	37%	26%	10%
College graduate/more	31%	22%	7%	40%	40%	34%	19%	7%
Income under \$30K	14%	28%	7%	51%	22%	37%	32%	9%
Income \$30K to \$50K	14%	34%	6%	46%	25%	47%	21%	7%
Income \$50K to \$75K	19%	32%	7%	42%	30%	40%	23%	7%
Income over \$75K	34%	22%	7%	37%	42%	34%	18%	6%

Public Awareness Of Synthetic Biology

How much have you heard about synthetic biology?



Public Awareness Of Synthetic Biology

	Heard a lot/ some about synthetic biology	Heard a little/ nothing about synthetic biology	<i>Heard nothing</i>
All adults	9%	89%	67%
Men age 18 to 49	13%	84%	59%
Men age 50/over	10%	89%	71%
Women age 18 to 49	8%	89%	67%
Women age 50/over	6%	92%	72%
High school/less education	6%	93%	76%
Some college/technical ed	10%	87%	67%
College graduate/more ed	13%	85%	59%
Income under \$30K	7%	90%	72%
Income \$30K to \$50K	6%	91%	71%
Income \$50K to \$75K	11%	87%	58%
Income over \$75K	14%	85%	62%
Whites	10%	88%	66%
African Americans	6%	90%	68%
Hispanics	6%	92%	70%



Where Have You Heard About Synthetic Biology?

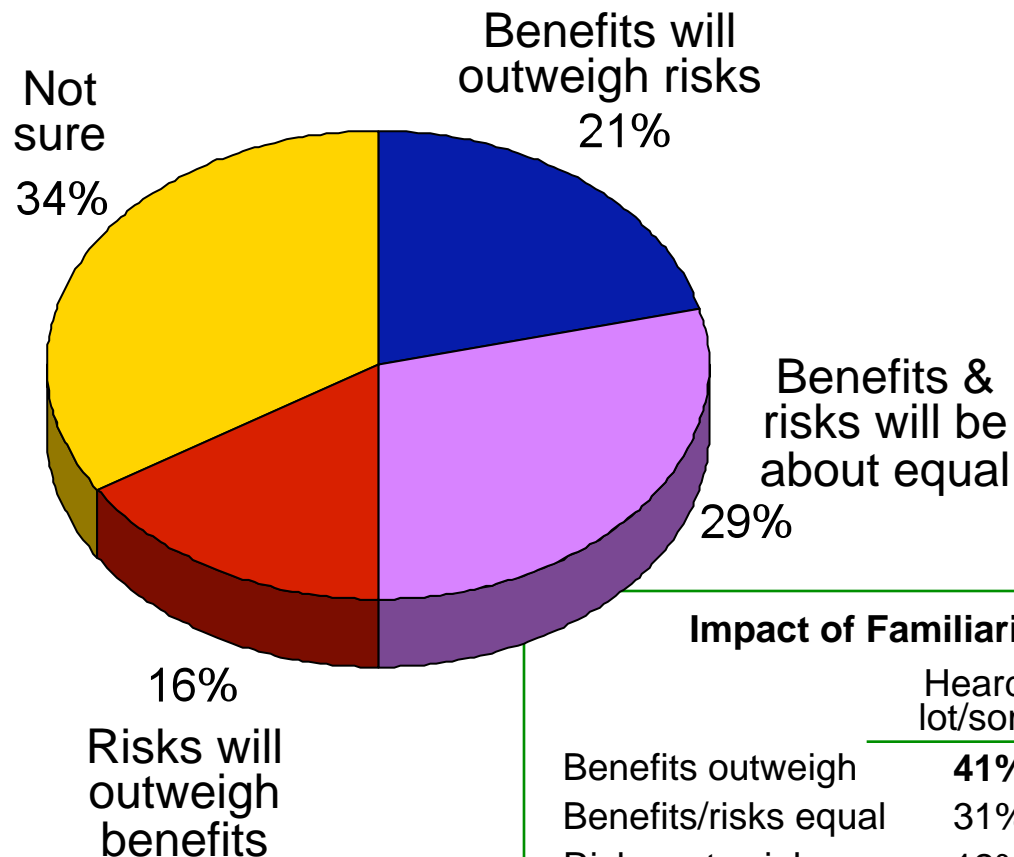
- ✓ Television
- ✓ News media, news program, newspaper
- ✓ Internet
- ✓ Magazine, journal



What Ideas, Images, Or Words Do You Associate With Synthetic Biology?

- ◆ **Man-made, artificial, fake**
- ◆ Cloning, genetic engineering, genetic manipulation
- ◆ Altering biological makeup
- ◆ Medical research, develop new medicines, create human skin or tissue
- ◆ Create artificial life

Initial Impression Of Risks And Benefits Of Synthetic Biology



Impact of Familiarity Prior to Survey

	Heard a lot/some	Heard a little	Heard nothing
Benefits outweigh	41%	25%	16%
Benefits/risks equal	31%	34%	27%
Risks outweigh	12%	17%	17%
Not sure	16%	24%	40%

Initial Impression Of Risks And Benefits Of Synthetic Biology

	Benefits outweigh risks	Benefits/risks equal	Risks outweigh benefits	Not sure
All adults	21%	29%	16%	34%
Men	28%	30%	10%	32%
Women	13%	30%	20%	37%
Men age 18 to 49	31%	33%	8%	28%
Men age 50/over	25%	25%	15%	35%
Women age 18 to 49	16%	28%	25%	31%
Women age 50/over	11%	30%	16%	43%
High school/less education	14%	35%	15%	36%
Some college/technical ed	16%	29%	17%	38%
College graduate/more ed	29%	25%	16%	30%
Income under \$30K	15%	35%	16%	34%
Income \$30K to \$50K	15%	38%	19%	28%
Income \$50K to \$75K	22%	31%	17%	30%
Income over \$75K	29%	26%	15%	30%

Initial Impression Of Risks And Benefits Of Synthetic Biology

	Benefits outweigh risks	Benefits/risks equal	Risks outweigh benefits	Not sure
All adults	21%	29%	16%	34%
Whites	22%	28%	15%	35%
African Americans	11%	40%	16%	33%
Hispanics	22%	30%	18%	30%
Attend religious services:				
Weekly	18%	28%	19%	35%
Less often	22%	32%	15%	31%
Never	23%	31%	9%	37%
Evangelicals	18%	30%	18%	34%
Non-Evangelicals	21%	30%	14%	35%



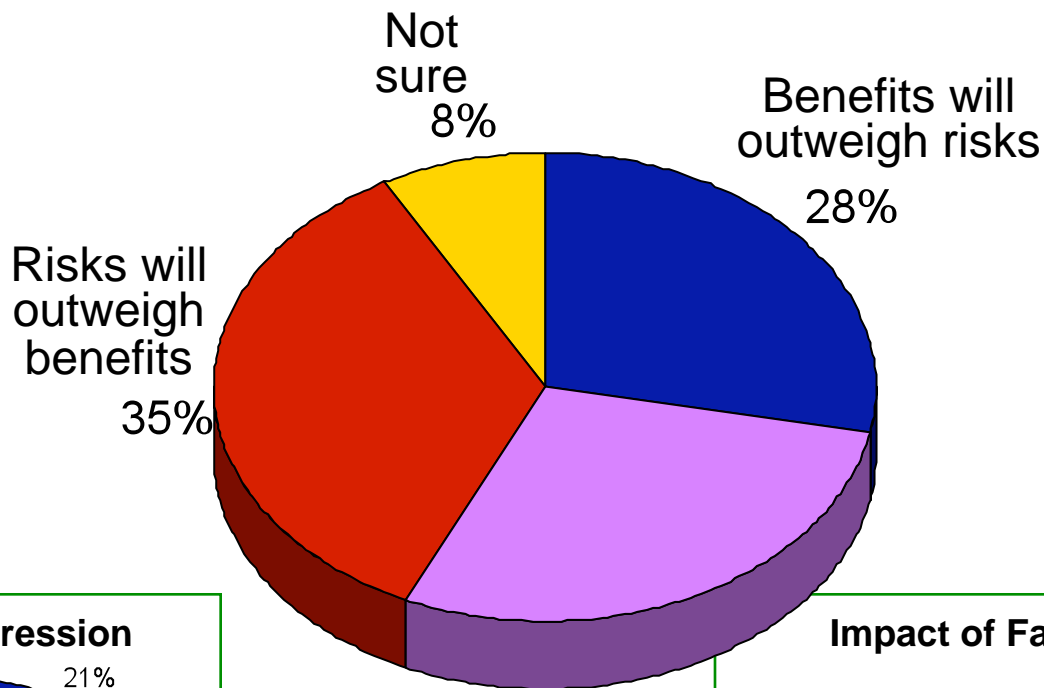
Information About Synthetic Biology

Synthetic biology is the use of advanced science and engineering to make or redesign living organisms, such as bacteria, so that they can carry out specific functions. Synthetic biology involves making new genetic code, also known as DNA, that does not already exist in nature.

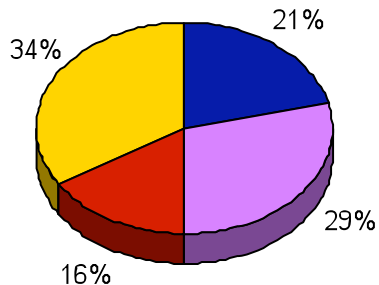
The potential **BENEFITS** of synthetic biology include developing new micro-organisms to treat disease, including cancer, more effectively and to create new and less expensive medications. It also could be used to make new organisms that could provide cheaper and cleaner sources of energy than today's oil-based fuels, and to detect and break down environmental pollutants in the soil, air, and water.

While the potential **RISKS** of synthetic biology are not known, there are concerns that man-made organisms might behave in unexpected and possibly harmful ways and that they could cause harm to the environment. There also are concerns that, if these organisms fall into the wrong hands, they could be used as weapons. Additionally, the ability to create artificial life has raised moral and ethical questions about how life is defined..

Informed Impression Of Risks And Benefits Of Synthetic Biology



Initial Impression



Impact of Familiarity Prior to Survey

	Heard a lot/some	Heard a little	Heard nothing
Benefits outweigh	45%	30%	24%
Benefits/risks equal	27%	30%	30%
Risks outweigh	22%	34%	37%
Not sure	6%	6%	9%

Initial/Informed Impression Of Risks And Benefits Of Synthetic Biology

	Initial Impression				Informed Impression			
	Benefits outweigh	Equal	Risks outweigh	Not sure	Benefits outweigh	Equal	Risks outweigh	Not sure
All adults	21%	29%	16%	34%	28%	29%	35%	8%
Men	28%	30%	10%	32%	35%	30%	29%	6%
Women	13%	30%	20%	37%	20%	29%	41%	10%
Men age 18 to 49	31%	33%	8%	28%	37%	33%	27%	3%
Men age 50/over	25%	25%	15%	35%	34%	26%	31%	9%
Women age 18 to 49	16%	28%	25%	31%	22%	26%	45%	7%
Women age 50/over	11%	30%	16%	43%	18%	31%	38%	13%
High school/less ed	14%	35%	15%	36%	23%	29%	39%	9%
Some college/tech ed	16%	29%	17%	38%	22%	27%	41%	10%
College graduate/more	29%	25%	16%	30%	35%	31%	29%	5%
Income under \$30K	15%	35%	16%	34%	24%	28%	42%	6%
Income \$30K to \$50K	15%	38%	19%	28%	18%	35%	41%	6%
Income \$50K to \$75K	22%	31%	17%	30%	30%	25%	41%	4%
Income over \$75K	29%	26%	15%	30%	35%	31%	28%	6%

Initial/Informed Impression Of Risks And Benefits Of Synthetic Biology

	Initial Impression				Informed Impression			
	Benefits outweigh	Equal	Risks outweigh	Not sure	Benefits outweigh	Equal	Risks outweigh	Not sure
All adults	21%	29%	16%	34%	28%	29%	35%	8%
Whites	22%	28%	15%	35%	29%	28%	35%	8%
African Americans	11%	40%	16%	33%	21%	38%	34%	7%
Hispanics	22%	30%	18%	30%	28%	29%	37%	6%
Attend religious services:								
Weekly	18%	28%	19%	35%	22%	30%	40%	8%
Less often	22%	32%	15%	31%	25%	34%	33%	8%
Never	23%	31%	9%	37%	41%	23%	29%	7%
Evangelicals	18%	30%	18%	34%	23%	29%	44%	4%
Non-Evangelicals	21%	30%	14%	35%	29%	29%	33%	9%



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