



VCU LIFE SCIENCES SURVEY

*Conducted for VCU Life Sciences
by the VCU Center for Public Policy*

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Public Values Science But Concerned About Biotechnology

Americans see clear benefits to society from new developments in science and medicine but at the same time they hold strong reservations about new techniques in biotechnology such as human cloning and genetic therapy according to a new nationwide survey conducted by Virginia Commonwealth University.

The VCU Life Sciences Survey was conducted by telephone with 1003 adults nationwide, September 3-26, 2003. The margin of error for the poll is plus or minus 3 percentage points. This is the third annual VCU Life Sciences survey conducted for VCU Life Sciences by the VCU Center for Public Policy.

Includes:

- Clear Benefits of Science to Society Along with Some Ambivalence
- Concern About Biotechnology: Cloning, Genetic Therapies, Stem Cell Research
- High Interest but Low Knowledge About Science
- Need for More High School Science Education

Survey highlights:

Fountain of Youth Through Genetic Therapy Not Overly Appealing

- New genetic technologies may prove able to slow down the aging process but the public seems hesitant to jump at the chance. 61 percent said they were not too or not at all likely to use genetic therapies to live longer while 37 percent thought they were somewhat or very likely to do so. Men are more receptive to using genetic therapy in this way. 43 percent of men compared to 31 percent of women consider themselves very or somewhat likely to use genetic therapy for this purpose.

Reservations about Genetic Therapy and Designer Babies

- There is near consensus that changing a baby's genetic characteristics for cosmetic purposes such as eye or hair color would be taking medical advances too far. 94 percent consider this taking medical advances too far while just 4 percent say it is making appropriate use of medical advances. When it comes to changing a baby's genetic characteristics in order to reduce the risk of serious disease, the public is more divided. A majority of 54 percent think this, too, is taking medical advances too far while 41 percent say it is an appropriate use of medical advances.

Objections to Human Cloning Remain Strong Even Under Limited Conditions

- The idea of human cloning elicits strong opposition among the American public. 84 percent are either somewhat or strongly opposed to cloning and most of these are strongly opposed to it. Just 13 percent favor human cloning. Less opposition is found for cloning if it is limited to research for the treatment of disease. Under these conditions, 50 percent are in favor while 48 percent are opposed. But a minority thinks it is morally acceptable to do so (36 percent) while 53 percent say it is morally wrong to use human cloning technology in developing new treatments for disease. Even those who consider themselves clear about the differences between therapeutic and reproductive cloning tend to think it is morally wrong to use human cloning technology in this way.

High Scientific Interest Along with Limits to Public Understanding

- Half of Americans strongly agree that “I really enjoy learning how things work in science and technology” while 41 percent somewhat agree with that characterization. Better than four in ten say they have “a lot” of interest in new scientific (44 percent) and new medical (47 percent) discoveries.
- Despite an expressed interest in science, three-quarters of the nation either strongly or somewhat agree “Sometimes new developments in science seem so complicated that a person like me can’t really understand what’s going on.” Even those who express higher levels of interest about science tend to agree with this statement.

Need for More High School Science Education

- Americans strongly endorse the importance of high school science education. More than half at 55 percent said it was extremely important for young people in high school to learn about science in school; 28 percent said it was very important and 15 percent said it was important. Just 1 percent said it was not too important or not at all important.
- Asked about the amount of science education for young people in high school today, 61 percent think students don’t get enough science education, 22 percent think students get about the right amount and just 2 percent think they get too much.

Public Opinion on Science and Biotechnology

Clear Benefits of Science to Society Along with Some Ambivalence

Americans are largely in agreement that science and technology have helped make society better. Eighty-seven percent report that developments in science have helped to make society better and the same proportion say this about new technology as well. These figures have remained steady over the past three years of VCU Life Sciences Surveys. Similarly, there is widespread agreement that scientific research is essential for improving the quality of human lives. Fifty-nine percent strongly agree and 31 percent somewhat agree with this idea. Six in ten

strongly agree that new technology in medicine allows people to live longer and better while another 31 percent somewhat agree.

	Strongly or Somewhat Agree	Strongly or Somewhat Disagree
“Scientific research is essential for improving the quality of human lives.”	90%	9%
“New technology used in medicine allows people to live longer and better.”	91%	9%

New developments in science and technology are strongly linked in the public mind with medicine and healthcare contexts and positive benefits. When asked what one or two words come to mind when hearing the phrase “new developments in science and technology”, the two most common responses related to medicine and healthcare (21%) or general positive comments about science (21%). Five percent mentioned science and new biotechnologies, 11 percent mentioned computer technologies, and nine percent made general negative comments.

While Americans strongly endorse the societal benefits of science, they also express ambivalence about the role of science in society. Better than six in ten (63 percent) agree that scientific research doesn’t pay enough attention to the moral values of society and 55 percent say that scientific research has created as many problems for society as solutions. This ambivalence about science is in keeping with results from two previous VCU Life Sciences Surveys.

	Strongly or Somewhat Agree	Strongly or Somewhat Disagree
“Scientific research these days doesn’t pay enough attention to the moral values of society.”	63%	32%
“Scientific research has created as many problems for society as it has solutions.”	55%	43%

Concern About Biotechnology: Cloning, Genetic Therapies, Stem Cell Research

When it comes to evaluations of new developments in biotechnology public reservations about science can be considerable. Human cloning, in particular, elicits strong opposition among the American public. Eighty-four percent are either somewhat or strongly opposed to human cloning and most of these are strongly opposed to it. Just 13 percent favor cloning in humans.

This level of strong opposition to cloning is consistent with findings from the 2001 and 2002 VCU Life Sciences Surveys.

Strong opposition to human cloning comes from people of all demographic groups, including those who are often favorably disposed toward new developments in science. Majorities of the college educated and those holding higher levels of interest and information about science are strongly opposed to cloning.

Americans are relatively more positive towards cloning if it is limited to helping develop new treatments for disease but there is still considerable opposition. Half are either strongly or somewhat in favor of cloning if used only to help medical research in this way while 48 percent are strongly or somewhat opposed. Those who consider themselves clear about the differences between therapeutic and reproductive cloning were similarly divided. A majority of this group (53 percent) was in favor and 46 percent opposed to cloning under these conditions.

A related question suggests strong public reservations about human cloning even under limited conditions. When asked whether it was morally acceptable or morally wrong to use human cloning technology in developing new treatments for disease, a majority of 53 percent said it was morally wrong while 36 percent said it was morally acceptable. This division of opinion and net moral rejection of cloning for developing new treatments for disease was evident even among those expressing higher levels of interest and information about science and among those who consider themselves clear about the differences between reproductive and therapeutic cloning.

Better than three-fourths of the public (77 percent) say that scientists currently don't know enough about cloning technology to make it safe in the treatment of disease. Just 12 percent think scientists currently know enough to make it safe.

Genetic Therapy and Designer Babies. New advances in biotechnology raise strong objections in other areas as well. Americans tend to oppose the idea of “designer babies” which would allow parents to change a baby's genetic characteristics for specific purposes. Better than nine in ten (94 percent) think that changing a baby's genetic characteristics for cosmetic purposes such as eye and hair color would be taking medical advances too far; just 4 percent think this would be an appropriate use of medical advances. Even when it comes to using genetic therapy in order to reduce a baby's risk of serious disease a majority (54 percent) think this

would be taking medical advances too far while 41 percent think it would be an appropriate use of medical advances.

Genetic Therapy and Aging. New genetic therapies may prove able to slow down the aging process in humans. The search for the fountain of youth may be age-old but the public seems hesitant to jump on the genetic therapy bandwagon in order to slow down the process of aging. About six in ten (61 percent) judge themselves not too or not at all likely to use genetic therapies for this purpose; 37 percent say they would be somewhat or very likely to use genetic therapies if it meant they could live longer. Men are more receptive to using genetic therapy in this way. Forty-three percent of men compared to 31 percent of women consider themselves very or somewhat likely to use genetic therapy for this purpose.

Support for Stem Cell Research. Opinion about the use of stem cells from human embryos for medical research is strongly divided, consistent with past VCU Life Sciences Survey results. Overall, 47 percent strongly or somewhat favor stem cell research while 44 percent strongly or somewhat oppose it. Opinion about stem cells is closely aligned with views on abortion. Nearly three-quarters of those who feel abortion should be illegal in all circumstances (73 percent) oppose research using stem cells from human embryos compared to 22 percent in favor. By contrast, those who feel abortion should always be legal are in favor of stem cell research by a 64 to 26 percent majority.

On the whole, how much do you favor or oppose medical research that uses stem cells from human embryos...?	All U.S.	Abortion Should Always be Illegal	Abortion Should Sometimes be Legal	Abortion Should Always be Legal
Strongly or Somewhat Favor	47%	22%	41%	64%
Strongly or Somewhat Oppose	44%	73%	48%	26%

High Interest But Low Knowledge About Science

Better than four in ten Americans (44 percent) express a lot of interest in new scientific developments. Similarly, 47 percent have a lot of interest in new medical discoveries. Half of the public strongly agrees with the statement “I really enjoy learning how things work in science and technology.”

Despite these high levels of professed interest in science, most do not judge themselves to be overly informed about science or medicine. Just nine percent consider themselves very informed when it comes to scientific discoveries and ten percent say the same about medical discoveries. Asked to self-evaluate their understanding of a very specific distinction between reproductive and therapeutic cloning, a similar proportion (8 percent) considers themselves very clear on the distinction. The majority consider themselves to be, at best, somewhat informed about new developments in science and medicine with a smaller portion saying they are not very or not at all informed.

The highly technical nature of scientific developments appears to create a difficult hurdle to greater public knowledge about science. Three-quarters of the public strongly or somewhat agree with the statement “Sometimes new developments in science seem so complicated that a person like me can’t really understand what’s going on.” Nearly all of those with less interest in science agree that science can seem too complicated to understand. Eighty-nine percent of this group either strongly or somewhat agrees with this statement. Surprisingly, even those who express higher levels of interest in science tend to agree that science can seem too complicated to understand. Better than six in ten (63 percent) of those with a lot of interest in science strongly or somewhat agree with this statement while 36 percent disagree.

		“Sometimes new developments in science seem so complicated that a person like me can’t really understand what’s going on.”						Number of cases
		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Don’t know	No answer	
All respondents		35%	40%	13%	11%	0%	0%	1003
How much are you personally interested in new scientific discoveries?	A Lot	30%	33%	16%	20%	1%	0%	467
	Some	36%	47%	12%	5%	0%	0%	425
	Not Much/ Not At All	51%	38%	5%	3%	1%	2%	108

Need for More High School Science Education

A majority (55 percent) considers high school science education to be extremely important. Nearly three in ten (28 percent) think it is very important for young people to learn

about science in high school. Fifteen percent say it is important and 1 percent considers science education not too or not at all important.

When thinking about the amount of science education that young people in high school currently get, better than six in ten (61 percent) say it is not enough while 22 percent say it is currently the right amount and 2 percent think it is too much.

Questions Asked on the VCU Life Sciences Survey

Sept. 3 to Sept. 26, 2003

Number of Respondents: 1003

Q1. On the whole, have developments in science helped make society better or not?

	2003	2002	2001
Better	87%	86%	86%
Not better	7%	7%	5%
Don't know	3%	6%	7%
No Answer	2%	1%	2%

Q2. What about new technology? On the whole, have developments in new technology helped make society better or not?

	2003	2002	2001
Better	87%	85%	85%
Not better	9%	10%	8%
Don't know	3%	3%	5%
No Answer	1%	1%	2%

Q3. What one or two words come to mind when you hear the phrase "new developments in science and technology"? (Open-ended responses recorded verbatim and coded into categories.)

Medicine and healthcare	21%
Science	1%
Biotechnology	4%
Computer technology	11%
Science and medicine	1%
Science and computers	1%
Medicine and computers	5%
General positive comments	21%
General negative comments	8%
Other	4%
Don't know or No answer	23%

Allowing for more than one mention:

Total mentioning medicine and healthcare	27%
Total mentioning science or biotechnology	7%
Total mentioning computer technology	18%

How much do you agree or disagree with the following: (Q4 to Q7 asked in random order.)

Q4. "Scientific research these days doesn't pay enough attention to the moral values of society."
(Do you strongly agree, somewhat agree, somewhat disagree, or strongly

disagree with that statement?)

	2003	2002	2001
Strongly agree	28%	29%	28%
Somewhat agree	35%	40%	45%
Somewhat disagree	23%	20%	15%
Strongly disagree	9%	9%	8%
Don't know	2%	2%	4%
No answer	3%	0%	2%

Q5. "Scientific research is essential for improving the quality of human lives."
(Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with this statement?)

	2003	2002
Strongly agree	59%	48%
Somewhat agree	31%	42%
Somewhat disagree	6%	6%
Strongly disagree	3%	3%
Don't know	1%	1%
No answer	1%	0%

Q6. "Scientific research has created as many problems for society as it has solutions"
(Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with that statement?)

	2003	2002	2001
Strongly agree	19%	18%	18%
Somewhat agree	36%	41%	36%
Somewhat disagree	29%	28%	26%
Strongly disagree	14%	11%	14%
Don't know	2%	2%	4%
No answer	1%	1%	2%

Q7. "New technology used in medicine allows people to live longer and better."
(Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with this statement?)

	2003	2002
Strongly agree	60%	57%
Somewhat agree	31%	34%
Somewhat disagree	5%	6%
Strongly disagree	4%	2%
Don't know	1%	0%
No answer	0%	1%

Now on a different topic.

Q8. On the whole, how much do you favor or oppose medical research that uses stem cells from human embryos - do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose this?

	2003	2002	2001
Strongly favor	17%	12%	17%
Somewhat favor	30%	23%	31%
Somewhat oppose	21%	22%	21%

Strongly oppose	23%	29%	22%
Don't know	6%	11%	7%
No answer	3%	4%	2%

Q9. The technology now exists to clone or genetically alter animals. How much do you favor or oppose allowing the same thing to be done in humans -do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose this?

	2003	2002	2001
Strongly favor	4%	6%	4%
Somewhat favor	9%	10%	10%
Somewhat oppose	19%	16%	18%
Strongly oppose	65%	65%	64%
Don't know	1%	1%	2%
No answer	1%	2%	1%

Q10. Do you favor or oppose using human cloning technology IF it is used ONLY to help medical research develop new treatments for disease-do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose this?

	2003	2002
Strongly favor	21%	21%
Somewhat favor	29%	24%
Somewhat oppose	16%	13%
Strongly oppose	32%	38%
Don't know	2%	2%
No answer	1%	1%

Q11. In general, do you think that it is morally acceptable or morally wrong to use human cloning technology in developing new treatments for disease?

Morally acceptable	36%
Morally wrong	53%
Don't know	7%
No answer	4%

Q12.Regardless of your opinion about cloning, do you think that scientists currently know enough or don't know enough about human cloning technology to make it safe in the treatment of disease?

Know enough	12%
Don't know enough	77%
Don't know	10%
No answer	2%

Q13. There are several different terms used when it comes to human cloning technology. How clear are you, personally, on the difference between human reproductive cloning and human therapeutic cloning-very clear, somewhat clear, not very clear, or not at all clear?

	2003	2002
Very clear	8%	11%
Somewhat clear	26%	31%
Not very clear	32%	29%
Not at all clear	33%	28%
Don't know	0%	1%

No answer	0%	1%
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New technology in science and medicine may allow couples who want to have a baby to pick and choose the baby's genetic characteristics such as hair color or the risk for certain diseases.

(Q14 to Q15 asked in random order.)

Q14. Would you say that changing a baby's genetic characteristics for cosmetic purposes such as eye or hair color is making appropriate use of medical advances OR is it taking medical advances too far?

Appropriate use	4%
Taking medical advances too far	94%
Don't know	2%
No answer	0%

Q15. Would you say that changing a baby's genetic characteristics to reduce the risk of serious diseases is making appropriate use of medical advances OR is it taking medical advances too far?

Appropriate use	41%
Taking medical advances too far	54%
Don't know	4%
No answer	2%

Q16. New genetic techniques may prove able to slow down the aging process in human beings. How likely would you be to use genetic therapies if it meant you could live longer--very likely, somewhat likely, not too likely, or not at all likely?

Very likely	14%
Somewhat likely	23%
Not too likely	25%
Not at all likely	36%
Don't know	1%
No answer	0%

Please tell me whether you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with the following statements. (Q17 to Q18 asked in random order.)

Q17. "Sometimes new developments in science seem so complicated that a person like me can't really understand what's going on." (Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with this statement?)

Strongly agree	35%
Somewhat agree	40%
Somewhat disagree	13%
Strongly disagree	11%
Don't know	0%
No answer	0%

Q18. "I really enjoy learning how things work in science and technology." (Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with this statement?)

Strongly agree	50%
Somewhat agree	41%
Somewhat disagree	5%
Strongly disagree	3%

Don't know	0%
No answer	0%

Q19. How much are you personally interested in new scientific discoveries - a lot, some, not much, or not at all?

	2003	2002	2001
A lot	44%	39%	43%
Some	43%	44%	44%
Not much	10%	12%	8%
Not at all	3%	4%	4%
Don't know	0%	0%	1%
No answer	0%	0%	0%

Q20. How well informed are you about scientific discoveries - are you very informed, somewhat informed, not very informed, or not at all informed?

	2003	2002	2001
Very informed	9%	7%	11%
Somewhat informed	63%	57%	60%
Not very informed	22%	29%	24%
Not at all informed	6%	6%	4%
Don't know	0%	0%	1%
No answer	0%	0%	0%

Q21. How much are you personally interested in new medical discoveries - a lot, some, not much, or not at all?

	2003	2002	2001
A lot	47%	40%	49%
Some	42%	47%	41%
Not much	6%	10%	9%
Not at all	3%	3%	1%
Don't know	0%	0%	0%
No answer	0%	0%	0%

Q22. How well informed are you about medical discoveries - are you very informed, somewhat informed, not very informed, or not at all informed?

	2003	2002	2001
Very informed	10%	7%	11%
Somewhat informed	65%	60%	64%
Not very informed	20%	28%	22%
Not at all informed	4%	5%	3%
Don't know	0%	0%	0%
No answer	0%	0%	0%

Q23. How important do you think it is for young people in high school to learn about science in school--extremely important, very important, important, not too important, or not at all important?

Extremely important	55%
Very important	28%
Important	15%
Not too important	1%

Not at all important	0%
Don't know	0%
No answer	0%

Q24. Do you think young people in high school today get about the right amount of science education, get too much science education, or don't get enough science education?

Right amount	22%
Too much	2%
Not enough	61%
Don't know	12%
No answer	2%

Q25. Which of these comes closest to your views about abortion? A woman should be able to get an abortion if she decides she wants one no matter what the reason. Abortion should only be legal in certain circumstances, such as when a woman's health is endangered or when the pregnancy results from rape or incest. OR Abortion should be illegal in all circumstances.

	2003	2002	2001
Always legal	37%	29%	37%
Sometimes legal	43%	47%	44%
Always illegal	15%	18%	14%
Don't know	2%	2%	2%
No answer	3%	4%	3%

Q26. Regardless of whether or not you attend religious services, do you consider yourself Protestant, Roman Catholic, Jewish or what?

	2003	2002	2001
Protestant	56%	58%	60%
Catholic	25%	22%	24%
Jewish	1%	1%	1%
Other (Vol.)	4%	7%	5%
None	10%	7%	7%
Don't Know	2%	2%	2%
No Answer	2%	3%	2%

Q27. How often do you attend religious services - more than once a week, once a week, once or twice a month, a few times a year, seldom, or never?

	2003	2002	2001
More than once a week	16%	17%	16%
Once a week	24%	26%	24%
Once or twice a month	14%	15%	16%
A few times a year	20%	16%	16%
Seldom	15%	15%	17%
Never	11%	10%	9%
Don't know	0%	0%	0%
No answer	1%	1%	1%

Q28. Whether or not you attend services, do you consider religion to be an important part of your life, or not?

Q29. (IF YES) Would you say your religious beliefs provide some guidance in your day-to-day living, quite a bit of guidance, or a great deal of guidance in your day-to-day living?

	2003	2002	2001
Not important	15%	15%	14%
Some guidance	20%	16%	19%
Quite a bit	20%	22%	23%
A great deal	43%	44%	41%
Don't know or No answer	2%	2%	2%

Q30. Which of these statements comes closest to describing your feelings about the Bible - The Bible is the actual Word of God, The Bible is the Word of God but not everything in it should be taken literally, or The Bible is a book written by men and is not the Word of God.

	2003	2002	2001
Actual word of God	42%	44%	42%
Not everything to be taken literally	37%	35%	36%
Written by men	14%	13%	14%
Don't know	2%	2%	4%
No answer	4%	5%	3%

METHOD OF THE VCU LIFE SCIENCES SURVEY

The VCU Life Sciences Survey is a public opinion survey of U.S. residents. The survey was conducted by telephone from September 3 through September 26, 2003 with a randomly-selected sample of 1003 adults living in the continental U.S. The survey was sponsored by VCU Life Sciences. Interviewing was conducted by telephone from the facilities of the Survey and Evaluation Research Laboratory, a division of the VCU Center for Public Policy at Virginia Commonwealth University in Richmond, Virginia. The interviewing was conducted by a staff of professionally trained, paid interviewers using computer-assisted telephone interviewing software.

The sample of telephone numbers was prepared by Genesys Sampling Systems and was designed so that all residential telephones, including new and unlisted numbers, had a known chance of inclusion. The cooperation rate for the survey was 31%. Using the Council of American Survey Research Organizations (CASRO) response rate calculations, interviews were obtained with respondents in 26% of the known or assumed residential households in the sample.

The data are weighted to adjust for unequal probabilities of selection due to multiple telephone lines and multiple adults living in the household. In addition, the data are weighted on sex, race, age, education and region of residence to reflect the demographic composition of the adult population in the U.S. Percentages reported in the text and tables are weighted, while the number of cases shown in the tables for various subgroups is the actual number of respondents.

Questions answered by the full sample of adults are subject to a sampling error of plus or minus approximately 3 percentage points at the 95 percent level of confidence. This means that in 95 out of 100 samples like the one used here, the results obtained should be no more than 3 percentage points above or below the figure that would be obtained by interviewing all adults with telephones. Where the answers of subgroups are reported, the sampling error would be higher. Because of nonresponse (refusals to participate, etc.), standard calculations of sampling error are apt to understate the actual extent to which survey results are at variance with the true population values. Surveys are also subject to errors from sources other than sampling. While every effort is made to identify such errors, they are often difficult or impossible to measure. Readers making use of the results are urged to be mindful of the limitations inherent in survey research. More information on the survey method is available from the director of the survey, Dr. Cary Funk, at (804) 827 1430 or clfunk@vcu.edu. This report along with tables of results by selected subgroups is available on the web at <http://www.vcu.edu/lifesci/overview/polls.html>. Results from the 2001 and 2002 VCU Life Sciences Surveys are also available on the web.

Tables of Results by Selected Subgroups

		Q1. On the whole, have developments in science helped make society better or not?				Number of cases
		Better	Not better	Don't know	No answer	
Total		87%	7%	3%	2%	1003
Male		86%	9%	1%	4%	448
Female		88%	6%	5%	1%	555
Education	High school or less	84%	9%	5%	2%	319
	Some college	88%	8%	2%	2%	333
	College grad & up	94%	4%	0%	2%	343
Interest & Information	Lower	84%	8%	5%	2%	483
	Higher	91%	6%	1%	2%	508
Religious Guidance	Not important	84%	9%	4%	3%	146
	Some guidance	90%	6%	3%	1%	205
	Quite a bit	91%	5%	4%	1%	181
	Great deal	85%	9%	3%	3%	444

Interest & Information:

Results of the following four questions were combined to produce an index of "interest & information" on science and medicine: How much are you personally interested in new scientific discoveries - a lot, some, not much, or not at all? How well informed are you about scientific discoveries - are you very informed, somewhat informed, not very informed, or not at all informed? How much are you personally interested in new medical discoveries - a lot, some, not much, or not at all? How well informed are you about medical discoveries - are you very informed, somewhat informed, not very informed, or not at all informed?

		Q2. What about new technology? On the whole, have developments in new technology helped make society better or not?				Number of cases
		Better	Not better	Don't know	No answer	
Total		87%	9%	3%	1%	1003
Male		88%	9%	2%	1%	448
Female		85%	9%	4%	1%	555
Education	High school or less	85%	11%	4%	1%	319
	Some college	88%	8%	2%	2%	333
	College grad & up	90%	7%	2%	2%	343
Interest & Information	Lower	83%	12%	4%	1%	483
	Higher	91%	6%	2%	1%	508
Religious Guidance	Not important	86%	12%	1%	0%	146
	Some guidance	90%	7%	0%	2%	205
	Quite a bit	90%	6%	3%	0%	181
	Great deal	84%	11%	4%	1%	444

		Q4. "Scientific research these days doesn't pay enough attention to the moral values of society."						
		Strongly Agree	Somewhat Agree	Somewhat disagree	Strongly disagree	Don't know	No answer	Number of cases
Total		28%	35%	23%	9%	2%	3%	1003
Male		29%	33%	23%	10%	2%	4%	448
Female		28%	37%	23%	9%	2%	2%	555
Education	High school or less	33%	34%	20%	8%	3%	2%	319
	Some college	29%	38%	24%	8%	1%	2%	333
	College grad & up	18%	36%	26%	14%	0%	5%	343
Interest & Information	Lower	32%	34%	22%	8%	2%	2%	483
	Higher	24%	37%	24%	10%	2%	3%	508
Religious Guidance	Not important	19%	30%	29%	14%	4%	4%	146
	Some guidance	19%	39%	29%	8%	2%	3%	205
	Quite a bit	24%	40%	26%	9%	1%	1%	181
	Great deal	37%	34%	16%	8%	2%	2%	444

		Q5. "Scientific research is essential for improving the quality of human lives."						
		Strongly Agree	Somewhat Agree	Somewhat disagree	Strongly disagree	Don't know	No answer	Number of cases
Total		59%	31%	6%	3%	1%	1%	1003
Male		63%	26%	6%	4%	0%	1%	448
Female		56%	36%	6%	1%	1%	0%	555
Education	High school or less	54%	33%	7%	4%	1%	1%	319
	Some college	61%	32%	5%	1%	0%	0%	333
	College grad & up	67%	28%	4%	1%	0%	0%	343
Interest & Information	Lower	52%	36%	7%	4%	1%	1%	483
	Higher	69%	26%	4%	1%	0%	0%	508
Religious Guidance	Not important	59%	27%	7%	4%	1%	2%	146
	Some guidance	63%	30%	4%	2%	0%	0%	205
	Quite a bit	60%	34%	6%	0%	0%	0%	181
	Great deal	57%	33%	6%	3%	0%	1%	444

		Q6. "Scientific research has created as many problems for society as it has solutions."					Number of cases	
		Strongly Agree	Somewhat Agree	Somewhat disagree	Strongly disagree	Don't know		No answer
Total		19%	36%	29%	14%	2%	1%	1003
Male		19%	35%	27%	17%	0%	2%	448
Female		18%	36%	30%	12%	3%	1%	555
Education	High school or less	21%	34%	27%	15%	3%	1%	319
	Some college	19%	42%	26%	10%	1%	2%	333
	College grad & up	14%	32%	36%	17%	0%	1%	343
Interest & Information	Lower	19%	37%	30%	11%	2%	2%	483
	Higher	18%	34%	29%	18%	1%	1%	508
Religious Guidance	Not important	22%	32%	31%	14%	1%	0%	146
	Some guidance	21%	37%	28%	12%	0%	1%	205
	Quite a bit	12%	38%	31%	16%	2%	0%	181
	Great deal	20%	34%	28%	14%	2%	2%	444

		Q7. "New technology used in medicine allows people to live longer and better."					Number of cases	
		Strongly Agree	Somewhat Agree	Somewhat disagree	Strongly disagree	Don't know		No answer
Total		60%	31%	5%	4%	1%	0%	1003
Male		60%	30%	5%	4%	0%	1%	448
Female		60%	31%	4%	4%	1%	0%	555
Education	High school or less	57%	29%	6%	7%	1%	1%	319
	Some college	61%	34%	3%	1%	0%	0%	333
	College grad & up	66%	29%	4%	0%	0%	1%	343
Interest & Information	Lower	55%	32%	6%	6%	1%	0%	483
	Higher	66%	29%	3%	1%	1%	1%	508
Religious Guidance	Not important	59%	31%	1%	9%	0%	0%	146
	Some guidance	61%	31%	3%	3%	0%	1%	205
	Quite a bit	62%	29%	7%	2%	0%	0%	181
	Great deal	59%	31%	6%	3%	1%	0%	444

		Q8. On the whole, how much do you favor or oppose medical research that uses stem cells from human embryos...?						
		Strongly favor	Somewhat favor	Somewhat Oppose	Strongly Oppose	Don't know	No answer	Number of cases
Total		17%	30%	21%	23%	6%	3%	1003
Male		18%	30%	21%	22%	7%	3%	448
Female		16%	30%	21%	24%	6%	3%	555
Education	High school or less	13%	26%	24%	26%	8%	3%	319
	Some college	18%	30%	23%	21%	6%	2%	333
	College grad & up	25%	36%	13%	20%	4%	3%	343
Interest & Information	Lower	9%	29%	24%	27%	7%	3%	483
	Higher	26%	30%	17%	18%	6%	2%	508
Religious Guidance	Not important	30%	31%	16%	10%	12%	2%	146
	Some guidance	19%	37%	22%	11%	8%	3%	205
	Quite a bit	12%	35%	26%	21%	2%	2%	181
	Great deal	13%	24%	20%	34%	5%	4%	444
Views on Abortion	Always legal	31%	33%	14%	12%	7%	3%	378
	Sometimes legal	9%	32%	25%	23%	7%	3%	428
	Always illegal	7%	15%	23%	50%	4%	1%	149

		Q9. The technology now exists to clone or genetically alter animals, how much do you favor or oppose allowing the same thing to be done in humans...?					Number of cases	
		Strongly favor	Somewhat favor	Somewhat Oppose	Strongly Oppose	Don't know		No answer
Total		4%	9%	19%	65%	1%	1%	1003
Male		7%	13%	21%	57%	0%	2%	448
Female		1%	6%	18%	72%	2%	1%	555
Education	High school or less	4%	7%	20%	67%	1%	1%	319
	Some college	4%	10%	21%	63%	1%	1%	333
	College grad & up	4%	12%	17%	63%	1%	2%	343
Interest & Information	Lower	2%	8%	20%	67%	1%	1%	483
	Higher	6%	11%	19%	62%	1%	1%	508
Religious Guidance	Not important	6%	17%	24%	48%	2%	4%	146
	Some guidance	4%	10%	24%	60%	1%	1%	205
	Quite a bit	4%	10%	23%	63%	0%	0%	181
	Great deal	3%	7%	14%	75%	1%	1%	444
Views on Abortion	Always legal	6%	14%	22%	54%	2%	2%	378
	Sometimes legal	3%	8%	20%	68%	0%	1%	428
	Always illegal	2%	2%	12%	83%	0%	1%	149
Reproductive vs. therapeutic cloning?	Very/Somewhat clear	7%	12%	21%	59%	1%	1%	362
	Not very/Not at all clear	2%	8%	19%	68%	1%	2%	631

		Q10. Do you favor or oppose using human cloning technology IF it is used ONLY to help medical research develop new treatments for disease...?					No answer	Number of cases
		Strongly favor	Somewhat favor	Somewhat Oppose	Strongly Oppose	Don't know		
Total		21%	29%	16%	32%	2%	1%	1003
Male		25%	29%	16%	27%	2%	1%	448
Female		18%	29%	16%	36%	1%	0%	555
Education	High school or less	23%	27%	16%	32%	2%	0%	319
	Some college	15%	31%	17%	36%	1%	1%	333
	College grad & up	23%	31%	14%	28%	2%	2%	343
Interest & Information	Lower	15%	29%	18%	34%	2%	1%	483
	Higher	28%	29%	13%	28%	2%	1%	508
Religious Guidance	Not important	34%	33%	13%	17%	2%	1%	146
	Some guidance	18%	38%	20%	21%	3%	0%	205
	Quite a bit	19%	30%	20%	31%	1%	0%	181
	Great deal	19%	23%	14%	43%	1%	1%	444
Views on Abortion	Always legal	28%	32%	17%	21%	2%	0%	378
	Sometimes legal	18%	30%	18%	31%	2%	1%	428
	Always illegal	13%	21%	10%	55%	0%	1%	149
Reproductive vs. therapeutic cloning?	Very/Somewhat clear	29%	24%	12%	34%	1%	1%	362
	Not very/Not at all clear	17%	32%	18%	31%	2%	1%	631

		Q11. In general, do you think it is morally acceptable or morally wrong to use human cloning technology in developing new treatments for disease?				Number of cases
		Morally acceptable	Morally wrong	Don't know	No answer	
Total		36%	53%	7%	4%	1003
Male		44%	46%	6%	4%	448
Female		28%	59%	9%	4%	555
Education	High school or less	33%	56%	8%	3%	319
	Some college	33%	56%	7%	3%	333
	College grad & up	43%	42%	7%	7%	343
Interest & Information	Lower	33%	57%	7%	3%	483
	Higher	40%	47%	8%	5%	508
Religious Guidance	Not important	54%	39%	5%	2%	146
	Some guidance	44%	41%	8%	6%	205
	Quite a bit	31%	57%	8%	4%	181
	Great deal	28%	61%	7%	4%	444
Views on Abortion	Always legal	48%	41%	7%	4%	378
	Sometimes legal	31%	56%	9%	4%	428
	Always illegal	20%	72%	4%	4%	149
Reproductive vs. therapeutic cloning?	Very/Somewhat clear	40%	49%	7%	4%	362
	Not very/Not at all clear	33%	54%	8%	4%	631

		Q12. Regardless of your opinion about cloning, do you think that scientists currently know enough or don't know enough about human cloning technology to make it safe in the treatment of disease?				Number of cases
		Know enough to make it safe	Don't know enough to make it safe	Don't know	No answer	
Total		12%	77%	10%	2%	1003
Male		13%	74%	11%	2%	448
Female		10%	79%	9%	2%	555
Education	High school or less	11%	77%	10%	2%	319
	Some college	13%	77%	8%	2%	333
	College grad & up	10%	77%	11%	2%	343
Interest & Information	Lower	12%	76%	11%	1%	483
	Higher	11%	78%	8%	3%	508
Religious Guidance	Not important	12%	77%	11%	1%	146
	Some guidance	13%	79%	7%	1%	205
	Quite a bit	12%	78%	7%	3%	181
	Great deal	11%	76%	12%	2%	444
Views on Abortion	Always legal	14%	73%	12%	1%	378
	Sometimes legal	11%	78%	9%	2%	428
	Always illegal	10%	83%	6%	1%	149
Reproductive vs. therapeutic cloning?	Very/Somewhat clear	15%	76%	9%	0%	362
	Not very/Not at all clear	10%	77%	10%	2%	631

		Q13. ...How clear are you, personally, on the difference between human reproductive cloning and human therapeutic cloning...?						
		Very clear	Somewhat clear	Not very clear	Not at all clear	Don't know	No answer	Number of cases
Total		8%	26%	32%	33%	0%	0%	1003
Male		9%	27%	32%	31%	0%	1%	448
Female		8%	25%	31%	35%	0%	0%	555
Education	High school or less	8%	22%	33%	37%	0%	0%	319
	Some college	7%	28%	31%	33%	0%	0%	333
	College grad & up	11%	33%	30%	25%	0%	1%	343
Interest & Information	Lower	5%	21%	33%	42%	0%	0%	483
	Higher	13%	33%	31%	22%	0%	0%	508
Religious Guidance	Not important	7%	26%	33%	33%	0%	0%	146
	Some guidance	5%	23%	39%	32%	0%	0%	205
	Quite a bit	9%	32%	25%	34%	0%	0%	181
	Great deal	10%	26%	32%	31%	0%	0%	444
Views on Abortion	Always legal	10%	26%	30%	34%	0%	0%	378
	Sometimes legal	7%	26%	31%	35%	0%	0%	428
	Always illegal	8%	26%	38%	27%	1%	1%	149

		Q14. ...Would you say that changing a baby's genetic characteristics for cosmetic purposes is making appropriate use of medical advances or is it taking medical advances too far?				Number of cases
		Appropriate use	Taking advances too far	Don't know	No answer	
Total		4%	94%	2%	0%	1003
Male		5%	93%	1%	1%	448
Female		3%	95%	2%	0%	555
Education	High school or less	4%	94%	3%	0%	319
	Some college	7%	92%	1%	0%	333
	College grad & up	2%	97%	0%	1%	343
Interest & Information	Lower	3%	94%	2%	0%	483
	Higher	5%	93%	1%	0%	508
Religious Guidance	Not important	4%	95%	0%	1%	146
	Some guidance	5%	94%	1%	0%	205
	Quite a bit	3%	95%	1%	0%	181
	Great deal	4%	94%	2%	0%	444
Views on Abortion	Always legal	5%	92%	3%	0%	378
	Sometimes legal	4%	95%	1%	0%	428
	Always illegal	2%	98%	0%	0%	149

		Q15. ...Would you say that changing a baby's genetic characteristics to reduce the risk of serious diseases is making appropriate use of medical advances or is it taking medical advances too far?				
		Appropriate use	Taking advances too far	Don't know	No answer	Number of cases
Total		41%	54%	4%	2%	1003
Male		43%	50%	4%	3%	448
Female		38%	56%	4%	1%	555
Education	High school or less	33%	61%	4%	2%	319
	Some college	42%	51%	4%	3%	333
	College grad & up	53%	42%	3%	2%	343
Interest & Information	Lower	36%	58%	4%	2%	483
	Higher	47%	49%	3%	1%	508
Religious Guidance	Not important	52%	43%	3%	2%	146
	Some guidance	49%	48%	2%	1%	205
	Quite a bit	41%	55%	2%	1%	181
	Great deal	33%	59%	6%	2%	444
Views on Abortion	Always legal	46%	47%	4%	3%	378
	Sometimes legal	43%	51%	5%	2%	428
	Always illegal	21%	76%	2%	1%	149

		Q16...How likely would you be to use genetic therapies if it meant you could live longer...?					Number of cases	
		Very likely	Somewhat likely	Not too likely	Not at all likely	Don't know		No answer
Total		14%	23%	25%	36%	1%	0%	1003
Male		19%	24%	22%	32%	2%	1%	448
Female		10%	21%	27%	40%	1%	0%	555
Age	18-29	15%	24%	28%	33%	0%	0%	187
	30-44	12%	21%	26%	40%	1%	1%	246
	45-64	17%	23%	24%	33%	2%	0%	350
	65 and older	11%	23%	21%	41%	3%	0%	191
Education	High school or less	14%	21%	21%	42%	2%	0%	319
	Some college	15%	22%	28%	33%	1%	0%	333
	College grad & up	14%	27%	29%	29%	1%	0%	343
Interest & Information	Lower	11%	22%	26%	39%	2%	0%	483
	Higher	19%	24%	25%	32%	1%	0%	508
Religious Guidance	Not important	16%	26%	24%	32%	2%	0%	146
	Some guidance	20%	26%	28%	25%	1%	0%	205
	Quite a bit	11%	26%	26%	36%	1%	0%	181
	Great deal	12%	17%	24%	44%	1%	1%	444

		Q17. "Sometimes new developments in science seem so complicated that a person like me can't really understand what's going on."						
		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Don't know	No answer	Number of cases
Total		35%	40%	13%	11%	0%	0%	1003
Male		30%	38%	14%	17%	0%	1%	448
Female		40%	41%	12%	6%	0%	0%	555
Education	High school or less	44%	37%	10%	7%	1%	1%	319
	Some college	32%	45%	12%	10%	0%	0%	333
	College grad & up	21%	38%	20%	20%	0%	1%	343
Interest & Information	Lower	41%	42%	10%	5%	0%	1%	483
	Higher	28%	36%	16%	18%	0%	0%	508
Religious Guidance	Not important	28%	39%	19%	13%	0%	0%	146
	Some guidance	32%	48%	14%	5%	0%	1%	205
	Quite a bit	32%	50%	8%	10%	0%	0%	181
	Great deal	40%	32%	13%	14%	1%	1%	444

		Q18. "I really enjoy learning how things work in science and technology."						
		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Don't know	No answer	Number of cases
Total		50%	41%	5%	3%	0%	0%	1003
Male		58%	34%	5%	3%	0%	0%	448
Female		43%	48%	6%	2%	1%	1%	555
Education	High school or less	43%	44%	7%	5%	0%	1%	319
	Some college	52%	43%	4%	2%	0%	0%	333
	College grad & up	61%	35%	4%	1%	0%	0%	343
Interest & Information	Lower	32%	55%	8%	5%	1%	1%	483
	Higher	71%	26%	2%	0%	0%	0%	508
Religious Guidance	Not important	57%	34%	4%	5%	0%	0%	146
	Some guidance	52%	43%	4%	1%	0%	0%	205
	Quite a bit	38%	55%	5%	2%	0%	0%	181
	Great deal	52%	37%	7%	3%	1%	1%	444

		Q19. How much are you personally interested in new SCIENTIFIC discoveries...?					Number of cases	
		A lot	Some	Not much	Not at all	Don't know		No answer
Total		44%	43%	10%	3%	0%	0%	1003
Male		49%	40%	7%	4%	0%	0%	448
Female		39%	45%	12%	3%	0%	0%	555
Education	High school or less	36%	43%	14%	6%	0%	0%	319
	Some college	44%	46%	8%	2%	0%	1%	333
	College grad & up	59%	38%	3%	0%	0%	0%	343
Religious Guidance	Not important	50%	38%	7%	4%	1%	0%	146
	Some guidance	41%	49%	5%	5%	0%	0%	205
	Quite a bit	42%	40%	17%	0%	0%	1%	181
	Great deal	44%	42%	10%	4%	0%	0%	444

		Q20. How well informed are you about SCIENTIFIC discoveries...?					Number of cases	
		Very informed	Somewhat informed	Not very informed	Not at all informed	Don't know		No answer
Total		9%	63%	22%	6%	0%	0%	1003
Male		13%	62%	20%	5%	0%	0%	448
Female		5%	64%	24%	6%	0%	0%	555
Education	High school or less	6%	55%	28%	10%	0%	0%	319
	Some college	8%	72%	17%	3%	0%	0%	333
	College grad & up	15%	70%	16%	0%	0%	0%	343
Religious Guidance	Not important	11%	60%	23%	6%	0%	0%	146
	Some guidance	8%	63%	24%	5%	0%	0%	205
	Quite a bit	7%	72%	20%	1%	0%	0%	181
	Great deal	10%	59%	23%	8%	0%	0%	444

		Q21. How much are you personally interested in new MEDICAL discoveries...?					Number of cases	
		A lot	Some	Not much	Not at all	Don't know	No answer	
Total		47%	42%	6%	3%	0%	0%	1003
Male		42%	44%	8%	5%	0%	0%	448
Female		52%	41%	5%	2%	0%	0%	555
Education	High school or less	44%	42%	7%	6%	0%	0%	319
	Some college	49%	43%	5%	3%	0%	0%	333
	College grad & up	53%	42%	5%	0%	0%	0%	343
Religious Guidance	Not important	46%	40%	9%	5%	0%	0%	146
	Some guidance	42%	49%	8%	2%	0%	0%	205
	Quite a bit	47%	41%	7%	5%	0%	0%	181
	Great deal	51%	41%	5%	3%	0%	0%	444

		Q22. How well informed are you about MEDICAL discoveries...?					Number of cases
		Very informed	Somewhat informed	Not very informed	Not at all informed	No answer	
Total		10%	65%	20%	4%	0%	1003
Male		12%	63%	20%	5%	0%	448
Female		9%	67%	19%	4%	0%	555
Education	High school or less	8%	61%	24%	6%	0%	319
	Some college	11%	69%	16%	4%	0%	333
	College grad & up	14%	70%	16%	1%	0%	343
Religious Guidance	Not important	12%	59%	19%	10%	0%	146
	Some guidance	7%	64%	26%	3%	0%	205
	Quite a bit	11%	63%	21%	5%	0%	181
	Great deal	11%	68%	17%	3%	0%	444

		Q23. How important do you think it is for young people in high school to learn about science in school...?						Number of cases
		Extremely important	Very important	Important	Not too important	Not at all important	Don't know	
Total		55%	28%	15%	1%	0%	0%	1003
Male		56%	26%	16%	1%	0%	0%	448
Female		53%	30%	15%	2%	0%	0%	555
Education	High school or less	43%	32%	23%	2%	0%	0%	319
	Some college	56%	32%	11%	1%	0%	0%	333
	College grad & up	76%	17%	6%	1%	0%	0%	343
Interest & Information	Lower	44%	31%	23%	2%	0%	0%	483
	Higher	67%	24%	7%	1%	0%	0%	508
Religious Guidance	Not important	57%	28%	15%	0%	0%	0%	146
	Some guidance	59%	29%	11%	1%	0%	0%	205
	Quite a bit	49%	33%	16%	2%	0%	0%	181
	Great deal	55%	24%	17%	2%	0%	0%	444

		Q24. Do you think young people in high school today get about the right amount of science education, get too much science education, or don't get enough science education?					Number of cases
		Get about the right amount	Get too much	Don't get enough	Don't know	No answer	
Total		22%	2%	61%	12%	2%	1003
Male		20%	2%	64%	11%	3%	448
Female		25%	2%	59%	13%	1%	555
Education	High school or less	23%	3%	59%	14%	2%	319
	Some college	22%	2%	65%	8%	3%	333
	College grad & up	21%	1%	62%	13%	3%	343
Interest & Information	Lower	25%	3%	56%	14%	2%	483
	Higher	19%	1%	68%	9%	2%	508
Religious Guidance	Not important	16%	2%	66%	14%	2%	146
	Some guidance	24%	2%	63%	8%	2%	205
	Quite a bit	25%	4%	60%	10%	2%	181
	Great deal	23%	2%	59%	14%	2%	444

