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**Scientific Achievements Less Prominent Than a Decade Ago**  
**PUBLIC PRAISES SCIENCE; SCIENTISTS FAULT PUBLIC, MEDIA**

***A Survey Conducted in Collaboration With  
The American Association for the Advancement of Science***

***With Commentary by  
Dr. Alan I. Leshner, Chief Executive Officer  
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*Scientific Achievements Less Prominent Than a Decade Ago***

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## **Scientific Achievements Less Prominent Than a Decade Ago** **PUBLIC PRAISES SCIENCE; SCIENTISTS FAULT PUBLIC, MEDIA**

Americans like science. Overwhelming majorities say that science has had a positive effect on society and that science has made life easier for most people. Most also say that government investments in science, as well as engineering and technology, pay off in the long run. And scientists are very highly rated compared with members of other professions: Only members of the military and teachers are more likely to be viewed as contributing a lot to society's well-being.

However, the public has a far less positive view of the global standing of U.S. science than do scientists themselves. Just 17% of the public thinks that U.S. scientific achievements rate as the best in the world.

A survey of more than 2,500 scientists, conducted in collaboration with the American Association for the Advancement of Science (AAAS), finds that nearly half (49%) rate U.S. scientific achievements as the best in the world. When asked about their own scientific specialty, about the same share of scientists (45%) rate U.S. scientific achievements the best in the world.

### **Public Has High Regard for Science and Scientists...**

| <i>Science's effect<br/>on society</i>                   | <u>Public</u><br>% |
|--|--------------------|
| Mostly positive  | 84                 |
| Mostly negative  | 6                  |
| Other/DK   | 10                 |
| <i>Contribute "a lot"<br/>to society's well-being...</i> |                    |
| Members of military                                      | 84                 |
| Teachers   | 77                 |
| <b>Scientists</b>  | <b>70</b>          |
| Medical doctors  | 69                 |
| Engineers  | 64                 |
| Clergy   | 40                 |
| Journalists  | 38                 |
| Artists  | 31                 |
| Lawyers  | 23                 |
| Business executives                                      | 21                 |

### **But Public Is Less Positive than Scientists about U.S. Science**

| <i>U.S. scientific<br/>achievements...</i> | <u>Public</u><br>% | <u>Scientists</u><br>% |
|--|--------------------|------------------------|
| Best in the world                          | 17                 | 49                     |
| Above average                              | 47                 | 45                     |
| Average                                    | 26                 | 5                      |
| Below average                              | 5                  | 1                      |
| DK/No answer                               | 4                  | *                      |

Figures read down.

There are indications that the public also is somewhat less confident in America's scientific prowess than it once was. Significantly fewer Americans volunteer scientific advances as one of the country's most important achievements than did so a decade ago (27% today, 47% in May 1999). As an example, ten years ago, 18% cited space exploration and the moon landing as the country's top achievement of the 20<sup>th</sup> century. Today 12% see it as the greatest achievement of the past 50 years.

| <b>Science Has Slipped as Nation's "Greatest Achievement"</b>     |                       |                      |
|---|-----------------------|----------------------|
| <i>Public's views of greatest achievement of last 50 years...</i> | <u>May 1999*</u><br>% | <u>May 2009</u><br>% |
| Science/medicine/technology                                       | 47                    | 27                   |
| Civil rights/Equal rights   | 5                     | 17                   |
| War and peace   | 7                     | 7                    |
| Economy   | 5                     | 3                    |
| Other   | 13                    | 17                   |
| Nothing/Don't know  | 24                    | 33                   |

Multiple responses accepted.  
\* May 1999 question asked about "America's greatest achievement during the 20<sup>th</sup> century."  
Figures read down.

While the public holds scientists in high regard, many scientists offer unfavorable, if not critical, assessments of the public's knowledge and expectations. Fully 85% see the public's lack of scientific knowledge as a major problem for science, and nearly half (49%) fault the public for having unrealistic expectations about the speed of scientific achievements.

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*I feel that science education in this country is in a terrible state, particularly post-elementary education. Something is happening between grade school and junior high school, where our kids are losing interest in science, or their teachers are not inspiring them. We also need some kind of continuing science education, or public outreach program, to adults who are out of school. The pace of our scientific advances has become quite swift the last 50 years, but most U.S. adults have been left behind. Microbiologist, 37.*

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are not. And 48% say media oversimplification of scientific findings is a major problem. The scientists are particularly critical of television news coverage of science. Just 15% of scientists rate TV coverage as excellent or good, while 83% say it is only fair or poor. Newspaper coverage of science is rated somewhat better; still, barely a third (36%) of the scientists say it is excellent or good, while 63% rate it as only fair or poor.

A substantial percentage of scientists also say that the news media have done a poor job educating the public. About three-quarters (76%) say a major problem for science is that news reports fail to distinguish between findings that are well-founded and those that

| <b>Problems for Science: Lack of Public Knowledge, Sloppy News Coverage</b>    |                           |                                 |
|--|---------------------------|---------------------------------|
| <i>Scientists' views of problems for science...</i>                            | <u>Major problem</u><br>% | <u>Minor/Not a Problem</u><br>% |
| Public does not know very much about science                                   | 85                        | 15                              |
| News does not distinguish between well-founded findings and those that are not | 76                        | 24                              |
| News media oversimplify scientific findings                                    | 48                        | 51                              |
| Public expects solutions to problems too quickly                               | 49                        | 51                              |

Figures read across.

While scientists are generally upbeat about the state of their profession, they do see several obstacles to conducting high-quality basic research. As might be expected, by far the biggest impediment is a lack of funding; more than eight-in-ten say this is a very serious (46%) or a serious (41%) impediment to research. A majority (56%) also says that visa and immigration problems for foreign scientists and students stand in the way of high-quality research. Far smaller percentages say that regulations on animal research (27%) or other factors are serious impediments to scientific research.

| <i>Impediments to high-quality research...</i>   | Very<br><u>serious</u><br>% | <u>Serious</u><br>% | Not too/<br>Not at all<br><u>serious</u><br>% |
|--|-----------------------------|---------------------|---|
| Lack of funding for basic research               | 46                          | 41                  | 12  |
| Visa problems for foreign students & scientists  | 17                          | 39                  | 36  |
| Regulations on animal research                   | 6                           | 21                  | 59  |
| Regulations on use of US technology overseas     | 4                           | 17                  | 48  |
| Implementation of human subjects rules           | 4                           | 15                  | 51  |
| Conflict of interest rules used by science pubs. | 2                           | 10                  | 73  |
| Figures read across.                             |                             |                     |   |

**Points of Agreement**

The survey of opinions about the state of science and its impact on society was conducted by the Pew Research Center for the People & the Press in collaboration with the American Association for the Advancement of Science (AAAS), the world’s largest general scientific society. The survey of the general public was conducted on landlines and cell phones among 2,001 adults April 28-May 12; the online survey of scientists was conducted among a sample of 2,533 members of the AAAS from May 1-June 14. Science knowledge questions were included in a separate survey of the general public, conducted on landlines and cell phones among 1,005 adults June 18-21.

While scientists express frustration with the public, there are some significant points of agreement between the public and the scientific community. First, majorities of both groups point to advances in medicine and life sciences as important achievements of science. About half of the public (52%) cites medicine – including health care, vaccines, and medical cures – when asked to describe ways that science has positively affected society; by comparison, just 7% mention communications and computer technology. Similarly, most scientists (55%) mention a biomedical or health finding when asked about the nation’s greatest scientific achievement of the last 20 years.

There also is common ground between the public and scientists regarding the pivotal role of government in funding scientific research. Government institutions and agencies are the dominant funders of research, according to scientists: 84% list a government entity as an important source of funding for their specialty, with nearly half specifically citing the National Institutes of Health (49%) or the National Science Foundation (47%). Half of the scientists (50%) cite non-government funding sources as among the most important in their field.

A majority of the public (60%) says that government investment in research is essential for scientific progress; only about half that percentage (29%) is of the view that private investment will ensure that enough scientific progress is made even without government intervention.

Moreover, large percentages think that government investments in basic scientific research (73%) and engineering and technology (74%) pay off in the long run. Notably, the partisan differences in these views are fairly modest, with 80% of Democrats and 68% of Republicans saying that government investments in basic science pay off in the long run. Comparable percentages of Democrats and Republicans say the same about government investments in engineering and technology.

In this regard, public views about whether funding for scientific research should be increased, decreased or kept the same have changed little since the start of the decade. Currently, more than twice as many people say that, if given the task of making up the budget for the federal government, they would increase (39%) rather than decrease (14%) funding for scientific research; 40% say they would keep spending as it is. That is largely unchanged from 2001, when 41% said they would increase funding for scientific research.

As in the past, scientific research rates as a second-tier funding priority, well behind education (67% increase funding), veterans' benefits (63%) and health care (61%). But since 2001, support for increasing funding in several areas, including education and health care, has declined. Over the same period, opinions about funding scientific research have remained more stable.

| <b>Government Is Top Source of Research Funding, Say Scientists</b>  |                        |
|--|------------------------|
| <i>Most important source in your specialty*...</i>   | <u>Scientists</u><br>% |
| <b>Government (net)</b>  | <b>84</b>              |
| Nat'l Inst. Health   | 49                     |
| Nat'l Science Foundation   | 47                     |
| Dep't of Defense   | 14                     |
| Dep't of Energy  | 13                     |
| <b>Non-government funding (net)</b>  | <b>50</b>              |
| Foundations/non-profits  | 30                     |
| Industry/business  | 20                     |
| <b>Public Sees Government Funding of Research as "Essential"</b>   |                        |
| <i>Which comes closer to your view...</i>  | <u>Public</u><br>%     |
| Gov't investment in research is essential for scientific progress  | 60                     |
| Private investment ensures enough progress w/out gov't investment  | 29                     |
| Don't know   | 11                     |
| * Multiple responses accepted; figures add to more than 100%. Top funding sources listed. Figures read down. |                        |

**Opinion Gaps between Scientists, Public**

The public and scientists generally concur about the importance of government funding of scientific research, but there are substantial gaps in the opinions of scientists and the public about various scientific and societal issues. Scientists are far less critical than the general public of government performance. Just 40% of scientists agree that “when something is run by the government, it is usually inefficient and wasteful”; a majority of the public (57%) agrees with this statement.

| <b>Scientists Have More Positive View of Gov't, Less Positive View of Business</b>      |                    |                        |
|---|--------------------|------------------------|
| <i>When something is run by gov't it is usually inefficient and wasteful</i>            | <u>Public</u><br>% | <u>Scientists</u><br>% |
| Agree   | 57                 | 40                     |
| Disagree  | 39                 | 58                     |
| Don't know/No answer  | 4                  | 2                      |
| <i>Business corps. generally strike a fair balance bet. profits and public interest</i> |                    |                        |
| Agree   | 37                 | 20                     |
| Disagree  | 58                 | 77                     |
| Don't know/No answer  | 5                  | 2                      |
| Figures read down.  |                    |                        |

Scientists also are more critical of business; they are roughly half as likely as the public to say that “business corporations generally strike a fair balance between making profits and serving the public interest” (20% of scientists vs. 37% of public).

When it comes to contemporary scientific issues, these differences are often even larger. Most notably, 87% of scientists say that humans and other living things have evolved over time and that evolution is the result of natural processes such as natural selection. Just 32% of the public accepts this as true.

| <b>Differences between Public and Scientists Go Beyond Evolution</b>         |                    |                        |
|--|--------------------|------------------------|
|  | <u>Public</u><br>% | <u>Scientists</u><br>% |
| Think that humans, other living things have evolved due to natural processes | 32                 | 87                     |
| Think that earth is getting warmer because of human activity                 | 49                 | 84                     |
| Favor use of animals in scientific research                                  | 52                 | 93                     |
| Favor federal funding for embryonic stem cell research                       | 58                 | 93                     |
| Favor building more nuclear power plants                                     | 51                 | 70                     |
| Say that all parents should be required to vaccinate their children          | 69                 | 82                     |

And the near consensus among scientists about global warming is not mirrored in the general public. While 84% of scientists say the earth is getting warmer because of human activity such as burning fossil fuels, just 49% of the public agrees.

More than nine-in-ten scientists (93%) favor the use of animals in scientific research, but only about half of the public (52%) agrees. There also are wide differences in the proportions of scientists (93%) and the public (58%) that favor federal funding for embryonic stem cell research. There is less of a schism over the need for universal vaccinations: 82% of scientists and 69% of the public at large say that all children should be required to be vaccinated. Just 17% of scientists and 28% of the public say parents should be able to decide not to vaccinate their children.

Despite these differences, science and scientists are viewed positively by those who differ over evolution, global warming and other contentious issues.

On the question of evolution, for instance, 78% of those who say that humans and other living things have evolved over time because of natural selection and other natural processes say that scientists contribute a lot to the well-being of society. Those who say humans and other living things have existed in their present form since the beginning of time express a less positive view of scientists; nonetheless, 63% of them say scientists have contributed a great deal to society.

| <b>Scientists Viewed Positively, Even By Those Skeptical of Scientific Conclusions</b> |              |             |                |          |
|--|--------------|-------------|----------------|----------|
| <i>How much do scientists contribute to the well-being of society?</i>                 |              |             |                |          |
|  | <u>A lot</u> | <u>Some</u> | <u>Nothing</u> | <u>N</u> |
|  | %            | %           | %              |          |
| <b><i>View on origins of life...</i></b>   |              |             |                |          |
| Believe in evolution due to natural selection  | 78           | 19          | 3              | 647      |
| Believe beings were created in present form  | 63           | 27          | 7              | 621      |
| <b><i>Views on climate change...</i></b>   |              |             |                |          |
| Earth is getting warmer due to human activity  | 74           | 21          | 4              | 965      |
| No solid evidence earth is getting warmer  | 64           | 25          | 7              | 239      |
| <b><i>Science and your religious beliefs...</i></b>                                    |              |             |                |          |
| Science does not conflict w/ my beliefs  | 72           | 21          | 5              | 694      |
| Science conflicts w/ my beliefs  | 67           | 27          | 5              | 1249     |
| Figures read across.   |              |             |                |          |

There also are only modest differences in views of scientists between those who say global warming is caused by human activity and those who say there is no solid evidence the earth is warming. In addition, those who say that science sometimes conflicts with their own religious beliefs – 36% of the public – are only slightly less likely than those who see no conflict to say that scientists contribute a great deal to society (67%, 72% respectively).

**Good Times for Science**

The poll finds scientists upbeat about the state of their profession. Three-quarters (76%) say this is generally a good time for science and nearly as many (73%) say it is good time for their scientific specialty. Positive views are shared by scientists irrespective of specialty. In addition, despite the bad economy, 67% say it is either a very good time (17%) or a good time (50%) to begin a career in their scientific field.

|                        | <i>Good time for...</i> |                       |
|------------------------|-------------------------|-----------------------|
|                        | <u>Science</u>          | <u>Your specialty</u> |
|                        | %                       | %                     |
| All scientists         | 76                      | 73                    |
| <i>Field</i>           |                         |                       |
| Biological and Medical | 73                      | 73                    |
| Chemistry              | 75                      | 69                    |
| Geosciences            | 83                      | 77                    |
| Physics and Astronomy  | 79                      | 74                    |

Politics may play some role in the positive way the scientists surveyed judge the times. More than half of the scientists surveyed (55%) say they are Democrats, compared with 35% of the public. Fully 52% of the scientists call themselves liberals; among the public, just 20% describe themselves as liberals. Many of the scientists surveyed mentioned in their open-ended comments that they were optimistic about the Obama administration’s likely impact on science.

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*The state of science is vastly improved since President Obama's election. He understands the importance of science and speaks forcefully for it. The stimulus money should help us climb out of this recession as well as improve the state of funding for scientific research. Mathematician, 64*

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For its part, the public does not perceive scientists as a particularly liberal group. When asked whether they think of scientists as liberal, conservative or neither in particular, nearly two-thirds (64%) choose the latter option. Just 20% say they think of scientists as politically liberal. However, a majority of scientists (56%) do see members of their profession as liberal.

Most scientists had heard at least a little about claims that government scientists were not allowed to report research findings that conflicted with the Bush administration’s point of view. And the vast majority (77%) says that these claims are true. By contrast, these claims barely registered with the public – more than half heard nothing at all about this issue. Only about a quarter of the public (28%) said they thought the claims were true.

|                                | <u>Public*</u> | <u>Scientists</u> |
|--------------------------------|----------------|-------------------|
| <i>% who are...</i>            | %              | %                 |
| Democrat                       | 35             | 55                |
| Republican                     | 23             | 6                 |
| Independent                    | 34             | 32                |
| <i>Ideological self-rating</i> |                |                   |
| Liberal                        | 20             | 52                |
| Moderate                       | 38             | 35                |
| Conservative                   | 37             | 9                 |

\* Based on 2009 Pew Research surveys; N=10,630. Figures read down.

Both scientists and the public overwhelmingly say it is appropriate for scientists to become active in political debates about such issues as nuclear power or stem cell research. Virtually all scientists (97%) endorse their participation in debates about these issues, while 76% of the public agrees.

## Science Knowledge

Americans are knowledgeable about basic scientific facts that affect their health and their daily lives. But the public is less able to answer questions about more complex science topics.

The 12-item quiz administered to the public is available online. If you would like to take the quiz before reading this section, click [here](#).

Fully 91% know that aspirin is an over-the-counter drug recommended to prevent heart attacks and 82% know that GPS technology relies on satellites. And topics covered in major news stories also are widely understood; 77% correctly identify earthquakes as a cause of tsunamis and 65% can identify CO<sub>2</sub> as a gas linked to rising temperatures.

Slightly more than half (54%) knows that antibiotics do not kill viruses along with bacteria, and about the same percentage (52%) knows that what distinguishes stem cells from other cells is that they can develop into many different kinds of cells. And some high-school science knowledge is elusive for most Americans: Fewer than half (46%) know that electrons are smaller than atoms.

Previous Pew Research Center knowledge surveys have shown that young people are poorly informed about current events and politics. But this is not the case with science knowledge. In fact, those younger than 30 get higher scores on the knowledge test than do those 65 and older. Still, the best-informed people about science, according to the results of this quiz, are those 30 to 49.

| Public's Science Knowledge                                       |                 |
|--|-----------------|
|  | Percent correct |
| <b>Contemporary questions</b>                                    |                 |
| <i>Aspirin</i> recommended to prevent heart attacks              | 91              |
| GPS reliant on <i>satellites</i>                                 | 82              |
| <i>Undersea earthquakes</i> can cause tsunamis                   | 77              |
| <i>Carbon dioxide</i> is gas linked to rising temperatures       | 65              |
| <i>Water</i> recently discovered on Mars                         | 61              |
| <i>Pluto</i> no longer a planet                                  | 60              |
| Stem cells <i>can develop into many different types of cells</i> | 52              |
| <b>"Textbook" questions</b>                                      |                 |
| Continents are/have been shifting                                | 76              |
| <i>Not all</i> radioactivity is man-made                         | 63              |
| Antibiotics <i>do not</i> kill viruses as well as bacteria       | 54              |
| Lasers <i>do not</i> work by focusing sound waves                | 47              |
| Electrons are <i>smaller</i> than atoms                          | 46              |

### **About the Surveys**

Data used in this report were gathered from three surveys. Opinions of the general public were gathered in two telephone surveys conducted by landlines and cell phones. The main telephone survey was conducted with a sample of 2,001 adults April 28-May 12, 2009. The survey containing the science knowledge quiz and the spending priority questions was conducted June 18-21, 2009 with a sample of 1,005 adults.

The survey of scientists was conducted online with a random sample of 2,533 members of the American Association for the Advancement of Science (AAAS), from May 1 to June 14, 2009. AAAS is the world's largest general scientific society, and includes members representing all scientific fields. Margin of error for the surveys and additional technical details can be found in the methodological appendix.

We gratefully acknowledge the expert advice and counsel on the design of the surveys provided by the following individuals: Jaqui C. Falkenheim, Bettina Francis, Cary Funk, Matt Kohut, Tiffany Lohwater, Michael S. O'Malley, Matthew Nisbet, Robert Semper, and Eva Zanzerkia. Jennifer Su, Larry Hugick and their colleagues at Princeton Survey Research Associates International oversaw the data collection and processing. Waylon Butler and his colleagues at AAAS were instrumental in constructing the sample of scientists and managing the recruitment of participants for the scientist survey.

## SECTION 1: PUBLIC VIEWS OF SCIENCE AND SCIENTISTS

Americans believe overwhelmingly that science has benefited society and has helped make life easier for most people. More than eight-in-ten (84%) say that science’s impact on society has been mostly positive, with relatively small variations across most segments of the public. And when those who say science has a positive impact are asked to expand on their thinking, more than half provide examples tied to advances in health care and medicine.

Partisans largely agree on the beneficial effects of science, with 88% of Republicans, 84% of independents and 83% of Democrats saying the impact is mostly positive. There are differences – though not large – tied to race, education and income.

Close to nine-in-ten non-Hispanic whites (87%) say the impact of science is mostly positive, compared with 76% of African Americans and 75% of Hispanics. Meanwhile, more than nine-in-ten college graduates (92%) say the impact is mostly positive, compared with 77% of those with a high school diploma or less education.

When asked for specific examples, roughly half (52%) of those who say science has had a mostly positive impact on society cite developments tied to medicine. The largest share of that group (32% of the total) names medical and health care in general, 24% cite disease research, cures or vaccines and 4% cite advances in the use of stem cells. Among the more frequent non-medical answers, 8% name space exploration and 7% cite the environment and initiatives to stop global warming as ways science has had a positive effect on our society. Another 7% cite advances in communications and computer technology and 6% cite technology in general.

| <b>Most See Science Having Mostly Positive Effect on Society</b> |                   |                   |       |
|--|-------------------|-------------------|-------|
|  | Mostly positive % | Mostly negative % | N     |
| Total public   | 84                | 6                 | 2,001 |
| Men  | 86                | 5                 | 1,010 |
| Women  | 81                | 8                 | 991   |
| 18-29  | 86                | 4                 | 264   |
| 30-49  | 84                | 6                 | 629   |
| 50-64  | 85                | 7                 | 617   |
| 65+  | 78                | 9                 | 464   |
| White  | 87                | 5                 | 1,479 |
| Black  | 76                | 13                | 196   |
| Hispanic   | 75                | 6                 | 191   |
| College grad+  | 92                | 3                 | 703   |
| Some college   | 86                | 6                 | 502   |
| HS or less   | 77                | 9                 | 784   |
| <i>Household income</i>  |                   |                   |       |
| \$75,000 or more   | 94                | 3                 | 556   |
| \$30k-74,999   | 86                | 6                 | 640   |
| Less than \$30,000   | 78                | 10                | 469   |
| Republican   | 88                | 6                 | 504   |
| Independent  | 84                | 6                 | 747   |
| Democrat   | 83                | 7                 | 579   |
| <i>Science knowledge</i>   |                   |                   |       |
| High   | 92                | 2                 | 640   |
| Medium   | 88                | 6                 | 643   |
| Low  | 74                | 10                | 718   |
| <i>Internet use</i>  |                   |                   |       |
| Users  | 87                | 5                 | 1,577 |
| Non-users  | 70                | 11                | 424   |
| <i>Religious affiliation</i>                                     |                   |                   |       |
| Total Protestant   | 83                | 7                 | 1,023 |
| White evang  | 83                | 7                 | 417   |
| White mainline   | 88                | 6                 | 356   |
| Black Protestant   | 76                | 12                | 159   |
| Total Catholic   | 83                | 7                 | 477   |
| White non-Hisp   | 87                | 7                 | 333   |
| Unaffiliated   | 84                | 5                 | 321   |
| <i>Attend services</i>   |                   |                   |       |
| Weekly or more   | 80                | 10                | 774   |
| Monthly/Yearly   | 85                | 5                 | 670   |
| Seldom/Never   | 87                | 4                 | 532   |

Because the share of people saying science has had a mostly negative effect is so small, the responses to the question asking for specific examples are too few for quantitative analysis. Among the most common responses cite concerns that science goes against one’s religion, concerns about the environment and the validity of global warming and concerns about vaccines and stem cell research.

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Positive effects of science:  
*“For one thing, the medical breakthroughs they have made over the years. I have a sister who has been living 20 years with breast cancer. She couldn’t have done that years ago.”*  
 Woman, 50.

More than eight-in-ten (83%) say that science has made life easier for most people, while one-in-ten (10%) say it has made life more difficult. Again, the percentages are lopsided across most demographic groups with large majorities saying that science has made life easier.

Negative effects of science:  
*“Science has a negative effect when it comes to stem cells. This is another way of promoting abortion.”*  
 Woman, 48.

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The public also holds largely positive views of science’s impact on health care, food and the environment, though the share saying they see a positive impact on health care (85%) is higher than the share for the other two (both

66%). At the same time, more than six-in-ten say they worry at least some (27% a lot, 36% some) whether new medicines and medical treatments have been carefully tested before they are made available to the public.

### Scientists Highly Regarded

Seven-in-ten Americans (70%) say scientists contribute a lot to the well-being of society, a share topped only by evaluations of the work done by members of the military (84%) and teachers (77%). Perceptions of scientists are virtually the same as those of medical doctors and just above those of engineers.

| <i>How much do each contribute to well-being of society?</i> | <u>A lot</u><br>% | <u>Some</u><br>% | <u>Not much/Nothing</u><br>% |
|--|-------------------|------------------|------------------------------|
| Members of the military                                      | 84                | 11               | 4                            |
| Teachers   | 77                | 17               | 4                            |
| <b>Scientists</b>  | <b>70</b>         | <b>23</b>        | <b>5</b>                     |
| Medical doctors  | 69                | 24               | 5                            |
| Engineers  | 64                | 25               | 6                            |
| Clergy   | 40                | 37               | 15                           |
| Journalists  | 38                | 41               | 17                           |
| Artists  | 31                | 43               | 22                           |
| Lawyers  | 23                | 46               | 27                           |
| Business executives  | 21                | 43               | 31                           |

The share saying that scientists contribute a lot to the well-being of society is high across the board, but college graduates are more likely to say this (80%) than those with some college (70%) or a high school diploma or less education (64%). Close to eight-in-ten (78%) of those earning \$75,000 or more say scientists contribute a lot, compared with 63% of those earning less than \$30,000.

The partisan differences, meanwhile, are slight. About three-quarters of Democrats (74%) say scientists contribute a lot, compared with 66% of Republicans and 69% of independents.

Three quarters (75%) of those who say humans have evolved— either through natural processes or guided by a supreme being – say scientists contribute a lot, compared with 63% of those who say humans have not evolved.

### Relatively Few See U.S. Scientific Achievements as Best in World

Fewer than two-in-ten Americans (17%) say that U.S. scientific achievements are the best in the world when compared with other industrialized nations. Almost half (47%) say the achievements are above average. A quarter (26%) rate them as average, while 5% see them as below average.

By comparison, more than four-in-ten Americans say the nation’s military is the best in the world. More than two-in-ten (22%) say the nation’s standard of living is the best and 19% say the same about the American political system. Only 15% say the nation’s health care is the best in the world, while 12% say the same about the U.S. economy.

| <i>Think U.S. ____ is...</i>   | <u>Best in world</u><br>% | <u>Above average</u><br>% | <u>Average</u><br>% | <u>Below average</u><br>% |
|--------------------------------|---------------------------|---------------------------|---------------------|---------------------------|
| Military                       | 42                        | 39                        | 13                  | 3                         |
| Standard of living             | 22                        | 41                        | 26                  | 9                         |
| Political system               | 19                        | 31                        | 29                  | 16                        |
| <b>Scientific achievements</b> | <b>17</b>                 | <b>47</b>                 | <b>26</b>           | <b>5</b>                  |
| Health care                    | 15                        | 23                        | 32                  | 27                        |
| Economy                        | 12                        | 22                        | 33                  | 31                        |

Public attitudes about the ranking of U.S. scientific achievements differ significantly from those of scientists, who are much more likely to characterize achievements in the United States as the best in the world (See Section 2).

## Affluent and College Grads More Likely to Say U.S. Best in Science

Impressions of how U.S. scientific achievements compare to other industrialized nations differ based on income, education and gender. For example, a quarter of those with household incomes of \$75,000 a year or more say scientific achievements in the United States are the best in the world, compared with 14% of those earning less than \$30,000. At the same time, people earning less than \$30,000 are nearly twice as likely as those earning at least \$75,000 to rank U.S. scientific achievements as average or below average (38% vs. 20%).

A quarter of college graduates (24%) rank U.S. accomplishments as the best in the world, compared with 14% of those with some college and 16% of those with a high school diploma or less. Men are also more likely than women to rate U.S. scientific accomplishments as best in the world (22% vs. 13%). Meanwhile, Republicans (22%) are slightly more likely than Democrats (16%) or independents (16%) to say the same.

People who follow news about scientific developments are more likely than those who do not to rank the achievements of the U.S. as the best in the world. Close to a quarter (23%) of high consumers of science media see U.S. scientific achievements as the best in the world, compared with 13% of those who say they do not regularly watch or read any science channels, magazines or websites.

Only 12% of those ages 18-29 say U.S. achievements are the best in the world. That share rises to 18% for those 30-49, 20% for those 50-64 and 21% for those 65 and older.

## Digging Deeper into Science's Impact

More than eight-in-ten Americans (85%) say the effect of science on the quality of health care has been mostly positive, while 10% say it has been mostly negative. When it comes to how science has affected the environment and food, most still offer

| <i>U.S. scientific achievements are...</i> | Best in world | Above average | Average | Below average |
|--|---------------|---------------|---------|---------------|
|  | %             | %             | %       | %             |
| Total public                               | 17            | 47            | 26      | 5             |
| Men  | 22            | 47            | 21      | 5             |
| Women                                      | 13            | 47            | 31      | 4             |
| Republican                                 | 22            | 47            | 25      | 3             |
| Democrat                                   | 16            | 45            | 30      | 5             |
| Independent                                | 16            | 54            | 22      | 5             |
| College grad+                              | 24            | 54            | 17      | 4             |
| Some college                               | 14            | 53            | 25      | 5             |
| HS or less                                 | 16            | 40            | 32      | 6             |
| 18-29                                      | 12            | 50            | 29      | 6             |
| 30-49                                      | 18            | 45            | 27      | 6             |
| 50-64                                      | 20            | 48            | 23      | 5             |
| 65+  | 21            | 46            | 24      | 3             |
| <i>Household income</i>                    |               |               |         |               |
| \$75,000 or more                           | 25            | 54            | 17      | 3             |
| \$30k-74,999                               | 15            | 50            | 28      | 6             |
| Less than \$30,000                         | 14            | 43            | 33      | 5             |
| <i>Science media consumption</i>           |               |               |         |               |
| High                                       | 23            | 49            | 21      | 5             |
| Medium                                     | 17            | 48            | 25      | 5             |
| Low  | 13            | 43            | 31      | 5             |

| <i>Effect of science on the quality of...</i> | Mostly positive | Mostly negative |
|---|-----------------|-----------------|
|   | %               | %               |
| Health care                                   | 85              | 10              |
| The environment                               | 66              | 23              |
| Food  | 66              | 24              |

favorable assessments, though there is less consensus. Two-thirds (66%) say science has had a mostly positive effect on both the quality of food and on the quality of the environment. Nearly a quarter (24% for food, 23% for the environment) say the impact in each of these areas has been mostly negative.

A closer look at impressions of science’s impact on food shows mostly small variations across subgroups. Men are slightly more likely than women to see a positive impact on food (71% vs. 62%). And there is a similar difference between those with at least some college experience (70%) and those with a high school diploma or less education (63%).

But there is a larger divide between white and black Americans. Seven-in-ten whites say the impact of science on food has been mostly positive, while just over half of African Americans (51%) agree. Hispanics fall in between (62%). About two-in-ten whites (21%) see the impact as mostly negative, compared with close to four-in-ten blacks (38%) and 26% of Hispanics. These racial and ethnic differences exist when it comes to science’s effect on health care as well as the overall effect on society in general.

| <i>Impact of science on <b>food</b> quality</i> | Mostly <u>positive</u><br>% | Mostly <u>negative</u><br>% |
|---|-----------------------------|-----------------------------|
| Total public                                    | 66                          | 24                          |
| Men   | 71                          | 20                          |
| Women   | 62                          | 27                          |
| White   | 70                          | 21                          |
| Black   | 51                          | 38                          |
| Hispanic  | 62                          | 26                          |
| College grad+                                   | 70                          | 21                          |
| Some college                                    | 70                          | 23                          |
| HS or less                                      | 63                          | 25                          |

**Concerns about Medical Testing**

Though science’s effect on health care is overwhelmingly seen as positive, many Americans express concerns about whether the newest medicines and medical treatments have been carefully tested before being made available to the public. About six-in-ten (62%) say they worry a lot (27%) or some (36%) about whether the medicines or treatments receive sufficient testing. Close to four-in-ten (37%) say they do not worry much (22%) or at all (15%).

| <i>Worries about testing of <b>medicines</b></i> | A lot/<br><u>Some</u><br>% | Not much/<br><u>Not at all</u><br>% |
|--|----------------------------|-------------------------------------|
| Total public                                     | 62                         | 37                                  |
| Men  | 58                         | 40                                  |
| Women  | 66                         | 34                                  |
| White  | 59                         | 41                                  |
| Black  | 70                         | 27                                  |
| Hispanic   | 73                         | 27                                  |
| College grad+                                    | 55                         | 44                                  |
| Some college                                     | 61                         | 38                                  |
| HS or less                                       | 67                         | 32                                  |

A larger share of women (66%) than men (58%) say they worry at least some about medical testing. African Americans (70%) and Hispanics (73%) also are more likely than whites (59%) to say they worry at least some about sufficient testing of medicines or treatments.

## **Scientific and Technological Advances**

Most Americans say they see more good than harm from major scientific and technological advances in specific areas such as space exploration, human genetics, development of the internet and nuclear energy. About three-quarters (74%) say that space exploration has done more good for society than harm (17%).

Similar shares say the same about research into human genetics (72% more good vs. 19% more harm) and development of the internet (70% more good vs. 22% more harm). Research on nuclear energy is also seen in a largely positive light with close to two-thirds (65%) saying it has done more good than harm; 27% say it has done more harm than good.

| <b>Most Science and Technology<br/>Does More Good than Harm</b> |                                     |                                     |
|---|-------------------------------------|-------------------------------------|
| <i>Effect of...</i>   | <u>More harm<br/>than good</u><br>% | <u>More good<br/>than harm</u><br>% |
| Space exploration   | 17                                  | 74                                  |
| Human genetics research   | 19                                  | 72                                  |
| Development of internet   | 22                                  | 70                                  |
| Nuclear energy research   | 27                                  | 65                                  |

## Science and Religion in Conflict?

More than half of the public (55%) says that science and religion are “often in conflict.” Close to four-in-ten (38%) take the opposite view that science and religion are “mostly compatible.” Yet the balance is reversed when people are asked about science’s compatibility with their own religious beliefs. Only 36% say science sometimes conflicts with their own religious beliefs and six-in-ten (61%) say it does not.

Highly observant Americans are among the most likely to see conflicts between science and their own religious beliefs. But less religiously observant people are more likely to see broader conflicts between science and religion in general. Among those who attend religious services at least weekly, 46% say they see a conflict between science and their religious beliefs (52% do not). Among those who seldom or never attend services, just 21% see a conflict. Yet 60% of those who seldom or never attend services believe science and religion are “often in conflict,” compared with 48% of Americans who attend religious services weekly or more often.

More than half of Catholics and Protestants (53% each) say that science and religion are often in conflict. About the same proportion of white evangelical Protestants (48%) say this, but white evangelicals are more likely than those in other religious groups to say that science conflicts with their own religious beliefs.

|                              | <b>Conflicts between Religion and Science</b>      |                |   |                |
|------------------------------|--|----------------|---|----------------|
|                              | <i>Are science and religion often in conflict?</i> |                | <i>Does science conflict with your religious beliefs?</i> |                |
|                              | <u>Yes</u><br>%                                    | <u>No</u><br>% | <u>Yes</u><br>%   | <u>No</u><br>% |
| Total public                 | 55   | 38             | 36  | 61             |
| Republican                   | 52   | 44             | 45  | 52             |
| Democrat                     | 62   | 33             | 33  | 64             |
| Independent                  | 52   | 42             | 34  | 63             |
| Conservative                 | 48   | 46             | 43  | 55             |
| Moderate                     | 60   | 35             | 34  | 64             |
| Liberal                      | 62   | 34             | 29  | 67             |
| College grad+                | 48   | 48             | 32  | 66             |
| Some college                 | 61   | 36             | 37  | 61             |
| HS or less                   | 57   | 33             | 38  | 57             |
| <i>Religious affiliation</i> |  |                |   |                |
| Total Protestant             | 53   | 41             | 42  | 56             |
| White evangelical            | 48   | 46             | 52  | 46             |
| White mainline               | 51   | 42             | 30  | 68             |
| Black Protestant             | 64   | 28             | 34  | 62             |
| Total Catholic               | 53   | 39             | 44  | 52             |
| White non-Hispanic           | 53   | 41             | 46  | 53             |
| Unaffiliated                 | 68   | 28             | 16  | 79             |
| <i>Attend services</i>       |  |                |   |                |
| Weekly or more               | 48   | 45             | 46  | 52             |
| Monthly/Yearly               | 58   | 35             | 38  | 60             |
| Seldom/Never                 | 60   | 33             | 21  | 74             |
| <i>Evolution position</i>    |  |                |   |                |
| Natural selection            | 61   | 35             | 24  | 74             |
| Evolved w/guidance           | 54   | 43             | 37  | 61             |
| Created as we are            | 56   | 38             | 48  | 49             |

When those who say science conflicts with their own beliefs are asked to describe the ways in which these conflicts arise, 41% refer specifically to evolution, creationism, Darwinism and debates about the origin of life. Another 15% cite differences over the beginning of life, primarily concerns about abortion (12%) but also cloning and birth control.

Among the other areas where people say science conflicts with their own religious beliefs are concerns about the use of stem cells (9%), denial of God (4%), issues surrounding the use of medicines and blood transfusions (3%) and conflicts with the Bible (2%).

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*I don't know what is going to happen to me after I pass. Religion tells me one thing and science tells me something completely different.*  
Man, 24

*As far as creation, I believe God created heaven and earth and man and woman, and scientists don't believe that.* Woman, 67

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While evolution is cited as the most common conflict between science and people's own religious beliefs, many people who reject evolution nevertheless do not see science and religion as often in conflict. Overall, 31% of Americans say that humans and other living things have existed in their present form since the beginning of time. Of those who hold this view, roughly half (48%) say that science sometimes conflicts with their religious beliefs, but about the same number (49%) say it does not. By comparison, among the 32% of

Americans who say humans evolved through natural selection, just 24% say they see a conflict between science and their religious beliefs while 74% do not.

Democrats are more likely to say science and religious beliefs often conflict (62%) than are Republicans or independents (52%). When it comes to whether science conflicts with one's own religious beliefs, Republicans are more likely to say "yes" (45%), compared with Democrats (33%) or independents (34%).

### **Science in the Pulpit**

About four-in-ten (42%) of those who attend religious services at least once a month say the clergy at their place of worship have spoken about science or scientific findings; more than half (56%) say the topic has not been raised.

Among all Protestants who attend services regularly, 46% say the clergy occasionally speak about science. That includes 48% of white evangelicals, 44% of white mainline Protestants and 40% of black Protestants. A smaller share of Catholics (35%) say science has been raised at church.

Of those who say their clergy occasionally speak about science or scientific findings, three-in-ten (30%) say the clergy at their church are usually supportive of science, while 11% say they are critical of science. A majority (52%) say the clergy's references to science are neither positive nor negative.

## SECTION 2: SCIENTISTS ASSESS THE STATE OF THEIR FIELD

Scientists hold overwhelmingly positive views about the current state of science in the United States. More than three-quarters (76%) say that this is generally a “good time” for science, and about as many (73%) say the same about their scientific specialty. That optimism extends to their views about careers in their specialty field; two-thirds (67%) believe this is a very good or good time to begin a career in their discipline.

American achievements in science are also seen in a very positive light. Nearly all (94%) scientists characterize the country’s scientific achievements as either “best in the world” (49%) or above average (45%) compared with other industrialized nations. And scientists’ assessments of the nation’s achievements in their scientific specialties are also quite positive (88% best in the world or above average).

At the same time, scientists say communication and education of the public are significant challenges for science today. Majorities rate television (83%) and newspaper (63%) coverage of science as only fair or poor, while fully 85% identify the public’s low level of scientific knowledge as a major problem for science.

In terms of public outreach, nearly eight-in-ten scientists (77%) say they often or occasionally talk with non-scientists about science or research findings. However, only about a quarter (24%) have heard or read about town halls or other public meetings where scientists and the public discuss controversial research issues. Among those who are aware of the town halls, overwhelming majorities say they have been at least fairly useful for the public (88%) and scientists (83%).

| Profile of the Scientist Sample  |    |      |
|--|----|------|
|  | %  | N    |
| Men  | 72 | 1875 |
| Women  | 26 | 613  |
| 18-34  | 20 | 359  |
| 35-49  | 19 | 448  |
| 50-64  | 33 | 882  |
| 65+  | 26 | 775  |
| White, non-Hispanic  | 81 | 2113 |
| Total non-white  | 16 | 326  |
| Asian, non-Hispanic  | 7  | 140  |
| US Born  | 81 | 2082 |
| Foreign-born citizen   | 9  | 231  |
| Non-citizen  | 9  | 193  |
| Employed   | 81 | 1990 |
| Retired  | 19 | 602  |
| Student  | 16 | 286  |
| <i>Employment sector*</i>  |    |      |
| Academic   | 63 | 1209 |
| Government   | 9  | 191  |
| Industry   | 15 | 308  |
| Non-profit   | 8  | 162  |
| Other  | 5  | 116  |
| <i>Field</i>   |    |      |
| Biological and Medical   | 51 | 1255 |
| Chemistry  | 14 | 348  |
| Geosciences  | 6  | 154  |
| Physics and Astronomy  | 8  | 229  |
| Other  | 19 | 497  |
| <i>Work primarily addresses...</i>   |    |      |
| Basic knowledge questions  | 49 | 1225 |
| Applied research questions   | 46 | 1167 |
| <i>Own work is interdisciplinary</i>   |    |      |
| Yes  | 81 | 2053 |
| No   | 18 | 456  |
| <i>In past 5 years, devoted all, most, or a lot of time to...</i>  |    |      |
| Research   | 66 | 1597 |
| Teaching   | 30 | 791  |
| Management and admin.  | 35 | 917  |
| Clinical practice  | 6  | 159  |
| Percentages are based on weighted data and may not add to 100% due to rounding and because only those who provided an answer are shown. Sample sizes are unweighted. |    |      |
| * Based on those who are employed.   |    |      |

**Good Times for Science**

Views about the current state of science are consistently positive across groups of scientists. Large majorities of those in physics and astronomy, chemistry, geosciences and biological and medical sciences say it is generally a good time for science generally as well as for their own disciplines.

**Rating U.S. Scientific Achievements**

About half (49%) of scientists characterize the scientific achievements of the United States as best in the world, and another 45% say the country’s achievements are above average when compared with those of other industrialized nations.

This stands in clear contrast to the views of the general public; only 17% say the country is best in the world in this area while another 47% say the country’s scientific achievements are above average. Nearly a third of the public (31%) rates the scientific achievements of the U.S. as average or below average. Only 6% of scientists say the same.

| <i>% saying this is a good time for....</i> | <u>Science</u><br>% | <u>Your scientific specialty</u><br>% |
|---|---------------------|---------------------------------------|
| All scientists                              | 76                  | 73                                    |
| <i>Field</i>                                |                     |                                       |
| Biological and Medical                      | 73                  | 73                                    |
| Chemistry                                   | 75                  | 69                                    |
| Geosciences                                 | 83                  | 77                                    |
| Physics and Astronomy                       | 79                  | 74                                    |

| <i>U.S. scientific achievements are...</i> | <b>Scientists</b>           |                            | <b>Public</b>               |
|--|-----------------------------|----------------------------|-----------------------------|
|  | <u>Science overall</u><br>% | <u>Your specialty</u><br>% | <u>Science overall</u><br>% |
| Best in the world                          | 49                          | 45                         | 17                          |
| Above average                              | 45                          | 43                         | 47                          |
| Average                                    | 5                           | 9                          | 26                          |
| Below average                              | 1                           | 2                          | 5                           |

Figures read down.

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*While the U.S. still remains best in the world in science, it is faltering. At international conferences I see many more interesting contributions from Europe and Japan than previously, and the U.S. investigators often are fewer and less innovative than previously.*  
Cell biologist, 72.

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Scientists hold American achievements in their specialty in similarly high regard. Nearly nine-in-ten (88%) scientists – and no fewer than 85% in any particular field – rate the scientific achievements of the United States in their disciplines as above average or best in the world.

## Greatest Achievement: Human Genome Project

More scientists name the Human Genome Project or other advances in genetics as the greatest U.S. scientific discovery or achievement of the past 20 years than mention any other breakthrough. Fully 39% cite the Human Genome Project, which identified all human genes and the complete sequence of DNA bases, or other progress in genetic research as the greatest U.S. scientific achievement or discovery of the last two decades.

Overall, more than half of scientists (55%) cite a biomedical or health accomplishment as the greatest scientific discovery of the past 20 years. Aside from the Human Genome Project, 9% cite a discovery in medicine and public health, and 4% mention stem cell research.

| <b>Greatest U.S. Scientific Achievements of Past 20 Years</b> |           |
|---|-----------|
|   | <b>%</b>  |
| <b>Biomedical/Health (Net)</b>                                | <b>55</b> |
| Human Genome/Genetics   | 39        |
| Medicine/Public health  | 9         |
| Stem cell research  | 4         |
| <b>Computers/Technology (Net)</b>                             | <b>10</b> |
| Internet/Computing  | 8         |
| <b>Space (Net)</b>  | <b>10</b> |
| Space, general  | 4         |
| Hubble Space Telescope  | 3         |
| <b>Climate/Environment research</b>                           | <b>3</b>  |

Open-ended question; multiple responses accepted. See topline for full results.

One-in-ten scientists (10%) cite an accomplishment in computers or technology and as many name achievements or discoveries involving space as the greatest of the past two decades. These include mentions of the Hubble Space Telescope (3%), the discoveries of dark energy and dark matter (1%), the expansion of the universe (1%) and discoveries on Mars (1%).

Older scientists are more likely than their younger counterparts to point to accomplishments relating to space as the greatest of the last 20 years: 17% of those 65 and older mention space, compared with 10% of 50-to-64 year-olds and just 5% of those younger than 50.

Generally, scientists are more likely to cite discoveries in their own or related fields than other specialties as the greatest U.S. scientific accomplishments of the last 20 years. Fully 63% of those in the biological and medical sciences and 57% of chemists name a biological or medical achievement; by comparison, just 43% of geoscientists and 33% of physicists or astronomers do so.

About a third (34%) of physicists and astronomers and 17% of geoscientists single out a space-related achievement, compared with just 5% of biological and medical scientists and 7% of chemists. And while 14% of geoscientists identify work related to climate change as the greatest U.S. scientific achievement, this is mentioned by only 2% or less of those in other scientific disciplines.

**No Consensus on Greatest Failure**

There is much less consensus among scientists about the country’s greatest scientific failure of the last 20 years. While 37% mention lack of progress on a particular scientific issue or problem, no single issue dominates. Just over one-in-ten (12%) name the lack of progress in alternative energy and sustainability as the country’s greatest scientific failure, while 7% cite a related failure to address climate change or environmental issues and 7% mention the lack of progress in stem cell research.

Additionally, 21% of scientists point to failures of the scientific community to communicate with and educate the public or American youth about science. Significant numbers of scientists also mention insufficient funding (14%) and the influence of politics on science (13%).

As with views of U.S. achievements, opinions about the country’s greatest scientific failure vary by field. Geoscientists are about twice as likely as those in other fields to mention lack of progress on climate change (14% vs. 7% or less). And fully 17% of physicists and astronomers specifically point to the cancellation of the Superconducting Super Collider; just 1% of those in other disciplines mention this.

| <b>Greatest U.S. Scientific Failures of Past 20 Years</b>  |           |
|--|-----------|
|  | <u>%</u>  |
| <b>Lack of Progress on Issues (Net)</b>  | <b>37</b> |
| Alternative energy/sustainability  | 12        |
| Climate change/environment   | 7         |
| Stem cells   | 7         |
| Cancellation of Super Collider   | 3         |
| <b>Knowledge/Communication (Net)</b>   | <b>21</b> |
| Education/training of young people   | 9         |
| Education/engagement of the public   | 6         |
| Communicating to the public  | 3         |
| Convincing public of evolution   | 3         |
| Convincing public of climate change  | 3         |
| <b>Funding/Support for Research (Net)</b>  | <b>14</b> |
| <b>Politicization/Commercialization (Net)</b>  | <b>13</b> |
| Political pressure/influence   | 6         |
| Bush administration  | 4         |
| <b>Space exploration/NASA</b>  | <b>3</b>  |
| <small>Open-ended question; multiple responses accepted.<br/>See topline for full results.</small> |           |

## Poor Marks for Science News Coverage

Scientists hold generally negative views of the quality of news coverage of scientific issues. A large majority (83%) of scientists characterize television news coverage of science as only fair or poor. Newspaper coverage earns somewhat less negative marks, but a majority (63%) also rates newspaper science coverage as only fair or poor.

|           | TV % | News-paper % |
|-----------|------|--------------|
| Excellent | 1    | 2            |
| Good      | 14   | 34           |
| Only fair | 48   | 48           |
| Poor      | 35   | 15           |

Figures read down.

About three-quarters (76%) of scientists say it is a

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*The biggest problem I see is the media's belief that we are all entitled to our own set of facts. Often giving credibility to points of view that are based on erroneous and/or sometimes misleading facts. Science is not relative. All points of view are not equal. Until the media learns that, science will continue to be reported poorly in the popular press.*  
Material scientist, 49.

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major problem for science that news reports do not effectively distinguish between well-founded scientific findings and those that are less well-founded. This view is widely shared among scientists in all fields, employment sectors and age groups. The issue of oversimplifying scientific findings in news media reports is of less concern, although nearly half of scientists (48%) also identify this as a major problem.

While scientists find fault with media coverage, an even greater percentage (85%) identifies limited public knowledge about science as a major problem for science in general, and this opinion is widely held across most groups of scientists.

About half of scientists (49%) say public expectations of quick solutions to problems is a major problem for science. In particular, scientists in the biological and medical sciences (52%) and chemists (50%) are likely to see this as a major problem for science, while somewhat fewer geoscientists (42%) and physicists or astronomers (41%) note this concern.

|   | Major problem % | Minor/not a problem % |
|---|-----------------|-----------------------|
| <i>That the <b>news media</b>...</i>                                    |                 |                       |
| Do not distinguish between well-founded findings and those that are not | 76              | 24                    |
| Oversimplify findings   | 48              | 51                    |
| <i>That the <b>public</b>...</i>  |                 |                       |
| Does not know very much about science                                   | 85              | 15                    |
| Expects solutions to problems too quickly                               | 49              | 51                    |

Figures read across.

## Importance of Media Coverage

Nearly four-in-ten scientists (37%) say it is very important (8%) or important (29%) for career advancement in their specialty areas to get their research covered by the news media. However, a majority of scientists (62%) say this is either not too important (48%) or not at all important (14%).

|                      |          |
|----------------------|----------|
|                      | <u>%</u> |
| Very important       | 8        |
| Important            | 29       |
| Not too important    | 48       |
| Not at all important | 14       |
| Figures read down.   |          |

Scientists who are not U.S. citizens are more likely than others to view news coverage of research findings as important for career advancement. A majority of non-citizens (62%) express this view, compared with 43% of foreign-born U.S. citizens, and 34% of those born in the United States. There are virtually no differences across scientific disciplines about the importance of getting news coverage for research findings.

## Scientists' Public Outreach

Most scientists say they at least occasionally talk with non-scientists about new research findings. Nearly four-in-ten (39%) say they do this often, while 48% say they occasionally discuss research findings with non-scientists. Just 13% say they rarely or never do this.

|                            | <u>Often</u> | <u>Occas-<br/>ionally</u> | <u>Rarely</u> | <u>Never</u> |
|----------------------------|--------------|---------------------------|---------------|--------------|
| <i>How often do you...</i> | %            | %                         | %             | %            |
| Talk with non-scientists   | 39           | 48                        | 11            | 2            |
| Talk with reporters        | 3            | 20                        | 31            | 45           |
| Write for a science blog   | 2            | 5                         | 11            | 82           |
| Figures read across.       |              |                           |               |              |

Nearly a quarter of scientists (23%) say they often (3%) or occasionally (20%) talk with reporters about new research findings. And while a large majority of scientists (82%) say they never *write* for science blogs, many *read* blogs. More than four-in-ten (42%) say they often (14%) or occasionally (28%) read blogs about science.

About half of geoscientists (51%) say they often talk with non-scientists about research, as do 46% of physicists and astronomers, 37% of biological and medical scientists, and 28% of chemists. A greater proportion of geoscientists talk to reporters about science, at least occasionally: 40% say they do so, compared with 27% of physicists and astronomers, 22% of biological and medical scientists and 14% of chemists.

As is the case with the public, blog-reading among scientists varies by age. More than half of scientists younger than 35 (54%) read science blogs at least occasionally. That compares with 46% of those 35 to 49 and 36% of those 50 and older.

### Few Aware of Science “Town Halls”

Town hall or other public meetings designed for scientists to discuss controversial issues related to scientific research with the public are not well-known within the scientific community. Just 24% of scientists say they have heard a lot (2%) or some (22%) about town hall meetings; 44% say they have not heard too much about these sessions while about a third (32%) says they have heard nothing at all. These levels of awareness vary only modestly across the scientific community.

| Heard about Town Halls for Scientists and Public |    |
|--|----|
|  | %  |
| A lot  | 2  |
| Some   | 22 |
| Not too much                                     | 44 |
| Nothing at all                                   | 32 |
| Figures read down.                               |    |

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*We scientists need to be more active in educating the non-science public and speaking out about issues, particularly when the media and government are not paying attention or are distorting the dialogue. Scientists have a responsibility to educate and communicate, not just in our labs and in our classrooms. Ecologist, 45.*

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Among the 24% of scientists who have heard about the town hall meetings, most see them as useful for all groups involved. Overwhelming majorities say they are at least fairly useful for the public (88%), the news media (88%), policy makers (87%) and scientists (83%).

Nearly half of scientists who are aware of these town hall meetings (49%) say they often talk with non-scientists about science research. That compares with 35% of those who are not familiar with these meetings.

### SECTION 3: FUNDING SCIENTIFIC RESEARCH

There is broad agreement among scientists that a lack of funding currently represents the biggest impediment to conducting high-quality scientific research. Nearly half (46%) cite a lack of funding for basic research as a very serious impediment to high-quality research, while another 41% say it is a serious impediment.

Scientists who primarily address basic knowledge questions are more likely than applied researchers to describe a lack of funding as a *very* serious obstacle to scientific research (52% vs. 41%). Still, overwhelming majorities in both groups of scientists (89% basic research, 84% applied research) see a lack of funding as at least a serious impediment.

A majority of scientists (56%) say that visa and immigration problems facing foreign scientists or students who want to work or study in the United States present either a very serious (17%) or serious (39%) obstacle to high-quality scientific research

in this country. This view is particularly widespread among scientists who are not U.S. citizens: 78% of non-citizens see visa problems as a serious impediment to research, with 43% saying it is a very serious obstacle. By comparison, a smaller majority of U.S. citizens (54%) say visa

| <i>Impediments to high-quality research...</i>   | <u>Very serious</u><br>% | <u>Serious</u><br>% | <u>Not too/Not at all serious</u><br>% |
|--|--------------------------|---------------------|--|
| Lack of funding for basic research               | 46                       | 41                  | 12                                     |
| Visa problems for foreign students & scientists  | 17                       | 39                  | 36                                     |
| Regulations on animal research                   | 6                        | 21                  | 59                                     |
| Regulations on use of US technology overseas     | 4                        | 17                  | 48                                     |
| Implementation of human subjects rules           | 4                        | 15                  | 50                                     |
| Conflict of interest rules used by science pubs. | 2                        | 10                  | 73                                     |
| Figures read across.                             |                          |                     |  |

problems for foreign scientists and students are a serious impediment to high-quality research, with just 14% calling it very serious.

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*The biggest issue in science is steady funding. The last 10 years has seen times where funding doubled and then stagnated. This puts tremendous pressure on basic scientists and discourages young scientists.*  
Geneticist, 51.

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Far fewer scientists see other factors as presenting serious obstacles to high-quality research. Just 27% say that regulations on the use of animals in research are very serious (6%) or serious (21%) impediments to research; more than half (59%) say these regulations are not serious impediments. Even among researchers who have worked on projects involving animal subjects in the past five years – roughly a third of the scientists interviewed – only about three-in-ten (31%) see restrictions on animal research as a serious impediment.

Just 21% of scientists say that regulations to prevent U.S. technology from being misused overseas are a serious impediment to high-quality research. Physicists and astronomers are far more likely than those in other disciplines to see these regulations as a serious barrier to research (40%).

About one-in-five scientists (19%) say the way that institutional review boards implement rules on human subjects is a serious impediment to high-quality research. Scientists who have worked on a research project with human subjects in the past five years are about twice as likely as those who have not worked with human subjects (31% vs. 16%) to see this as a serious impediment.

**Funders’ Priorities**

In general, scientists say that most of the funders of scientific research in their field emphasize low-risk, low-reward projects over high-risk projects that have the potential for scientific breakthroughs.

About six-in-ten (59%) say that when it comes to funding for research in their scientific specialty, most funders place greater emphasis on “projects expected to make incremental scientific progress that have lower risk of failure.” Just 5% say research funders emphasize “projects with the potential for scientific breakthroughs, but with higher risk of failure,” while 28% say funders emphasize both types of projects about equally.

| <b>Most Say Research Funders Emphasize Low-Risk, Low-Reward Approach</b>     |                |                          |      |     |              |
|--|----------------|--------------------------|------|-----|--------------|
| <i>In funding research in your field, most funders emphasize projects...</i> | All scientists | ----Scientific field---- |      |     |              |
|  |                | Bio/ Med                 | Chem | Geo | Phys/ Astron |
|  | %              | %                        | %    | %   | %            |
| With lower risk, expected to make incremental progress                       | 59             | 64                       | 56   | 55  | 48           |
| With potential for breakthroughs but w/ higher risk of failure               | 5              | 5                        | 6    | 8   | 8            |
| Both types equally   | 28             | 27                       | 31   | 29  | 35           |

Figures read down.

Comparable shares of scientists working in applied (62%) and basic (60%) research say that most research funders in their fields emphasize lower risk projects expected to make incremental progress. Across scientific disciplines, those working in the biological and medical sciences are more likely than others to say that most funders stress low-risk projects.

### Most Decry Funding Chase

About three-quarters of the scientists surveyed (76%) say that the incentive to do research where funding is readily available has too much influence on the direction of research in their specialty. Roughly two-thirds (66%) also say a focus on projects that will yield results quickly has too much influence on the direction of research. These views are widely shared across scientific disciplines. Fewer scientists (40%) see an emphasis on developing marketable products as having too much influence on research in their field.

| <i>Has too much influence on research in your field...</i> | <u>Yes</u><br>% | <u>No</u><br>% |
|--|-----------------|----------------|
| Incentive to do research where funding is available        | 76              | 20             |
| Focus on projects that will yield results quickly          | 66              | 31             |
| Political groups or officials                              | 50              | 47             |
| Emphasis on developing marketable products                 | 40              | 56             |

Figures read across.

Half of scientists (50%) say that political groups or officials have too much influence on the direction of research in their specialty, while 47% disagree. Scientists who primarily address applied research questions (55%) are more likely than those involved in basic research (45%) to say that political groups or officials have too much influence. In addition, more scientists working in government (62%) and industry (56%) say political groups or officials have too much influence than do those in non-profits (45%) or academia (45%).

### The Color of Money

Many scientists say money also has another impact on their profession – by inducing colleagues to pursue marketable research that has only marginal benefits for science. Nearly half of the scientists interviewed (47%) say that the possibility of making a lot of money leads many in their specialty to pursue “projects that yield marketable products but do not advance science very much.”

| <i>Possibility of making a lot of money leads many scientists in your specialty to...</i> | <u>Yes</u><br>% | <u>No</u><br>% |
|---|-----------------|----------------|
| Pursue marketable projects that do little to advance science                              | 47              | 49             |
| Pursue creative research ideas  | 32              | 63             |
| Cut corners on quality  | 26              | 68             |
| Violate ethical principles  | 11              | 84             |

Figures read across.

Roughly two-thirds (68%) of scientists working in industry say that possible financial rewards lead some in their specialty to pursue projects that yield marketable products, but do little to advance science. By comparison, only about four-in-ten of those working in government (43%), academia (43%) or for non-profits (42%) say this.

Yet scientists working in industry also see a potential benefit from those in their field reaping a possible financial gain: 42% say that the prospect of making a lot of money leads researchers in their field to pursue creative research ideas, which is substantially greater than the percentages of those working in government or other sectors expressing this view.

| <i>Possibility of making a lot of money leads many scientists in your specialty to...</i> | ----- <i>Employed by</i> ----- |                 |         |                 |                  |
|---|--------------------------------|-----------------|---------|-----------------|------------------|
|   | All scientists %               | Aca-<br>demic % | Gov't % | Indus-<br>try % | Non-<br>profit % |
| Pursue marketable projects that do little to advance science                              | 47                             | 43              | 43      | 68              | 42               |
| Pursue creative research  | 32                             | 32              | 23      | 42              | 31               |
| Cut corners on quality  | 26                             | 26              | 28      | 33              | 21               |
| Violate ethical principles  | 11                             | 10              | 13      | 9               | 7                |

For the most part, scientists – those in industry and elsewhere – do not see the prospect of personal financial gain leading colleagues to cut corners on research quality or to violate ethical standards. Overall, about a quarter (26%) says the possibility of making a lot of money leads colleagues to cut corners in research while 11% say it has led scientists in their specialty to pursue research that violates ethical standards.

### Government Dominates Research Funding

The federal government – more specifically, two government agencies – plays a dominant role in funding research, according to scientists. When asked to name the most important sources of funding within their scientific specialty, fully 84% list one or more government agencies.

Overwhelming percentages of scientists working in basic (91%) and applied research (81%) cite federal government sources as among the most important in their specialty, as do more than eight-in-ten across all scientific disciplines.

| <i>Most important funding sources in your specialty...</i> | ----- <i>Scientific Field</i> ----- |               |        |       |                   |
|--|-------------------------------------|---------------|--------|-------|-------------------|
|  | All scientists %                    | Bio/<br>Med % | Chem % | Geo % | Phys/<br>Astron % |
| Federal Gov't (Net)  | 84                                  | 89            | 84     | 93    | 86                |
| Nat'l Inst. Health   | 49                                  | 65            | 59     | 6     | 8                 |
| Nat'l Science Found.                                       | 47                                  | 42            | 56     | 70    | 62                |
| Dep't of Defense   | 14                                  | 9             | 18     | 16    | 33                |
| Dep't of Energy  | 13                                  | 6             | 18     | 24    | 45                |
| Dep't of Agriculture                                       | 7                                   | 11            | 3      | 2     | 0                 |
| NASA   | 5                                   | 2             | 3      | 25    | 21                |
| Dep't of Commerce (NOAA)                                   | 4                                   | 3             | 2      | 27    | 3                 |
| Other federal agency                                       | 9                                   | 8             | 5      | 23    | 5                 |
| Non-government (Net)                                       | 50                                  | 55            | 53     | 35    | 28                |
| Foundations/non-profits                                    | 30                                  | 39            | 25     | 12    | 7                 |
| Industry/business  | 20                                  | 19            | 27     | 14    | 16                |
| Universities   | 6                                   | 6             | 4      | 8     | 6                 |

Open-ended question, up to four responses accepted; figures add to more than 100%.

Nearly half of scientists (49%) specify the National Institutes of Health (NIH) among the most important sources funding their research area; and roughly the same number (47%) cite the

National Science Foundation (NSF). The shares mentioning each of these government agencies nearly equals the proportion (50%) citing *any* kind of non-government funding source as most important.

As might be expected, NIH is particularly important in funding biological and medical sciences; nearly two-thirds of the scientists in that field (65%) name NIH as among the most important funding sources in their specialty. A majority of chemists (59%) also name NIH as among the most important funders in their discipline.

The NSF is cited most frequently by geoscientists (70%) and physicists and astronomers (62%) and by a majority of chemists (56%). The Department of Energy, mentioned by 13% of scientists overall, is a particularly important funding source in physics and astronomy (45%). In addition, a third of physicists and astronomers (33%) cite the Department of Defense among the most important funding sources in their field, far more than do scientists working in other specialties.

Half of all scientists (50%) cite one or more non-government funding source – including foundations, non-profits and industry – as among the most important for their specialty. Scientists working in applied research (57%) are more likely than those working in basic research (46%) to mention a non-government funding source as most important. Among scientific specialties, a majority of those working in biological and medical sciences (55%) cites non-government sources as among the most important, as do 53% of chemists. Far fewer of those working in geosciences (35%) and in physics and astronomy (28%) point to non-government funding sources as most important.

Among non-government funding sources, foundations and non-profits are mentioned by more scientists than industry and business sources (30% vs. 20%). This is particularly true for those working in biological and medical sciences, who are twice as likely to name non-profit (39%) as business (19%) sources among the most important to their field. By contrast, those working in physics and astronomy are more likely to cite industry (16%) than non-profit (7%) sources.

Even among scientists who themselves work for business or industry employers, the

| <b>Industrial Scientists Say Gov't Is Bigger Funding Source than Industry</b> |                                 |
|---|---------------------------------|
| <i>Most important funding sources in <b>your</b> specialty...</i>             | <u>Industry scientists</u><br>% |
| <b>Federal Gov't (net)</b>  | <b>64</b>                       |
| Nat'l Inst. Health  | 26                              |
| Nat'l Science Found.  | 22                              |
| Dep't of Defense  | 16                              |
| Dep't of Energy   | 14                              |
| Other federal agency  | 17                              |
| Non-government funding (net)  | 64                              |
| <b>Industry</b>   | <b>52</b>                       |
| Foundations/non-profits   | 14                              |
| Universities  | 3                               |

Open-ended question, up to four responses accepted; figures add to more than 100%.

government is seen as a significant source of funding. Nearly two-thirds (64%) list one or more government sources as among the most important to their field of scientific specialty, with 26% explicitly mentioning NIH and 22% mentioning NSF. Roughly half (52%) list industry sources as most important within their field.

**Public’s View: Government Funding Needed**

For its part, the general public endorses the idea that government outlays for research are necessary for scientific progress. Six-in-ten (60%) say “government investment in research is essential for scientific progress”; only about half as many (29%) say “private investment will ensure that enough scientific progress is made even without government investment.”

As is often the case with opinions about the role of government, there is a substantial partisan divide in views of government investment in scientific research. Fewer than half of conservative Republicans (44%) say that government investment in research is essential for scientific progress; 48% of conservative Republicans say private investment will ensure that scientific progress is made. By comparison, 56% of moderate and liberal Republicans, 59% of independents and a much larger majority of Democrats (71%) say that government investment in research is essential.

|                         | Government investment is essential<br>% | Private investment is enough<br>% |
|-------------------------|---|-----------------------------------|
| Total public            | 60                                      | 29                                |
| 18-29                   | 66                                      | 24                                |
| 30-49                   | 63                                      | 27                                |
| 50-64                   | 60                                      | 32                                |
| 65+                     | 50                                      | 34                                |
| College grad+           | 67                                      | 27                                |
| Some college            | 65                                      | 29                                |
| HS or less              | 55                                      | 30                                |
| Conservative Republican | 44                                      | 48                                |
| Mod/Lib Republican      | 56                                      | 32                                |
| Independent             | 59                                      | 30                                |
| Cons/Mod Democrat       | 70                                      | 22                                |
| Liberal Democrat        | 75                                      | 19                                |
| Figures read across.    |   |                                   |

Regardless of whether they see government investment as essential to scientific progress, large majorities say that government investments in science do pay off. Nearly three-quarters of the public (73%) say that government investments in basic scientific research pay off in the long run, while a similar percentage (74%) holds that investments in engineering and technology pay off in the long run.

|                           | Payoff in long run? |         |
|---------------------------|---------------------|---------|
|                           | Yes<br>%            | No<br>% |
| Gov’t investments in...   |                     |         |
| Basic scientific research | 73                  | 18      |
| Engineering & technology  | 74                  | 17      |
| Figures read across.      |                     |         |

Opinions about these investments vary little across political and demographic groups. Eight-in-ten Democrats (80%) say that government investments in basic science research pay off in the long run, as do 72% of independents and 68% of Republicans. Views about whether

government engineering and technological investments pay off largely mirror those about basic science investments.

### Stable Support for Science Spending

Consistent with views about the role of government investment in science, most Americans would not cut funding for scientific research if given the opportunity to shape the federal budget. Overall, about four-in-ten (39%) say they would increase spending on scientific research if they were making up the federal budget. This is far less than the proportions in favor of increased federal spending for education (67%), veterans' benefits and services (63%), health care (61%) and Medicare (53%).

However, the public's support for increased spending has declined for many policy areas, while opinions about government spending on scientific research have changed little since 2001.

Currently, 39% say they would increase spending on scientific research; about the same share (40%) say they would keep spending the same; 14% say they would decrease the budget for scientific research. In April 2001, 41% said they would increase spending, 46% favored keeping spending the same, while 10% favored less spending for scientific research.

Even as overall public views have remained fairly stable, partisan differences over spending on scientific research have widened considerably. This mirrors a wider partisan gap in views about federal spending in other areas as well.

In April 2001, there was little difference in partisan opinions about spending on science. Roughly four-in-ten independents (43%), Democrats (38%) and Republicans (37%) favored increased spending. Today, about half (51%) of Democrats favor increasing spending on science, up 13 points from 2001; among Republicans, just 25% support increasing

|   | April<br>2001 | June<br>2009 | <i>Change</i> |
|---|---------------|--------------|---------------|
| <i>Support increased federal spending on...</i> | <i>%</i>      | <i>%</i>     |               |
| Education                                       | 76            | 67           | -9            |
| Veterans benefits                               | 58            | 63           | +5            |
| Health care                                     | 71            | 61           | -10           |
| Medicare  | 70            | 53           | -17           |
| Combating crime                                 | 55            | 45           | -10           |
| Aid for unemployed                              | --            | 44           | --            |
| Environmental protection                        | 48            | 43           | -5            |
| Energy  | 52            | 41           | -11           |
| Military defense                                | 47            | 40           | -7            |
| <b>Scientific research</b>                      | <b>41</b>     | <b>39</b>    | <b>-2</b>     |
| Agriculture                                     | 46            | 35           | -11           |
| Anti-terror defenses                            | --            | 35           | --            |
| Aid to world's needy                            | --            | 26           | --            |
| State Dept. & embassies                         | 11            | 9            | -2            |

|   | Total<br>public | Rep      | Dem      | Ind      | R-D<br><i>diff</i> |
|---|-----------------|----------|----------|----------|--------------------|
| <i>Spending on... scientific research</i> | <i>%</i>        | <i>%</i> | <i>%</i> | <i>%</i> |                    |
| <b>June 2009</b>                          |                 |          |          |          |                    |
| Increase                                  | 39              | 25       | 51       | 40       | -26                |
| Keep the same                             | 40              | 46       | 39       | 37       | +7                 |
| Decrease                                  | 14              | 21       | 8        | 14       | +13                |
| <b>April 2001</b>                         |                 |          |          |          |                    |
| Increase                                  | 41              | 37       | 38       | 43       | -1                 |
| Keep the same                             | 46              | 48       | 50       | 44       | -2                 |
| Decrease                                  | 10              | 10       | 10       | 11       | 0                  |

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

the budget for scientific research, down 12 points over the same period. Opinion among independents has changed little (40% favor increased spending today, 43 % in 2001).

## SECTION 4: SCIENTISTS, POLITICS AND RELIGION

Politics and science have become entangled on numerous occasions over the past several years. Conservatives have grown increasingly skeptical of the scientific evidence for human-induced climate change, even as climate scientists argue that this evidence is incontrovertible. Battles over the teaching of evolution in the public schools have continued to generate controversy. And most scientists say they believe claims that the Bush administration suppressed some research findings by government scientists.

This issue resonates strongly with scientists, but not with the general public. An overwhelming majority of scientists say they have heard a lot (55%) or a little (30%) about

claims that the Bush administration did not allow government scientists to report findings that contradicted administration policy. By contrast, just 10% of the public heard a lot about the claims and 34% heard a little; most say they have heard nothing at all about it.

| Bush Administration and Science   |               |                   |
|---|---------------|-------------------|
| <i>Claims that gov't scientists could not report findings that conflicted w/ admin. positions</i> | <u>Public</u> | <u>Scientists</u> |
|   | %             | %                 |
| Heard a lot   | 10            | 55                |
| Heard a little  | 34            | 30                |
| Heard nothing /Don't know   | 56            | 14                |
| <i>These claims are...</i>  |               |                   |
| True  | 28            | 77                |
| False   | 9             | 6                 |
| Don't know  | 7             | 3                 |
| <i>Heard nothing about claims</i>   | 56            | 14                |
| <i>During Bush administration, this happened...</i>   |               |                   |
| More often  | 17            | 71                |
| Less often  | 2             | 1                 |
| About as often  | 8             | 5                 |
| Don't know  | 1             | *                 |
| <i>Claims were false or don't know</i>  | 16            | 9                 |
| <i>Heard nothing about claims</i>   | 56            | 14                |

Figures read down. All percentages are based on total.

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*I am pleased that President Obama is returning science to a more appropriate role within government – allowing for unbiased reporting of scientific information and eliminating political tests for appointments to scientific advisory committees.* Neuroscientist, 66.

About three-quarters of scientists (77%) believe the claims about the Bush administration are true, while just 6% say they are false. And virtually all of the scientists who say these claims are true – 71% of scientists overall – believe that these practices occurred more often during the Bush administration than during previous administrations.

Among the public, most of those who heard about the claims about the Bush administration and science say they are true, but this constitutes a relatively small proportion of the public overall (28%). And just 17% of the public says that, compared with previous administrations, the Bush administration more often prevented government scientists from reporting research findings that conflicted with the administration's point of view.

## Scientists and Politics

A large majority of the public (76%) and nearly all scientists (97%) say that it is appropriate for scientists to become actively involved in political debates on controversial issues such as stem cell research and nuclear power.

Among the public, substantial majorities of Democrats (80%), independents (76%) and Republicans (75%) say it is appropriate for scientists to take an active political role on such issues. While older Americans (those older than 50) and less educated people are somewhat more likely to see scientists' political involvement as inappropriate, majorities in all major demographic and political groups find this appropriate.

Most Americans do not see scientists as a group as particularly liberal or conservative. Nearly two-thirds of Americans (64%) say they think of scientists as "neither in particular"; 20% see them as politically liberal and 9% say they are politically conservative.

In contrast, most scientists (56%) perceive the scientific community as politically liberal; just 2% think scientists are politically conservative. About four-in-ten scientists (42%) concur with the majority public view that scientists, as a group, are neither in particular.

|  | <u>Public</u> | <u>Scientists</u> |
|--|---------------|-------------------|
| <i>Scientists becoming actively involved in political debates...</i> | %             | %                 |
| Appropriate  | 76            | 97                |
| Not appropriate  | 18            | 3                 |
| Don't know   | 5             | *                 |
| <i>Scientists as a group are...</i>                                  |               |                   |
| Politically liberal  | 20            | 56                |
| Politically conservative   | 9             | 2                 |
| Neither in particular  | 64            | 42                |
| Don't know   | 8             | 1                 |

Figures read down.

|                          | <u>Public</u> | <u>Scientists</u> |
|--------------------------|---------------|-------------------|
| <i>Party Affiliation</i> | %             | %                 |
| Republican               | 23            | 6                 |
| Democrat                 | 35            | 55                |
| Independent              | 34            | 32                |
| Other/none               | 4             | 4                 |
| <i>Party w/ leaners</i>  |               |                   |
| Republican/Lean Rep.     | 35            | 12                |
| Democrat/Lean Dem.       | 52            | 81                |
| <i>Ideology</i>          |               |                   |
| Conservative             | 37            | 9                 |
| Moderate                 | 38            | 35                |
| Liberal                  | 20            | 52                |
| Very liberal             | 5             | 14                |

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*I think scientists have a responsibility to become more involved in the public discourse about important scientific issues, including climate change, stem cells, deforestation, vaccines or whatever other issues arise in the future ... There is too much misinformation out there and real, genuine knowledge, facts, reasoning can be overwhelmed by louder voices.*  
Neuroscientist, 29.

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The scientists' belief that the scientific community is politically liberal is largely accurate. Slightly more than half of scientists (52%) describe their own political views as liberal, including 14% who describe themselves as very liberal. Among the general public, 20% describe themselves as liberal, with just 5% calling themselves very liberal.

Most scientists identify as Democrats (55%), while 32% identify as independents and just 6% say they are

Republicans. When the leanings of independents are considered, fully 81% identify as Democrats or lean to the Democratic Party, compared with 12% who either identify as Republicans or lean toward the GOP. Among the public, there are far fewer self-described Democrats (35%) and far more Republicans (23%). Overall, 52% of the public identifies as Democratic or leans Democratic, while 35% identifies as Republican or leans Republican.

Majorities of scientists working in academia (60%), for non-profits (55%) and in government (52%) call themselves Democrats, as do nearly half of those working in private industry (47%).

|                          | Rep<br>% | Dem<br>% | Ind<br>% |
|--------------------------|----------|----------|----------|
| All scientists           | 6        | 55       | 32       |
| <i>Employment sector</i> |          |          |          |
| Government               | 7        | 52       | 33       |
| Academic                 | 5        | 60       | 30       |
| Industry                 | 10       | 47       | 37       |
| Non-profit               | 3        | 55       | 32       |
| <i>Field</i>             |          |          |          |
| Biological and Medical   | 6        | 58       | 31       |
| Chemistry                | 9        | 49       | 37       |
| Geosciences              | 4        | 62       | 25       |
| Physics and Astronomy    | 6        | 53       | 35       |

Figures read across.

**Gaps in Political Values**

The gap between the scientists’ political views and the public’s is seen across a broad spectrum of topics and issues. A far smaller share of scientists (40%) than the public (57%) agrees with the statement “when something is run by the government, it is usually inefficient and wasteful.”

Scientists also are less likely than the public to say that business strikes a fair balance between profits and the public interest: Just 20% of scientists express this view, compared with 37% of the public. And while 78% of scientists say that the government has a responsibility to care for those unable to care for themselves, a smaller majority of the general public (63%) agrees.

Just 14% of scientists agree that “we have gone too far in pushing equal rights in this country.” That compares with 41% of the public. Just a third of scientists – but a majority of the public (53%) – agrees that “the best way to ensure peace is through military strength.” (For more on the public’s political values and belief, see [“Independents Take Center Stage in Obama Era,”](#) May 21, 2009.)

|  | Agree<br>% | Disagree<br>% |
|--|------------|---------------|
| <i>When something is run by the government, it is usually inefficient and wasteful</i>                     |            |               |
| Scientists   | 40         | 58            |
| Public   | 57         | 39            |
| <i>Business corps generally strike fair balance bet. profits, serving the public interest</i>              |            |               |
| Scientists   | 20         | 78            |
| Public   | 37         | 58            |
| <i>It is the responsibility of the government to take care of people who can't take care of themselves</i> |            |               |
| Scientists   | 78         | 19            |
| Public   | 63         | 33            |
| <i>We have gone too far in pushing equal rights in this country</i>  |            |               |
| Scientists   | 14         | 83            |
| Public   | 41         | 56            |
| <i>The best way to ensure peace is through military strength</i>   |            |               |
| Scientists   | 33         | 65            |
| Public   | 53         | 42            |

Figures read across; general public results from Pew Values Survey conducted March 31-April 21.

## Religious Belief and Affiliation

The United States is a highly religious nation, especially by comparison with most Western industrialized democracies. Most Americans profess a belief in God (83%), and 82% are affiliated with a religious tradition. Scientists are different. Just a third (33%) say they believe in God, while 18% say they believe in a universal spirit or higher power and 41% say they don't believe in either. Just less than half of the scientists interviewed (48%) say they have a religious affiliation, while as many (48%) say they are not affiliated with a religious tradition.

A narrow majority of the U.S. public (51%) identifies as Protestant, including those who just call themselves "Christian." About a quarter (24%) is Roman Catholic. The ratio of Protestant to Catholic identification is similar among scientists, though far fewer scientists are affiliated with either (20% Protestant, 10% Catholic). Nearly one-in-ten scientists (8%) are Jewish. By comparison, only about 2% of the U.S. population is Jewish. Among the large group of religiously unaffiliated scientists, about equal numbers describe themselves as "nothing in particular" (20% of all scientists) and as atheists (17%); 11% say they are agnostic.

Religious belief among scientists varies somewhat by sex, age and scientific specialty. Younger scientists are substantially more likely than their older counterparts to say they believe in God. In addition, more chemists than those in other specialties say they believe in God. More men (44%) than women (36%) say they believe *neither* in God nor a higher power; belief in God is comparable for men and women scientists, but more women than men profess belief in a different supreme being or higher power.

|                              | Public | Scientists |
|------------------------------|--------|------------|
| <i>Religious belief*</i>     |        |            |
|                              | %      | %          |
| Believe in God               | 83     | 33         |
| Believe in higher power      | 12     | 18         |
| Don't believe in either      | 4      | 41         |
| <i>Religious affiliation</i> |        |            |
| Protestant                   | 51     | 20         |
| White Evangelical            | 19     | 3          |
| Catholic                     | 24     | 10         |
| White non-Hispanic           | 15     | 8          |
| Jewish                       | 1      | 8          |
| Unaffiliated                 | 17     | 48         |
| Atheist                      | 2      | 17         |
| Agnostic                     | 2      | 11         |
| Nothing in particular        | 12     | 20         |

Figures read down.  
 \* Belief figures from general public from July 2006; other general public data from Jan.-June, 2009.

|                        | <i>Believe in...</i> |        |         |
|------------------------|----------------------|--------|---------|
|                        | God                  | Higher | Neither |
|                        | %                    | %      | %       |
| All scientists         | 33                   | 18     | 41      |
| Men                    | 33                   | 16     | 44      |
| Women                  | 35                   | 24     | 36      |
| 18-34                  | 42                   | 24     | 32      |
| 35-49                  | 37                   | 14     | 42      |
| 50-64                  | 32                   | 18     | 44      |
| 65+                    | 28                   | 18     | 48      |
| <i>Field</i>           |                      |        |         |
| Biological and Medical | 32                   | 19     | 41      |
| Chemistry              | 41                   | 14     | 39      |
| Geosciences            | 30                   | 20     | 47      |
| Physics and Astronomy  | 29                   | 14     | 46      |

Figures read across.

## SECTION 5: EVOLUTION, CLIMATE CHANGE AND OTHER ISSUES

Two issues on which there is widespread agreement among scientists – evolution and climate change – divide the general public. Not only do many Americans diverge from the dominant scientific positions in their own attitudes and beliefs, but many also believe that the scientific community itself is divided over these issues. While education levels matter – college graduates are more likely than those with less education to agree with the scientists – education is not the largest factor. Public views on evolution are, not surprisingly, strongly linked to religion, while public views on climate change are strongly linked to party and ideology.

### The Origin and Development of Life

A majority of the public (61%) says that human and other living things have evolved over time, though when probed only about a third (32%) say this evolution is “due to natural processes such as natural selection” while 22% say “a supreme being guided the evolution of living things for the purpose of creating humans and other life in the form it exists today.” Another 31% reject evolution and say that “humans and other living things have existed in their present form since the beginning of time.”

#### Scientific Consensus on Evolution Not Shared by Public

|   | Public | Scientists |
|---|--------|------------|
| <i>Humans and other living things have...</i>             | %      | %          |
| Evolved over time...                                      | 61     | 97         |
| Due to natural processes                                  | 32     | 87         |
| Guided by supreme being                                   | 22     | 8          |
| Existed in their present form since the beginning of time | 31     | 2          |

Figures read down.

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*I am concerned about the ignorance concerning evolution and the damage to teaching of biology where legislators and school boards are forcing that 'equal time' be given to non-scientific 'alternative' views. I am also concerned that the public currently ranks global warming far down their priorities list in polls. Entomologist, 71*

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Nearly all scientists (97%) say humans and other living things have evolved over time – 87% say evolution is due to natural processes, such as natural selection. The dominant position among scientists – that living things have evolved due to natural processes – is shared by only about a third (32%) of the public.

Views on evolution vary substantially within the general public, particularly by religion and attendance at religious services. A majority (57%) of white evangelical Protestants hold the view that humans have existed in their present form since the beginning of time. Most Catholics and white mainline Protestants say humans have evolved, though they are divided about whether this is a result of natural processes or whether evolution was guided by a supreme being. Among the religiously unaffiliated, by contrast, 60% say humans have evolved due to natural processes.

About half (51%) of those who say they seldom or never attend religious services say that life evolved due to natural processes, compared with 36% of those who attend services at least yearly, and just 14% of those who attend weekly or more frequently.

|                             | <i>Evolved over time</i> |                         | <i>Existed in</i>   | <i>N</i> |
|-----------------------------|--------------------------|-------------------------|---------------------|----------|
|                             | <i>Natural process</i>   | <i>Supreme guidance</i> | <i>present form</i> |          |
|                             | %                        | %                       | %                   |          |
| Total public                | 32                       | 22                      | 31                  | 2001     |
| Men                         | 36                       | 22                      | 27                  | 1010     |
| Women                       | 29                       | 21                      | 36                  | 991      |
| 18-29                       | 40                       | 21                      | 26                  | 264      |
| 30-49                       | 35                       | 22                      | 30                  | 629      |
| 50-64                       | 30                       | 23                      | 34                  | 617      |
| 65+                         | 23                       | 19                      | 35                  | 464      |
| College grad+               | 45                       | 25                      | 19                  | 703      |
| Some college                | 31                       | 25                      | 33                  | 502      |
| HS or less                  | 26                       | 18                      | 37                  | 784      |
| Republican                  | 23                       | 26                      | 39                  | 504      |
| Democrat                    | 36                       | 22                      | 30                  | 747      |
| Independent                 | 38                       | 20                      | 27                  | 579      |
| Protestant                  | 19                       | 23                      | 43                  | 1023     |
| White evangelical           | 9                        | 20                      | 57                  | 417      |
| White mainline              | 38                       | 25                      | 23                  | 356      |
| Black Protestant            | 17                       | 29                      | 41                  | 159      |
| Catholic                    | 33                       | 25                      | 27                  | 477      |
| White non-Hispanic          | 34                       | 32                      | 24                  | 333      |
| Hispanic                    | 31                       | 17                      | 30                  | 109      |
| Unaffiliated                | 60                       | 15                      | 11                  | 321      |
| <i>Religious attendance</i> |                          |                         |                     |          |
| Weekly or more              | 14                       | 21                      | 49                  | 774      |
| Monthly/Yearly              | 36                       | 24                      | 26                  | 670      |
| Seldom/Never                | 51                       | 19                      | 17                  | 532      |

Younger respondents are more likely to say humans evolved through natural selection. Four-in-ten of those younger than 30 (40%) say humans have evolved as a result of natural processes such as natural selection, compared with 35% of those ages 30 to 49, 30% of those 50 to 64, and just 23% of those 65 and older. Among those 65 and older, far more (35%) say that humans and other living things have existed in their present form since the beginning of time than hold the view that humans evolved due to natural processes (23%).

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*I continue to be disappointed in the failure of public education to provide an understanding of biological evolution and of our place in the cosmos. One would hope that the news media would help in this regard, but I see little evidence for this. Astronomer, 70.*

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There also are large educational differences in views of evolution. While 45% of college graduates say humans evolved as a result of natural selection, fewer of those with some college (31%) and those with no more than a high school education (26%) say the same. However, even college graduates are far less likely than scientists to say that life has evolved due to natural processes.

**Wide Divide over Climate Change**

A large majority (85%) of Americans says that the earth is warming, but they are more divided on the cause of climate change than are scientists. About half of the general public (49%) says the earth is getting warmer “mostly because of human activity, such as burning fossil fuels,” while 36% say warming is occurring “mostly because of natural changes in the atmosphere.” About one-in-ten (11%) say “there is no solid evidence that the earth is getting warmer.”

|                                    | <u>Public</u> | <u>Scientists</u> |
|------------------------------------|---------------|-------------------|
|                                    | %             | %                 |
| <i>View on climate change</i>      |               |                   |
| Warming is due to human activity   | 49            | 84                |
| Warming is due to natural changes  | 36            | 10                |
| No solid evidence earth is warming | 11            | 4                 |
| <i>Global warming is ...</i>       |               |                   |
| Very serious problem               | 47            | 70                |
| Somewhat serious                   | 26            | 22                |
| Not too serious                    | 11            | 4                 |
| Not a problem                      | 13            | 2                 |

Figures read down.

By contrast, 84% of scientists say the earth is warming because of human activity. Scientists also are far more likely than the public to regard global warming as a very serious problem: 70% express this view, compared with 47% of the public. Public attitudes about whether global warming represents a serious problem have changed little in recent years.

The strongest correlate of opinion on climate change is partisan affiliation. Two-thirds of Republicans (67%) say either that the earth is getting warmer mostly because of natural changes in the atmosphere (43%) or that there is no solid evidence the earth is getting warmer (24%). By contrast, most Democrats (64%) say the earth is getting warmer mostly because of human activity. Nearly half of independents (49%) say human activity is causing the earth to warm, while 47% say either that the earth is getting warmer due to natural atmospheric changes (38%) or that there is no solid evidence that the earth is warming (9%).

|               | <u>Warming</u><br><u>human</u><br><u>activity</u> | <u>Warming</u><br><u>natural</u><br><u>changes</u> | <u>Not</u><br><u>getting</u><br><u>warmer</u> | <u>N</u> |
|---------------|---|--|---|----------|
|               | %   | %  | %   |          |
| Total public  | 49  | 36   | 11  | 2001     |
| 18-29         | 60  | 33   | 5   | 264      |
| 30-49         | 47  | 37   | 10  | 629      |
| 50-64         | 50  | 34   | 14  | 617      |
| 65+           | 39  | 39   | 13  | 464      |
| College grad+ | 58  | 28   | 11  | 703      |
| Some college  | 49  | 36   | 11  | 502      |
| HS or less    | 45  | 40   | 10  | 784      |
| Republican    | 30  | 43   | 24  | 504      |
| Conserv Rep   | 21  | 45   | 28  | 343      |
| Mod/Lib Rep   | 41  | 36   | 17  | 151      |
| Democrat      | 64  | 29   | 4   | 747      |
| Cons/Mod Dem  | 59  | 34   | 4   | 473      |
| Liberal Dem   | 74  | 21   | 4   | 250      |
| Independent   | 49  | 38   | 9   | 579      |

Figures read across.

The divide is even larger when party and ideology are both taken into consideration. Just 21% of conservative Republicans say the earth is warming due to human activity, compared with nearly three-quarters (74%) of liberal Democrats.

There also are significant differences in views about climate change by education. More than half of college graduates (58%) say climate change is occurring and caused by human activity while those with no more than a high school education are more divided in their opinions; 45% say the earth is warming because of human activity and 40% say it is due to natural changes in the atmosphere.

### **Do Scientists Agree?**

Despite the overwhelming agreement among scientists about evolution and climate change, substantial minorities of Americans think there is no scientific consensus on these issues. While a 60% majority of the public says that scientists generally agree that humans have evolved over time, nearly three-in-ten (28%) say that scientists do not generally agree.

A comparable majority (56%) says that scientists generally agree that the earth is warming because of human activity. However, more than a third (35%) says that scientists do not generally agree.

In both cases, people's perceptions of a scientific consensus are strongly correlated with their own views on the issue. Fully 79% of those who say life has evolved due to natural selection say there is a scientific consensus on this issue. Fewer than half (43%) of those who say life was created in its current form see such a consensus.

This pattern is even more pronounced when it comes to views about whether there is a scientific consensus over climate change. About three-quarters of people (76%) who say human activity is driving global warming think that most scientists agree on this point. Fewer than half (41%) of those who say warming is mostly due to atmospheric changes think there is a scientific consensus on the issue. Among the small share of the public (11%) that says there is no solid evidence of global warming, just 22% say there is scientific agreement that human activity is causing global warming, while 68% think there is no agreement among scientists on the issue.

| <b>More Scientific Consensus over Evolution and Climate Change than Public Thinks</b>                          |    |
|--|----|
| <b>Evolution</b>   |    |
| % of the public who says scientists generally agree that humans have evolved                                   | 60 |
| % of scientists who say humans have evolved  | 97 |
| <hr/>  |    |
| <b>Climate Change</b>  |    |
| % of the public who says scientists generally agree that the earth is getting warmer because of human activity | 56 |
| % of scientists who say that the earth is getting warmer because of human activity                             | 84 |

**Other Issues**

The attitudes of the public and scientists also sharply diverge on several policy issues related to science and technology. The public is far less supportive than scientists of using animals in scientific research; about half (52%) of the general public favors this compared with 93% of scientists. The divide is nearly as large over federal funding for embryonic stem cell research; 58% of the general public favors this compared with 93% of scientists.

About half (51%) of the general public favors building additional nuclear power plants compared with 70% of scientists. There is a smaller difference between scientists and the general public when it comes to children’s vaccinations. Large majorities of both the public (69%) and scientists (82%) say that all children should be required to be vaccinated.

**Animal Testing**

Among the public, there is a striking gender gap in opinions about using laboratory animals in scientific research. Most men (62%) favor the use of animals in research while just over half of women (52%) oppose this.

There also are sizable age, education and partisan differences in the public’s views of using animals in research. A majority of those younger than 30 (58%) oppose the use of animals for research while majorities in older age groups favor using animals in research. College graduates (59%) are more likely than those with some college (49%) or no more than a high school education (49%) to favor using animals in research. And while 62% of Republicans favor this, smaller shares of independents (51%) and Democrats (48%) agree.

As the high level of support among scientists would suggest (93% favor), there is very little variation in opinion among different types of scientists about the use of animals in

| <b>Differences Between Public and Scientists</b>                  |                    |                        |
|---|--------------------|------------------------|
|   | <u>Public</u><br>% | <u>Scientists</u><br>% |
| <b>Federal funding for embryonic stem cell research</b>           |                    |                        |
| Favor   | 58                 | 93                     |
| Oppose  | 35                 | 6                      |
| Don't know  | 7                  | 1                      |
| <b>The use of animals in scientific research</b>                  |                    |                        |
| Favor   | 52                 | 93                     |
| Oppose  | 43                 | 5                      |
| Don't know  | 6                  | 2                      |
| <b>Building more nuclear power plants to generate electricity</b> |                    |                        |
| Favor   | 51                 | 70                     |
| Oppose  | 42                 | 27                     |
| Don't know  | 7                  | 3                      |
| <b>Childhood vaccinations</b>                                     |                    |                        |
| All children should be required to be vaccinated                  | 69                 | 82                     |
| Parents should be able to decide not to vaccinate their children  | 28                 | 17                     |
| Don't know  | 3                  | 1                      |

Figures read down.

| <b>Gender Divide over Using Animals in Research</b> |                   |                    |
|---|-------------------|--------------------|
|   | <u>Favor</u><br>% | <u>Oppose</u><br>% |
| Total public  | 52                | 43                 |
| Men   | 62                | 33                 |
| Women   | 42                | 52                 |
| 18-29   | 39                | 58                 |
| 30-49   | 55                | 38                 |
| 50-64   | 52                | 44                 |
| 65+   | 61                | 33                 |
| College grad+                                       | 59                | 36                 |
| Some college  | 49                | 46                 |
| HS or less  | 49                | 46                 |
| Republican  | 62                | 33                 |
| Democrat  | 48                | 48                 |
| Independent   | 51                | 44                 |

Figures read across.

research. There also is very little difference among men and women scientists: 94% of men and 89% of women favor using animals in scientific research.

**Stem Cell Research**

A majority of Americans (58%) favor federal funding for embryonic stem cell research, while 35% are opposed. A far greater share of scientists (93%) than the public supports federal funding for embryonic stem cell research.

There are particularly large partisan and religious differences in the public’s views. Nearly twice as many Democrats (71%) as Republicans (38%) favor federal funding for embryonic stem cell research. On this issue, the opinions of independents (61% favor) are much closer to those of Democrats than Republicans. Within the parties there are also ideological divisions. Moderate and liberal Republicans are as likely to favor (47%) as oppose (46%) federal funding for embryonic stem cell research, while conservative Republicans oppose it by a 61% to 34% margin. Liberal Democrats are far more supportive of federal funding for this research than moderates and conservatives within the party (82% vs. 65%).

Majorities of Catholics (60%), white mainline Protestants (59%), black Protestants (54%) and the religiously unaffiliated (74%) favor federal funding for embryonic stem cell research. Just over half of white evangelical Protestants (52%) oppose it. And while the balance of opinion among those who attend religious services regularly (weekly or more) is in opposition to funding embryonic stem cell research (51% oppose, 42% favor), a large majority of those who attend less frequently favors funding this research.

| <b>Public Views of Funding Embryonic Stem Cell Research</b> |              |               |
|---|--------------|---------------|
|   | <u>Favor</u> | <u>Oppose</u> |
|   | %            | %             |
| Total public  | 58           | 35            |
| College grad+   | 70           | 27            |
| Some college  | 59           | 36            |
| HS or less  | 51           | 39            |
| Republican  | 38           | 56            |
| Conserv Rep   | 34           | 61            |
| Mod/Lib Rep   | 47           | 46            |
| Democrat  | 71           | 25            |
| Cons/Mod Dem  | 65           | 30            |
| Liberal Dem   | 82           | 15            |
| Independent   | 61           | 32            |
| Protestant  | 48           | 43            |
| White evangelical   | 40           | 52            |
| White mainline  | 59           | 32            |
| Black Protestant  | 54           | 36            |
| Catholic  | 60           | 35            |
| White non-Hispanic  | 60           | 36            |
| Hispanic  | 61           | 32            |
| Unaffiliated  | 74           | 20            |
| <i>Religious attendance</i>                                 |              |               |
| Weekly or more  | 42           | 51            |
| Monthly/Yearly  | 66           | 28            |
| Seldom/Never  | 70           | 23            |
| Figures read across.  |              |               |

**Nuclear Power**

About half (51%) of Americans favor building more nuclear power plants to generate electricity, while 42% oppose this. Among the general public, a greater percentage of men (60%) than of women (43%) favor building additional nuclear power plants. More college graduates (59%) favor building nuclear power plants than do those with a high school education or less (46%). And larger shares of Republicans (62%) than independents (52%) or Democrats (45%) support expanding the use of nuclear power to generate electricity.

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*The public exhibits a complete inability to assess relative risks and probabilities and the need for compromises, leading to, e.g., the current 'swine flu' semi-hysteria, the anti-nuclear lobby, and the 'BANANA' approach to energy issues (Build Absolutely Nothing Anywhere Near Anything). Chemist, 62.*

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When it comes to nuclear power, the views of scientists are closer to those of Republicans than Democrats nationwide.

Seven-in-ten scientists favor building more nuclear power plants to generate electricity, while 27% are opposed. Among scientists, majorities in every specialty favor building more nuclear power plants, but support is particularly widespread among physicists and astronomers (88% favor). As with the public, far more men (76%) than women (55%) support the expansion of nuclear power.

**Requiring Child Vaccinations**

A large majority (69%) of the general public says that all children should be required to be vaccinated against childhood diseases, such as measles, mumps, rubella and polio. Only 28% say that parents should be able to decide not to vaccinate their children. Among scientists, 82% support required vaccination, while 17% would leave the decision to parents.

There is very little variation in the general public's views by gender, party, or religious affiliation. There also is no difference in opinions between parents and non-parents about requiring all children to be vaccinated among. However, slightly more people with some college education or a college degree say that parents should be able to decide not to vaccinate their children.

|                      | Should be<br><u>required</u><br>% | Let parents<br><u>decide</u><br>% |
|----------------------|-----------------------------------|-----------------------------------|
| Total public         | 69                                | 28                                |
| Men                  | 70                                | 27                                |
| Women                | 69                                | 28                                |
| College grad+        | 67                                | 31                                |
| Some college         | 65                                | 32                                |
| HS or less           | 73                                | 24                                |
| Republican           | 71                                | 26                                |
| Democrat             | 71                                | 27                                |
| Independent          | 67                                | 30                                |
| Parent               | 69                                | 28                                |
| Not a parent         | 70                                | 27                                |
| Figures read across. |                                   |                                   |

## SECTION 6: SCIENTISTS AND THEIR CAREERS

While most scientists say this is a good time for their profession, a large majority also believes it is a good time to begin a career in science. Despite the poor economy, 67% of scientists say it is a very good or good time to begin a career in their scientific specialty area. Only about half as many (32%) say it is a bad time to start a career in their specialty.

Yet the economy remains a major concern for scientists, as it does for the general public. When asked about the main hurdles for people entering a research career in their scientific specialty, a majority (56%) cites economic issues and more than a third (36%) refers to the tight job market. Far fewer scientists mention educational issues (12%), the personal sacrifices required for a career in research (9%), or the lack of vision and creativity in their specialty (7%) as main hurdles to a career in research.

Biologists and medical scientists (64%) and chemists (61%) cite economic issues more frequently than their counterparts in the geosciences (47%) or physics and astronomy (41%). Scientists in academia are particularly likely to cite economic concerns (62%), while those in industry are least likely to do so (46%).

|  | ----- Scientific Field ----- |                  |           |           |                      |
|--|------------------------------|------------------|-----------|-----------|----------------------|
|  | All<br>scientists<br>%       | Bio/<br>Med<br>% | Chem<br>% | Geo<br>%  | Phys/<br>Astron<br>% |
| <i>Main hurdles to research career in <b>your</b> specialty...</i> |                              |                  |           |           |                      |
| <b>Economic issues (Net)</b>                                       | <b>56</b>                    | <b>64</b>        | <b>61</b> | <b>47</b> | <b>41</b>            |
| Funding/Support  | 46                           | 54               | 47        | 40        | 29                   |
| Finances/Salaries  | 9                            | 11               | 10        | 6         | 7                    |
| Economic downturn  | 6                            | 5                | 11        | 6         | 6                    |
| <b>Job market (Net)</b>  | <b>36</b>                    | <b>39</b>        | <b>34</b> | <b>44</b> | <b>38</b>            |
| <b>Education (Net)</b>   | <b>12</b>                    | <b>11</b>        | <b>13</b> | <b>14</b> | <b>11</b>            |
| <b>Personal sacrifices (Net)</b>                                   | <b>9</b>                     | <b>11</b>        | <b>7</b>  | <b>6</b>  | <b>8</b>             |
| <b>Lack of vision/Creativity (Net)</b>                             | <b>7</b>                     | <b>7</b>         | <b>6</b>  | <b>11</b> | <b>9</b>             |
| Institutional/Commercial pressures                                 | 7                            | 9                | 8         | 7         | 4                    |

Open-ended question, up to three responses accepted; figures add to more than 100%.  
Figures read down.

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*The long-time commitment required for graduate education and postdoctoral work is a major hurdle and disincentive to a scientific career. The low pay and lack of health benefits during the graduate and postdoctoral years compound this problem. Uncertainty about the availability of tenure-track faculty positions and the relatively low number of research-director level hires in the industrial sector discourages undergraduates.* Cell biologist, 65

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About as many geoscientists cite the job market (44%) as a barrier to a career in research as mention economic and funding issues (47%). Similarly, comparable percentages of physicists and astronomers say the job market (38%) and economic issues (41%) are the main hurdles to a career in research in their specialties.

## Why Science?

When asked about the importance of various factors that motivated them to pursue careers in science, an overwhelming share of scientists (86%) say an interest in solving intellectually challenging problems was very important. This view is widely shared across scientific specialties.

| <b>Reasons Why Scientists Chose their Careers</b> |                               |                                   |                                      |
|---|-------------------------------|-----------------------------------|--------------------------------------|
|   | Very<br><u>important</u><br>% | Somewhat<br><u>important</u><br>% | Not too/Not<br><u>important</u><br>% |
| To solve intellectually challenging problems      | 86                            | 13                                | 1                                    |
| To work for the public good                       | 41                            | 40                                | 19                                   |
| To make an important discovery                    | 30                            | 44                                | 25                                   |
| For a financially rewarding career                | 4                             | 29                                | 66                                   |

Question: How important was each of the following to your decision to become a scientist? Figures read across.

Substantially smaller percentages of scientists say the desire to work for the public good (41%) and the desire to make an important discovery (30%) were very important reasons for choosing science as a career. However, large majorities do cite these factors as at least somewhat important (81% work for public good, 74% make important discovery).

More women (48%) than men (38%) say a desire to work for the public good was a very important reason in deciding to become a scientist. Younger scientists are also more likely to point to the desire to contribute to the public good (48% of those under 35, compared with 32% of those 65 and over).

Perhaps not surprisingly, nearly half (49%) of those who work in the public sector identify working for the public good as a very important factor in their decision to go into science, compared with 45% working for non-profits and smaller percentages in academia (41%) and industry (38%). Applied scientists are also more likely than those who describe their work as addressing basic knowledge questions to attribute their career decision to working for the public good (48% vs. 34%).

| <b>More Women than Men Cite Desire to Work for Public Good</b> |                                     |   |
|--|-------------------------------------|---|
| <i>% citing each as very important in career decision...</i>   | Work for public<br><u>good</u><br>% | Make an<br>important<br><u>discovery</u><br>% |
| All scientists   | 41                                  | 30  |
| Men  | 38                                  | 32  |
| Women  | 48                                  | 25  |
| 18-34  | 48                                  | 33  |
| 35-49  | 43                                  | 38  |
| 50-64  | 42                                  | 27  |
| 65+  | 32                                  | 27  |
| <i>Employment sector</i>                                       |                                     |   |
| Government   | 49                                  | 28  |
| Academic   | 41                                  | 33  |
| Industry   | 38                                  | 28  |
| Non-profit   | 45                                  | 26  |
| <i>Type of research</i>  |                                     |   |
| Basic  | 34                                  | 33  |
| Applied  | 48                                  | 28  |
| <i>Field</i>   |                                     |   |
| Biological and Medical   | 44                                  | 32  |
| Chemistry  | 35                                  | 37  |
| Geosciences  | 40                                  | 17  |
| Physics and Astronomy  | 27                                  | 31  |

By comparison, those who primarily address basic knowledge questions in their research are more likely than applied researchers (33% vs. 28%) to cite a desire to make an important discovery as a very important reason for their career choice. There are also substantial differences by field, as chemists are about twice as likely as geoscientists to say the desire to make an important discovery was an important driver for their decision to become a scientist (37% vs. 17%).

### **Financial Rewards Less Important**

Few scientists say that the desire for a financially rewarding career was a very important part of their decision to become a scientist (4%). However, a third (33%) say this was at least somewhat important in their choice of career.

As might be expected, far more scientists working in industry than those working in other sectors view a desire for a financially rewarding career as very or somewhat important. About half of industry scientists (51%) say this, compared with only about three-in-ten of those working for government (31%), academia (29%) and for non-profits (29%).

More generally, a far larger share of those in the applied sciences (43%) attribute their career choice at least in part to a desire for a financially rewarding career, compared with 25% of those in basic sciences. Among scientific specialties, those in chemistry (40%) are more likely than those in other fields to say financial rewards were a consideration in their career choice.

| <b>Importance of a “Financially Rewarding Career”</b> |  |
|---|--|
|   | Very/Somewhat<br><u>important</u><br>% |
| All scientists  | 33                                     |
| <i>Employment sector</i>                              |  |
| Government  | 31                                     |
| Academic  | 29                                     |
| Industry  | 51                                     |
| Non-profit  | 29                                     |
| <i>Type of research</i>                               |  |
| Basic   | 25                                     |
| Applied   | 43                                     |
| <i>Field</i>  |  |
| Biological and Medical                                | 31                                     |
| Chemistry   | 40                                     |
| Geosciences   | 29                                     |
| Physics and Astronomy                                 | 28                                     |

In addition, older women scientists are less likely than either younger women or men to say financial rewards were important to their career decision (20% vs. 34% of younger women and 35% of all men).

## Why Scientific Research?

By a wide margin, more scientists say they are personally motivated by the challenge of answering scientific questions than by the prospect that their work delivers societal benefits. Just over six-in-ten (62%) say they are motivated to conduct scientific research mostly “to address important scientific questions, even if that research may have no immediate benefit to society.” Far fewer (36%) say they are mostly motivated “to benefit society, even if that research may not address important scientific questions.”

Those in academia are considerably more likely than their counterparts working elsewhere to say their main motivation for research is to address important questions (69%, compared with 51% of those in government, 52% at non-profits and just 44% of those in industry).

There also are sizable differences between those who work primarily on research addressing basic questions and applied scientists; more than eight-in-ten (81%) basic researchers say they are primarily motivated to address important questions, while the majority (56%) of applied researchers say their main aim is to benefit society.

Across scientific disciplines, physicists and astronomers (75%) are more likely than those in other fields to say they are motivated primarily to address important questions.

Younger women are more likely than men and older women to say they are mainly motivated to benefit society in their research (45% of 18-49 year-old women compared with 34% of older women and men of both age groups).

| <b>More Important Motivation for Doing Scientific Research Is to...</b> |                             |   |
|---|-----------------------------|---|
|   | <u>Benefit society</u><br>% | <u>Address important questions</u><br>% |
| All scientists  | 36                          | 62                                      |
| <i>Employment sector</i>  |                             |   |
| Government  | 46                          | 51                                      |
| Academic  | 30                          | 69                                      |
| Industry  | 53                          | 44                                      |
| Non-profit  | 46                          | 52                                      |
| <i>Type of research</i>   |                             |   |
| Basic   | 18                          | 81                                      |
| Applied   | 56                          | 42                                      |
| <i>Field</i>  |                             |   |
| Biological and Medical  | 35                          | 64                                      |
| Chemistry   | 32                          | 64                                      |
| Geosciences   | 38                          | 60                                      |
| Physics and Astronomy   | 22                          | 75                                      |
| Figures read across.  |                             |   |

### Scientists See Their Work as Interdisciplinary

A large majority of scientists say their work is interdisciplinary and nearly all the scientists surveyed say they pay at least some attention to research findings outside their primary field.

Fully 81% say the work in their primary scientific specialty area is interdisciplinary; just 18% say it is not. This view is expressed by large majorities across scientific fields, but is somewhat more widespread among those in geosciences (89%).

About three-quarters (76%) of those in basic scientific research say their work is interdisciplinary, as do an even larger share (88%) of those in applied research.

Academics, who make up a large proportion of scientists in the sample, are slightly less likely than their colleagues in industry or non-profits to say their work is interdisciplinary.

In addition, nearly all the scientists surveyed (95%) say they pay a lot (47%) or some (48%) attention to research findings outside of their primary field. Just 6% pay little or no attention to research outside of their specialty.

While large majorities across scientific specialties and demographic groups say they pay at least some attention to research outside their field, younger scientists are less likely to do so. Only about a quarter of those younger than 35 (27%) say they pay a lot of attention to research in other fields, compared with 43% of those 35 to 49 and a majority of those older than 50 (55%). Scientists who describe their own work as interdisciplinary are, not surprisingly, more likely to pay a lot of attention to outside findings (50%) than are those who do not describe their work that way (33%).

#### **Most Scientists Say Their Work Crosses Lines**

|   |    |
|---|----|
| <i>% saying their work is interdisciplinary</i> |    |
| All scientists                                  | 81 |
| <i>Field</i>                                    |    |
| Biological and Medical                          | 80 |
| Chemistry                                       | 80 |
| Geosciences                                     | 89 |
| Physics and Astronomy                           | 71 |
| <i>Employment sector</i>                        |    |
| Government                                      | 84 |
| Academic  | 80 |
| Industry  | 85 |
| Non-profit                                      | 87 |
| <i>Primary research focus:</i>                  |    |
| Basic   | 76 |
| Applied   | 88 |

#### **Nearly All Scientists Follow Research Outside Their Field**

|  |    |
|--|----|
| <i>Attention to research outside your field...</i> |    |
| A lot  | 47 |
| Some   | 48 |
| Not too much/None                                  | 6  |

## SECTION 7: SCIENCE INTEREST AND KNOWLEDGE

Most Americans express at least a passing interest in news about science, with 35% saying they enjoy keeping up with science news “a lot” and another 41% saying they enjoy keeping up with it “some.” Only about a quarter (24%) say they do not enjoy following news about science. By comparison, 54% of Americans say they enjoy keeping with the news in general a lot.

Nearly half of college graduates (46%) say they enjoy keeping up with science news a lot. Significantly fewer of those with some college experience (36%) or no more than a high school degree (27%) agree.

Consistent with broader trends in news consumption, people younger than 30 are less likely than older Americans to say they enjoy keeping up with science news. Overall, 29% of young people say this, the lowest proportion of any age group. Men are much more apt than women to say they enjoy science news a lot (40% for men, 29% for women).

|               | <u>A lot</u> | <u>Some</u> | <u>Not much/<br/>Not at all</u> |
|---------------|--------------|-------------|---------------------------------|
|               | <u>%</u>     | <u>%</u>    | <u>%</u>                        |
| Total public  | 35           | 41          | 24                              |
| Men           | 40           | 36          | 23                              |
| Women         | 29           | 45          | 26                              |
| 18-29         | 29           | 35          | 35                              |
| 30-49         | 32           | 44          | 23                              |
| 50-64         | 40           | 41          | 18                              |
| 65+           | 37           | 40          | 22                              |
| Republican    | 31           | 44          | 25                              |
| Democrat      | 37           | 39          | 23                              |
| Independent   | 35           | 40          | 24                              |
| College grad+ | 46           | 40          | 13                              |
| Some college  | 36           | 40          | 24                              |
| HS or less    | 27           | 41          | 31                              |

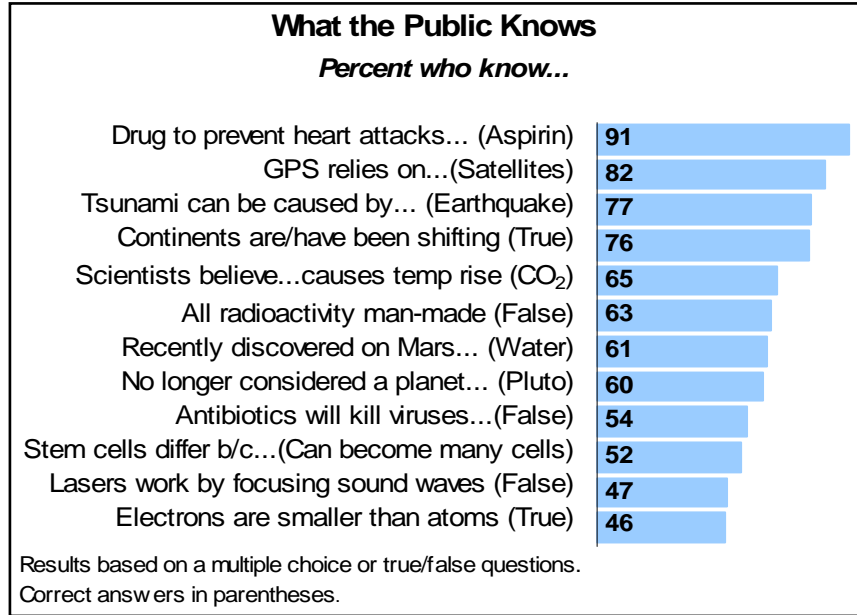
Figures read across.

### What the Public Knows about Science

To gauge the public’s familiarity with basic scientific concepts as well as science topics that have been in the news, a 12-item science knowledge quiz was conducted by telephone from June 18 to June 21 with a random sample of 1,005 adults. The public fared well on some of the items closely related to daily life but many people struggled with more basic scientific concepts.

On average, respondents correctly answered approximately eight of the 12 questions, or 65%; 10% of the public aced the quiz, getting a perfect 12-for-12, while another 8% could answer just three or fewer questions correctly. Below is a description of the items and how the public did on each of them. If you would like to take the quiz before reading this section, click [here](#) to be taken to the test. Otherwise, read on.

Fully 91% know that aspirin is an over-the-counter drug recommended by doctors to help prevent heart attacks. More than eight-in-ten (82%) know that GPS technology relies on satellites in order to work. About three-quarters each know that underwater earthquakes can cause tsunamis (77%) and that continental drift has happened for millions of years (76%).



About two-thirds (65%) know that carbon dioxide is the gas that most scientists believe causes temperatures in the atmosphere to rise. More than six-in-ten (63%) know that not *all* radioactivity is man-made. In the realm of astronomy, six-in-ten know that water is the substance recently discovered on Mars (61%) and that most astronomers no longer consider Pluto a planet (60%).

However, the public did not do as well on more complex science questions. Slightly more than half (54%) know that antibiotics will not kill viruses as well as bacteria, and roughly the same proportion (52%) knows that stems cells are different from other kinds of cells because they can develop into many cell types. Other ‘textbook’ science facts presented even greater difficulty. Fewer than half know that lasers do *not* work by focusing sound waves (47%). A comparable percentage of the public knows that electrons are smaller than atoms (46%).

## Demographic Differences in Science Knowledge

As expected, well-educated people fare much better on the science knowledge test than do those with less education. More than half of college graduates (57%) are in the high knowledge segment – those who answered 10 or more of the 12 items correctly. That compares with 33% of those with some college and just 17% of those with a high school education or less.

More men (36%) than women (28%) are in the high knowledge category, and whites (37%) are far more likely than African Americans (10%) to fall into the high knowledge group.

On average, Republicans scored somewhat higher than Democrats on the science test, and 37% of Republicans are in the high knowledge group compared with 27% of Democrats. However, these differences are mostly a reflection of the different demographics of the two groups. After taking education, age, gender, race and income into account there is little difference between Republicans and Democrats.

In Pew Research Center political knowledge surveys, older Americans have consistently done far better than young people. But that is not the case when it comes to science knowledge.

On average, those 65 and older score far lower than do those in younger age groups; just 17% are in the high knowledge category and nearly half (49%) are in the low knowledge group – by the far the highest share in any age group. By contrast, those younger than 30, who struggle with political knowledge, are relatively knowledgeable about science. More than a quarter (27%) are in the high knowledge group. People ages 30 to 64 are the most knowledgeable.

|                         | <b>Knowledge Level*</b> |               |            | <b>Avg. # correct of 12</b> |
|-------------------------|-------------------------|---------------|------------|-----------------------------|
|                         | <b>High</b>             | <b>Medium</b> | <b>Low</b> |                             |
|                         | <b>%</b>                | <b>%</b>      | <b>%</b>   |                             |
| Total public            | 32                      | 35            | 33         | 7.8                         |
| Men                     | 36                      | 35            | 29         | 8.1                         |
| Women                   | 28                      | 34            | 37         | 7.4                         |
| White                   | 37                      | 36            | 28         | 8.1                         |
| Black                   | 10                      | 31            | 58         | 6.0                         |
| 18-29                   | 27                      | 39            | 34         | 7.5                         |
| 30-49                   | 40                      | 36            | 24         | 8.5                         |
| 50-64                   | 35                      | 30            | 35         | 7.8                         |
| 65+                     | 17                      | 33            | 49         | 6.5                         |
| College grad +          | 57                      | 32            | 11         | 9.5                         |
| Some college            | 33                      | 41            | 26         | 8.1                         |
| High school or less     | 17                      | 33            | 50         | 6.6                         |
| <i>Household income</i> |                         |               |            |                             |
| \$75,000 or more        | 56                      | 32            | 12         | 9.3                         |
| \$30k-74,999            | 34                      | 40            | 25         | 8.2                         |
| Less than \$30,000      | 17                      | 31            | 52         | 6.6                         |
| Republican              | 37                      | 32            | 31         | 8.1                         |
| Democrat                | 27                      | 32            | 41         | 7.4                         |
| Independent             | 34                      | 41            | 24         | 8.1                         |
| Northeast               | 37                      | 36            | 27         | 8.1                         |
| South                   | 24                      | 35            | 40         | 7.2                         |
| Midwest                 | 35                      | 32            | 32         | 7.8                         |
| West                    | 38                      | 34            | 28         | 8.2                         |

\* Those who correctly answered 10 or more questions out of 12 were classified as having a "High" level of knowledge. Those who correctly answered seven to nine questions were classified as "Medium"; those who correctly answered six or fewer were classified as having "Low" levels of knowledge about science. Percentages read across.

### A Closer Look at Age and Gender

People in their 30s and 40s do particularly well on the science test; they are the only age group in which majorities answered each of the 12 questions correctly.

However, those younger than 30 were at least as likely as those 30 to 49 – and far more likely than those in older age categories – to identify Pluto as the object that

is no longer considered by most astronomers to be a planet. Three-quarters of those younger than 30 (75%) know this as do 67% of those 30 to 49 and 57% of 50-to-64 year-olds. Just 36% of those 65 and older know that Pluto is no longer considered a planet by most astronomers.

Though high school is a less distant memory for young people, they did not do particularly well on most “textbook” science questions. For most of these, greater proportions of those 30 to 49 than those younger than 30 answered questions correctly. The only exception was the true-false item stating that electrons are smaller than atoms; those 18 to 29 and 30 to 49 are equally likely (52% each) to correctly say this is true.

As might be expected, people in their late teens and 20s are far less likely than older people to identify aspirin as an over-the-counter drug recommended by doctors to prevent heart attacks. Yet they also are less likely than older people to know that not all radioactivity is man-made.

People 65 and older fared particularly poorly on the questions relating to Pluto and GPS technology. And on textbook knowledge, only about three-in-ten of those in the oldest age group know that electrons are smaller than atoms (30%) and that lasers do not employ sound waves (29%). Yet despite their lack of knowledge about Pluto, 64% of those 65 and older know that water was recently discovered on Mars. That is comparable to the percentage of those ages 30 to 64 who answered this correctly and greater than the share of youngest people (51%) who know this.

| <b>Age and Science Knowledge</b>                         |              |              |              |            |
|--|--------------|--------------|--------------|------------|
|  | <u>18-29</u> | <u>30-49</u> | <u>50-64</u> | <u>65+</u> |
|  | %            | %            | %            | %          |
| <b>Contemporary questions</b>                            |              |              |              |            |
| No longer considered a planet (Pluto)                    | 75           | 67           | 57           | 36         |
| GPS relies on (Satellites)                               | 87           | 91           | 82           | 62         |
| Scientists believe...causes temp rise (CO <sub>2</sub> ) | 65           | 69           | 69           | 51         |
| Tsunami can be caused by (Earthquakes)                   | 74           | 83           | 75           | 70         |
| Stem cells differ b/c (Can become many cells)            | 51           | 58           | 50           | 43         |
| Recently discovered on Mars (Water)                      | 51           | 66           | 62           | 64         |
| Drug to prevent heart attacks (Aspirin)                  | 78           | 96           | 97           | 92         |
| <b>“Textbook” questions</b>                              |              |              |              |            |
| Electrons are smaller than atoms (True)                  | 52           | 52           | 45           | 30         |
| Lasers work by focusing sound (False)                    | 43           | 54           | 53           | 29         |
| Antibiotics will kill viruses (False)                    | 49           | 64           | 52           | 43         |
| Continents are/have been shifting (True)                 | 73           | 84           | 75           | 69         |
| All radioactivity man-made (False)                       | 53           | 69           | 65           | 61         |

Overall, men answered 8.1 questions correctly on average and women got 7.4 right. Even when taking into account age and education, men on average did better on the science quiz than women.

There are significant gender differences on questions about the discovery of water on Mars (69% of men answered correctly vs. 54% of women) and about how lasers function (57% of men vs. 37% of women got this question right).

| <b>Gender and Science Knowledge</b>                      |            |              |                           |
|--|------------|--------------|---------------------------|
|  | <u>Men</u> | <u>Women</u> | <u>M-W</u><br><u>Diff</u> |
|  | %          | %            |                           |
| <b>Contemporary questions</b>                            |            |              |                           |
| Recently discovered on Mars (Water)                      | 69         | 54           | +15                       |
| Scientists believe...causes temp rise (CO <sub>2</sub> ) | 70         | 59           | +11                       |
| GPS relies on (Satellites)                               | 88         | 78           | +10                       |
| Tsunami can be caused by (Earthquakes)                   | 80         | 74           | +6                        |
| No longer considered a planet (Pluto)                    | 63         | 58           | +5                        |
| Stem cells differ b/c (Can become many cells)            | 51         | 54           | -3                        |
| Drug to prevent hear attacks (Aspirin)                   | 89         | 94           | -5                        |
| <b>"Textbook" questions</b>                              |            |              |                           |
| Lasers work by focusing sound (False)                    | 57         | 37           | +20                       |
| All radioactivity man-made (False)                       | 67         | 59           | +8                        |
| Electrons are smaller than atoms (True)                  | 50         | 42           | +8                        |
| Continents are/have been shifting (True)                 | 77         | 75           | +2                        |
| Antibiotics will kill viruses (False)                    | 49         | 59           | -10                       |

Yet there are exceptions to this pattern, particularly on issues related to health. More women (59%) than men (49%) know that antibiotics will not kill viruses as well as bacteria. And as many women as men know what distinguishes stem cells from other types of cells (54% of women, 51% of men).

**Science Media**

Two-thirds of Americans (67%) say they regularly watch television programs or channels about science such as Nova or Discovery Channel. Far fewer (20%) say they regularly read science magazines like Popular Science or Scientific American. And only 13% of the public say they regularly visit science web sites and blogs such as Discover.com, NOAA.gov or ScienceDaily.com.

| <b>Science Media Consumption</b> |                 |                |
|----------------------------------|-----------------|----------------|
| <i>Do you regularly...</i>       | <u>Yes</u><br>% | <u>No</u><br>% |
| Watch science TV                 | 67              | 33             |
| Read science magazines           | 20              | 80             |
| Visit science websites           | 13              | 86             |
| Figures read across.             |                 |                |

There are only modest age and educational differences in science news consumption. Those ages 65 and older are somewhat less likely than younger people to say they regularly consume any science news. College graduates (28%) are more likely than those with no more than a high school education (21%) to report high science news consumption. As might be expected, those who enjoy science news a lot are far more likely than others to say they regularly get science news from several media sources.

|  | <i>Science News Consumption</i> |                 |                 |
|--|---------------------------------|-----------------|-----------------|
|  | <u>High</u><br>%                | <u>Med</u><br>% | <u>Low</u><br>% |
| Total public   | 24                              | 47              | 29              |
| Men  | 32                              | 45              | 23              |
| Women  | 16                              | 49              | 35              |
| 18-29  | 24                              | 48              | 28              |
| 30-49  | 26                              | 48              | 26              |
| 50-64  | 26                              | 46              | 27              |
| 65+  | 18                              | 44              | 38              |
| College grad+  | 28                              | 43              | 29              |
| Some college   | 26                              | 50              | 24              |
| HS or less   | 21                              | 48              | 32              |
| <i>Enjoy science news</i>  |                                 |                 |                 |
| A lot  | 43                              | 45              | 12              |
| Some   | 19                              | 54              | 27              |
| Not much/at all  | 4                               | 39              | 57              |
| "High" science news consumers say they regularly get science news from at least two media sources; "medium" regularly get news from one source, and "low" do not regularly get science news from TV, magazines or websites. Figures read across. |                                 |                 |                 |

**COMMENTARY**

**by Dr. Alan I. Leshner, Chief Executive Officer  
American Association for the Advancement of Science  
Executive Publisher, *Science***

Americans by and large admire scientists — only slightly less than members of the military or teachers, in fact. The U.S. public recognizes research and development, perhaps especially to drive medical advances, as an investment in the future. Yet, researchers and the public too often are separated by a communications gap. This disconnection results partly from the increasing intersection of science with issues that involve personal values and beliefs such as human embryonic stem cell research and evolution.

At the same time, though, a new survey from the Pew Research Center, conducted in partnership with the American Association for the Advancement of Science (AAAS), shows that a large majority of scientists (85%) consider the public's lack of scientific knowledge to be a major problem. A similar percentage of scientists (83%) characterize television news coverage of science as "only fair" or "poor," with newspaper coverage receiving the same low ratings by a smaller majority of scientists (63%). Also, 21% of scientists identified public communication or education as a significant scientific failure of the past 20 years.

The good news is that opportunities abound for finding common ground on issues spanning science and society. Americans with a wide array of views, including scientists, clearly are united by the shared goal to improve human welfare by leveraging scientific advances. In the Pew Research survey of 2,533 AAAS members and 2,001 public respondents, a majority of both groups cited advances in medicine and life sciences as important achievements of science. Nearly three-fourths of public participants recognized that federal investment in basic scientific research as well as engineering and technology promises long-term societal benefits. That view persists across partisan lines, with a majority of Republicans (68%) and Democrats (80%) saying that support for basic science pays off in the long run, with comparable percentages saying the same about investments in engineering and technology.

In addition, public respondents who say that science sometimes conflicts with their own religious beliefs (36%) are about equally likely (67%) as those who see no conflict (72%) to say that scientists contribute a great deal to society. Only 32% of the public said they think that humans and other living things have evolved over time due to natural processes such as natural selection. Public views about evolution have changed little over the past two decades.

Although the public scored reasonably well on basic science knowledge questions administered by the Pew Research Center, respondents did far worse on more complex science questions. Only slightly more than half of all public respondents (54%) knew that antibiotics do not kill viruses along with bacteria, and fewer (46%) understood that electrons are smaller than atoms. These findings are consistent with the results of previous surveys and education assessments. Improving U.S. science education is essential, but education alone will not address this problem.

As scientists we must resist the urge to wring our hands in defeat or recoil at evidence of the public's lack of understanding about science. Encouragingly, the vast majority of scientists (87%) reported that they discuss science or research findings with non-scientists "often" or "occasionally." The Pew Research survey suggests that scientists, while currently held in high esteem by most Americans, would be wise to extend a similar level of respect to the public.

Nearly half of all responding scientists (49%) said that U.S. scientific achievements rank first in the world. The scientist group may be failing to appreciate the full impact of the ethical, moral, political, and other perspectives with which the broader public filters scientific information. Just 17% of the public thinks that U.S. scientific achievements rate as the best in the world. Clearly, the public is somewhat less confident in America's scientific prowess than scientists. Fewer Americans today (27%) offer scientific achievements as one of the country's most important achievements than did so a decade ago (47%).

Now more than ever, as our society faces increasing challenges, from energy dependence to the threat of an influenza pandemic, the scientific community must contribute to respectful dialogue with the public. Engaging with the public on scientific issues, rather than lecturing to them, requires listening to their perspectives, encouraging mutual learning,<sup>1</sup> and finding new ways to leverage popular culture, new media, journalism, and civic channels to facilitate dialogue opportunities. One innovative example is the Science & Entertainment Exchange, a National Academy of Sciences program for matching technical experts and creative professionals. Training for scientists interested in improving their public communication skills is offered through organizations including Stanford University's Woods Institute for the Environment Aldo Leopold Leadership Program, Research!America's Paul G. Rogers Society for Global Health Research, and AAAS.

In addition to being a good idea for promoting public engagement on science-based issues, these and other efforts to encourage interaction between scientists and society may increasingly be a requirement: On January 21, 2009, President Obama issued a Memorandum on Transparency and Open Government and called for recommendations for making the Federal government more transparent, participatory, and collaborative.<sup>2</sup> Now, new survey data suggest an urgent need to make science both more open and transparent. The Pew Research Center report and additional findings are available at <http://www.people-press.org/report/528/>.

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<sup>1</sup> "Many Experts, Many Audiences: Public Engagement with Science and Informal Science Education: A CAISE Inquiry Group Report," Center for Advancement of Informal Science Education (CAISE), Washington, D.C., March 2009.

<sup>2</sup> White House Web site: [http://www.whitehouse.gov/the\\_press\\_office/TransparencyandOpenGovernment](http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment).

## **APPENDIX: SURVEY METHODOLOGY**

### **About the General Public Survey**

Results for the general public survey are based on telephone interviews conducted under the direction of Princeton Survey Research Associates International among a nationwide sample of 2,001 adults, 18 years of age or older, from April 28 to May 12, 2009 (1,500 respondents were interviewed on a landline telephone, and 501 were interviewed on a cell phone, including 198 who had no landline telephone). Both the landline and cell phone samples were provided by Survey Sampling International. Interviews were conducted in English and Spanish. For detailed information about our survey methodology, see <http://people-press.org/methodology/>.

The combined landline and cell phone sample are weighted using an iterative technique that matches gender, age, education, race/ethnicity, region, and population density to parameters from the March 2008 Census Bureau's Current Population Survey. The sample is also weighted to match current patterns of telephone status and relative usage of landline and cell phones (for those with both), based on extrapolations from the 2008 National Health Interview Survey. The weighting procedure also accounts for the fact that respondents with both landline and cell phones have a greater probability of being included in the sample.

The following table shows the error attributable to sampling that would be expected at the 95% level of confidence for different groups in the survey:

| <b>Group</b> | <b>Sample Size</b> | <b>Plus or minus...</b> |
|--------------|--------------------|-------------------------|
| Total sample | 2,001              | 2.5 percentage points   |
| Form 1       | 1,005              | 3.5 percentage points   |
| Form 2       | 996                | 3.5 percentage points   |

In addition to sampling error, one should bear in mind that question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of opinion polls.

### **About the Science Knowledge Quiz**

Results for the science knowledge quiz and the spending priority questions are based on telephone interviews conducted under the direction of Princeton Survey Research Associates International among a nationwide sample of 1,005 adults, 18 years of age or older, from June 18-21, 2009 (705 respondents were interviewed on a landline telephone, and 300 were interviewed on a cell phone, including 118 who had no landline telephone). The data were weighted using similar procedure as the general public survey. Both the landline and cell phone samples were provided by Survey Sampling International. The error attributable to sampling is 3.5 percentage points at the 95% level of confidence.

### **About the Scientist Survey**

Results for the scientist survey are based on 2,533 online interviews conducted from May 1 to June 14, 2009 with members of the American Association for the Advancement of Science (AAAS), under the direction of Princeton Survey Research Associates International. A sample of 9,998 members was drawn from the AAAS membership list excluding those who were not based in the United States or whose membership type identified them as primary or secondary-level educators.

Founded in 1848, AAAS is the world's largest general scientific society, and includes members representing all scientific fields. AAAS publishes *Science*, one of the most widely circulated peer-reviewed scientific journals in the world. Membership in AAAS is open to all.

Each person sampled was mailed a letter on stationery with logos of both the Pew Research Center for the People & the Press and AAAS. The letter was signed by Andrew Kohut, President of the Pew Research Center and Alan I. Leshner, Chief Executive Officer of AAAS. These letters were intended to introduce the survey to

prospective respondents, describe the nature and purpose of the survey and encourage participation in the survey. The advance letter contained a URL and a password for a secure website where the survey could be completed. The letter also included a toll-free number for respondents to call if they had questions.

Subsequent requests to complete the survey were sent to those who had not yet responded. These requests were sent by e-mail for those who could be contacted this way (three e-mail reminders were sent) and by postal mail for members who had told AAAS they preferred not be contacted by e-mail (a postcard and letter reminder were sent).

A total of 1,411 of the 5,816 sampled members in the e-mail group completed the interview for a response rate of 24%. In the mail group, 1,122 members of the 4,182 sampled completed the survey for a response rate of 27%. The overall response rate for the study was 25% (2,533 completes/9,998 sampled members). Nearly all respondents completed the survey online; however, a very small number requested to complete the survey in another mode; twenty interviews were completed by telephone.

| <b>Response Rates and Contact Schedule</b>                              |                        |               |              |
|---|------------------------|---------------|--------------|
|   | <i>Mode of contact</i> |               | <u>Total</u> |
|   | <u>Mail</u>            | <u>E-mail</u> |              |
| Sample size   | 4,182                  | 5,816         | 9,998        |
| Number of completes   | 1,122                  | 1,411         | 2,533        |
| Response rate   | 27%                    | 24%           | 25%          |
| <i>Contact schedule*</i>  |                        |               |              |
| April 30  | Letter                 | Letter        |              |
| May 6   |                        | E-mail        |              |
| May 8   | Postcard               |               |              |
| May 18  |                        | E-mail        |              |
| May 22  | Letter                 |               |              |
| June 2  |                        | E-mail        |              |
| All contacts after the advance letter were sent only to nonrespondents. |                        |               |              |

Nonresponse in surveys can produce biases in survey-derived estimates because participation may vary for subgroups of a population, who may differ on questions of substantive interest. In order to correct for these biases, weighting is often employed.

To evaluate the possibility of nonresponse bias in the scientist survey, respondent characteristics from the obtained sample were compared with known characteristics of the population, based on membership and demographic information in the AAAS membership database. For most characteristics the sample was very representative of the population of all members. The most notable differences were that the sample underrepresented student members and overrepresented those with emeritus status. There also were differences in response rates between those who could be contacted by e-mail and those for whom no e-mail address existed or e-mail contact was not permitted. To correct these potential biases, the data were weighted so that the sample matched the two parameters of contact mode and member category from the AAAS membership database.

The following table shows the error attributable to sampling that would be expected at the 95% level of confidence for different groups in the scientist survey:

| <b>Group</b>           | <b>Sample Size</b> | <b>Plus or minus...</b> |
|------------------------|--------------------|-------------------------|
| Total sample           | 2,533              | 2.5 percentage points   |
| <i>By Field:</i>       |                    |                         |
| Biological and Medical | 1,255              | 3.5 percentage points   |
| Chemistry              | 348                | 6.0 percentage points   |
| Geosciences            | 154                | 9.0 percentage points   |
| Physics and Astronomy  | 229                | 7.5 percentage points   |

In addition to sampling error, one should bear in mind that question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of opinion polls.

## **ABOUT THE CENTER**

The Pew Research Center for the People & the Press is an independent opinion research group that studies attitudes toward the press, politics and public policy issues. We are sponsored by The Pew Charitable Trusts and are one of seven projects that make up the Pew Research Center, a nonpartisan "fact tank" that provides information on the issues, attitudes and trends shaping America and the world.

The Center's purpose is to serve as a forum for ideas on the media and public policy through public opinion research. In this role it serves as an important information resource for political leaders, journalists, scholars, and public interest organizations. All of our current survey results are made available free of charge.

All of the Center's research and reports are collaborative products based on the input and analysis of the entire Center staff consisting of:

Andrew Kohut, Director  
Scott Keeter, Director of Survey Research  
Carroll Doherty and Michael Dimock, Associate Directors  
Michael Remez, Senior Writer  
Juliana Menasce Horowitz, Robert Suls, Shawn Neidorf, Leah Christian and Jocelyn Kiley,  
Research Associates  
Kathleen Holzwart and Alec Tyson, Research Analysts

The research staff of the Pew Forum on Religion and Public Life, Greg Smith, Scott Clement and Neha Sahgal also contributed substantially to this project.

Cary Funk of Virginia Commonwealth University was a consultant on this project.

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**PEW RESEARCH CENTER FOR THE PEOPLE & THE PRESS  
MAY 2009 GENERAL PUBLIC SCIENCE SURVEY  
FINAL TOPLINE  
April 28-May 12, 2009  
N=2001**

**ASK ALL:**

Q.1 All in all, are you satisfied or dissatisfied with the way things are going in this country today?

|                      | Satis-<br><u>fied</u> | Dis-<br><u>satisfied</u> | (VOL.)<br><u>DK/Ref</u> |                              | Satis-<br><u>fied</u> | Dis-<br><u>satisfied</u> | (VOL.)<br><u>DK/Ref</u> |
|----------------------|-----------------------|--------------------------|-------------------------|------------------------------|-----------------------|--------------------------|-------------------------|
| May, 2009            | 34                    | 58                       | 8                       | May, 2002                    | 44                    | 44                       | 12                      |
| April, 2009          | 23                    | 70                       | 7                       | March, 2002                  | 50                    | 40                       | 10                      |
| January, 2009        | 20                    | 73                       | 7                       | Late September, 2001         | 57                    | 34                       | 9                       |
| December, 2008       | 13                    | 83                       | 4                       | Early September, 2001        | 41                    | 53                       | 6                       |
| Early October, 2008  | 11                    | 86                       | 3                       | June, 2001                   | 43                    | 52                       | 5                       |
| Mid-September, 2008  | 25                    | 69                       | 6                       | March, 2001                  | 47                    | 45                       | 8                       |
| August, 2008         | 21                    | 74                       | 5                       | February, 2001               | 46                    | 43                       | 11                      |
| July, 2008           | 19                    | 74                       | 7                       | January, 2001                | 55                    | 41                       | 4                       |
| June, 2008           | 19                    | 76                       | 5                       | October, 2000 (RVs)          | 54                    | 39                       | 7                       |
| Late May, 2008       | 18                    | 76                       | 6                       | September, 2000              | 51                    | 41                       | 8                       |
| March, 2008          | 22                    | 72                       | 6                       | June, 2000                   | 47                    | 45                       | 8                       |
| Early February, 2008 | 24                    | 70                       | 6                       | April, 2000                  | 48                    | 43                       | 9                       |
| Late December, 2007  | 27                    | 66                       | 7                       | August, 1999                 | 56                    | 39                       | 5                       |
| October, 2007        | 28                    | 66                       | 6                       | January, 1999                | 53                    | 41                       | 6                       |
| February, 2007       | 30                    | 61                       | 9                       | November, 1998               | 46                    | 44                       | 10                      |
| Mid-January, 2007    | 32                    | 61                       | 7                       | Early September, 1998        | 54                    | 42                       | 4                       |
| Early January, 2007  | 30                    | 63                       | 7                       | Late August, 1998            | 55                    | 41                       | 4                       |
| December, 2006       | 28                    | 65                       | 7                       | Early August, 1998           | 50                    | 44                       | 6                       |
| Mid-November, 2006   | 28                    | 64                       | 8                       | February, 1998               | 59                    | 37                       | 4                       |
| Early October, 2006  | 30                    | 63                       | 7                       | January, 1998                | 46                    | 50                       | 4                       |
| July, 2006           | 30                    | 65                       | 5                       | September, 1997              | 45                    | 49                       | 6                       |
| May, 2006            | 29                    | 65                       | 6                       | August, 1997                 | 49                    | 46                       | 5                       |
| March, 2006          | 32                    | 63                       | 5                       | January, 1997                | 38                    | 58                       | 4                       |
| January, 2006        | 34                    | 61                       | 5                       | July, 1996                   | 29                    | 67                       | 4                       |
| Late November, 2005  | 34                    | 59                       | 7                       | March, 1996                  | 28                    | 70                       | 2                       |
| Early October, 2005  | 29                    | 65                       | 6                       | October, 1995                | 23                    | 73                       | 4                       |
| July, 2005           | 35                    | 58                       | 7                       | June, 1995                   | 25                    | 73                       | 2                       |
| Late May, 2005       | 39                    | 57                       | 4                       | April, 1995                  | 23                    | 74                       | 3                       |
| February, 2005       | 38                    | 56                       | 6                       | July, 1994                   | 24                    | 73                       | 3                       |
| January, 2005        | 40                    | 54                       | 6                       | March, 1994                  | 24                    | 71                       | 5                       |
| December, 2004       | 39                    | 54                       | 7                       | October, 1993                | 22                    | 73                       | 5                       |
| Mid-October, 2004    | 36                    | 58                       | 6                       | September, 1993              | 20                    | 75                       | 5                       |
| July, 2004           | 38                    | 55                       | 7                       | May, 1993                    | 22                    | 71                       | 7                       |
| May, 2004            | 33                    | 61                       | 6                       | January, 1993                | 39                    | 50                       | 11                      |
| Late February, 2004  | 39                    | 55                       | 6                       | January, 1992                | 28                    | 68                       | 4                       |
| Early January, 2004  | 45                    | 48                       | 7                       | November, 1991               | 34                    | 61                       | 5                       |
| December, 2003       | 44                    | 47                       | 9                       | Late February, 1991 (Gallup) | 66                    | 31                       | 3                       |
| October, 2003        | 38                    | 56                       | 6                       | August, 1990                 | 47                    | 48                       | 5                       |
| August, 2003         | 40                    | 53                       | 7                       | May, 1990                    | 41                    | 54                       | 5                       |
| <i>April 8, 2003</i> | <i>50</i>             | <i>41</i>                | <i>9</i>                | January, 1989                | 45                    | 50                       | 5                       |
| January, 2003        | 44                    | 50                       | 6                       | September, 1988 (RVs)        | 50                    | 45                       | 5                       |
| November, 2002       | 41                    | 48                       | 11                      | May, 1988                    | 41                    | 54                       | 5                       |
| September, 2002      | 41                    | 55                       | 4                       | January, 1988                | 39                    | 55                       | 6                       |
| Late August, 2002    | 47                    | 44                       | 9                       |                              |                       |                          |                         |

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

Q.2 How much do you ENJOY keeping up with the news – a lot, some, not much, or not at all?

|    |                           | -----Trend for comparison----- |            |            |          |            |            |            |           |          |  |
|----|---------------------------|--------------------------------|------------|------------|----------|------------|------------|------------|-----------|----------|--|
|    |                           | May 2008                       | April 2006 | April 2004 | May 2002 | April 2002 | April 2000 | April 1998 | June 1995 | Feb 1994 |  |
| 54 | A lot                     | 52                             | 52         | 52         | 52       | 48         | 45         | 50         | 54        | 53       |  |
| 28 | Some                      | 32                             | 34         | 37         | 37       | 36         | 40         | 37         | 34        | 35       |  |
| 10 | Not Much                  | 10                             | 9          | 7          | 7        | 11         | 12         | 11         | 8         | 9        |  |
| 7  | Not at all                | 5                              | 4          | 3          | 3        | 4          | 3          | 2          | 3         | 2        |  |
| 2  | Don't know/Refused (VOL.) | 1                              | 1          | 1          | 1        | 1          | *          | *          | 1         | 1        |  |

**NO QUESTIONS 3 AND 4**

**ASK ALL:**

Q.5 Thinking about some different professions, how much do you think the following contribute to the well being of our society? Do [INSERT ITEM; RANDOMIZE; OBSERVE FORM SPLITS] contribute a lot, some, not very much, or nothing at all to the well being of our society? How about [INSERT NEXT ITEM]? [IF NECESSARY: Do [ITEM] contribute a lot, some, not very much, or nothing at all to the well being of our society?

|    |            | <u>A lot</u> | <u>Some</u> | <u>Not very much</u> | <u>Nothing at all</u> | <u>(VOL.) DK/Ref</u> |
|----|------------|--------------|-------------|----------------------|-----------------------|----------------------|
| a. | Scientists | 70           | 23          | 3                    | 2                     | 3                    |
| b. | Engineers  | 64           | 25          | 4                    | 2                     | 5                    |

**ASK FORM 1 ONLY [N=1005]:**

|      |                         |    |    |    |   |   |
|------|-------------------------|----|----|----|---|---|
| c.F1 | Journalists             | 38 | 41 | 13 | 4 | 4 |
| d.F1 | Artists                 | 31 | 43 | 15 | 7 | 4 |
| e.F1 | Lawyers                 | 23 | 46 | 18 | 9 | 5 |
| f.F1 | Members of the military | 84 | 11 | 3  | 1 | 1 |

**NO ITEM g**

**ASK FORM 2 ONLY [N=996]:**

|      |                     |    |    |    |   |   |
|------|---------------------|----|----|----|---|---|
| h.F2 | Clergy              | 40 | 37 | 10 | 5 | 9 |
| i.F2 | Medical doctors     | 69 | 24 | 4  | 1 | 2 |
| j.F2 | Business executives | 21 | 43 | 22 | 9 | 5 |
| k.F2 | Teachers            | 77 | 17 | 3  | 1 | 2 |

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**ASK FORM 1 ONLY [N=1005]:**

Q.6F1 What would you say has been America's greatest achievement over the past 50 years or so? [**OPEN END; ACCEPT MULTIPLE RESPONSES; PROBE ONCE IF "DON'T KNOW," BUT DO NOT PROBE FOR ADDITIONAL RESPONSES**]

|   | <i>Trend for<br/>Comparison<br/>May 1999<sup>3</sup></i> |
|---|--|
| <b>27 Science/Medicine/Technology (NET)</b> | <b>47</b>  |
| 12 Space exploration/Man on the moon        | 18   |
| 5 Medical care/breakthroughs                | 7  |
| 5 Technology                                | 12   |
| 2 Computers                                 | 7  |
| 2 Science                                   | 1  |
| 2 The internet                              | 1  |
| <br>  |  |
| <b>17 Civil/Equal Rights (NET)</b>          | <b>5</b>   |
| 10 Electing a black president/Barack Obama  | --   |
| 4 Civil rights                              | 4  |
| 1 Equality/equal rights                     | --   |
| 1 Women's rights                            | 1  |
| 1 Better race relations/Less prejudice      | --   |
| <br>  |  |
| <b>7 War and Peace (NET)</b>                | <b>7</b>   |
| 2 Ending the Cold War/communism             | 1  |
| 1 Peace                                     | 2  |
| 1 Dominant world power                      | 1  |
| 1 Recovering from/coming together post-9/11 | --   |
| 1 Keeping safe/Fighting terrorism           | --   |
| 1 Winning World War II                      | 3  |
| <br>  |  |
| <b>3 Economy (NET)</b>                      | <b>5</b>   |
| 2 Economic well being/stability             | 2  |
| 1 Free enterprise/Capitalism                | --   |
| <br>  |  |
| 3 Continuation/spread of democracy/freedom  | 2  |
| 1 Education                                 | 2  |
| 1 Helping other countries/peoples           | 2  |
| 12 Other                                    | 7  |
| 33 Nothing/Don't know/Refused               | 24   |

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<sup>3</sup> Question wording for May, 1999 asked: "What would you say has been America's greatest achievement during the 20<sup>th</sup> century?"

**ASK ALL:**

Q.7 We'd like you to compare the United States to other industrialized countries in a few different areas. (First, what about... **[INSERT ITEM; READ AND RANDOMIZE]?** **[READ FOR FIRST ITEM, THEN AS NECESSARY:** Do you think the U.S. is the **BEST IN THE WORLD**, above average, average or below average in **[ITEM]?**)

|    |  | Best in<br>the world | Above<br>average | Average | Below<br>average | (VOL.)<br>DK/Ref |
|----|--|----------------------|------------------|---------|------------------|------------------|
| a. | Its scientific achievements  | 17                   | 47               | 26      | 5                | 4                |
|    | <b>TREND FOR COMPARISON:</b><br><i>Scientists survey, May 2009<sup>4</sup></i> | 49                   | 45               | 5       | 1                | *                |
| b. | Its military   | 42                   | 39               | 13      | 3                | 3                |
| c. | Its economy  | 12                   | 22               | 33      | 31               | 3                |
| d. | Its standard of living   | 22                   | 41               | 26      | 9                | 2                |

**NO ITEM e.**

|    |                      |    |    |    |    |   |
|----|----------------------|----|----|----|----|---|
| f. | Its health care      | 15 | 23 | 32 | 27 | 2 |
| g. | Its political system | 19 | 31 | 29 | 16 | 5 |

**NO QUESTIONS 8 THROUGH 16**

**ASK ALL:**

Now I'd like to ask you some questions about science.

**ASK ALL:**

Q.17 How much do you ENJOY keeping up with news about science – a lot, some, not much, or not at all?

|    |                           |
|----|---------------------------|
| 35 | A lot                     |
| 41 | Some                      |
| 16 | Not much                  |
| 8  | Not at all                |
| 1  | Don't know/Refused (VOL.) |

**ASK ALL:**

Q.18 Do you regularly watch television programs or channels about science such as such as Nova or Discovery Channel, or not?

|    |                           |
|----|---------------------------|
| 67 | Yes, regularly            |
| 33 | No, not regularly         |
| *  | Don't know/Refused (VOL.) |

**ASK ALL:**

Q.19 Do you regularly visit science web sites and blogs, such as Discover.com, NOAA.gov or ScienceDaily.com, or not?

|    |                           |
|----|---------------------------|
| 13 | Yes, regularly            |
| 86 | No, not regularly         |
| 1  | Don't know/Refused (VOL.) |

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<sup>4</sup> Scientists were asked only about scientific achievements. The question wording was: "Compared to other industrialized countries, how would you rate the United States with regard to its overall scientific achievements?"

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**ASK ALL:**

Q.20 And do you regularly read science magazines, such as Popular Science or Scientific American, or not?

|    |                           |
|----|---------------------------|
| 20 | Yes, regularly            |
| 80 | No, not regularly         |
| 1  | Don't know/Refused (VOL.) |

**ASK ALL:**

Q.21 Overall, would you say science has had a mostly positive effect on our society or a mostly negative effect on our society?

|    |                           |
|----|---------------------------|
| 84 | Mostly positive           |
| 6  | Mostly negative           |
| 5  | Both/Neither (VOL.)       |
| 5  | Don't know/Refused (VOL.) |

**IF Q.21 IS “POSITIVE” OR “NEGATIVE” (Q.21=1,2) AND FORM 2, ASK:**

**Q.22F2 Can you tell me some ways science has had a [positive/negative] effect on our society? [OPEN END; ACCEPT UP TO THREE RESPONSES; PROBE ONCE IF “DON’T KNOW,” AND PROBE FOR CLARITY, BUT DO NOT PROBE FOR ADDITIONAL RESPONSES]**

**BASED ON POSITIVE RESPONSE IN Q.21 (Q.21=1) AND FORM 2 [N=836]:**

**52 MEDICINE (NET)**

- 32 Medical/Health care (general)
- 24 Vaccines/Drugs/Cures/Disease research
- 4 Stem cells

- 8 Space exploration
- 7 Environment/Global warming/Green initiatives

**7 COMMUNICATION AND COMPUTER TECHNOLOGY (NET)**

- 3 Computers
- 2 Communications technology (general)
- 2 Cell phones
- 1 Internet
- \* TVs

- 6 Technology (general)
- 4 Standard of living/Makes life easier/Quality of life
- 4 Energy/Alternative energy
- 4 Inventions/Discoveries

**3 KNOWLEDGE (NET)**

- 2 Education/Learning/Knowledge
- 1 Understanding of universe

- 3 Engineering/Machinery/Buildings/Industry
- 3 Research (general)
- 3 Cars/Fuel efficient cars
- 2 Food and water quality, abundance
- 2 Everything
- 2 Longevity
- 1 Transportation/Travel
- 1 Economy
- 1 New materials, products
- 1 Military/Defense
- 1 Agriculture
- 1 Human genome/DNA
- 1 Weather/Earthquake and volcano monitoring
- 1 Electricity
- 7 Other
- 17 Don't know/Refused

Percentages add to more than 100% because of multiple responses.

**NEGATIVE RESPONSES FOR Q.22F2 NOT SHOWN BECAUSE OF SMALL SAMPLE SIZE.  
NEGATIVE RESPONSES WERE USED FOR QUALITATIVE ANALYSIS ONLY.**

**ASK ALL:**

Q.23 Overall, has science made life easier or more difficult for most people?

- 83 Easier
- 10 More difficult
- 1 Not had much of an effect (VOL.)
- 6 Don't know/Refused (VOL.)

**ASK ALL:**

Q. 24 Has science had a mostly positive or mostly negative effect on the quality of [INSERT ITEM; RANDOMIZE]? What about [NEXT ITEM]? [IF NECESSARY: Has science had a mostly positive or mostly negative effect on the quality of [ITEM]?

|    |                 | (VOL.)                 |                        |                                  |                      |
|----|-----------------|------------------------|------------------------|----------------------------------|----------------------|
|    |                 | <u>Mostly positive</u> | <u>Mostly negative</u> | <u>Not had much of an effect</u> | <u>(VOL.) DK/Ref</u> |
| a. | Food            | 66                     | 24                     | 2                                | 8                    |
| b. | Health care     | 85                     | 10                     | 1                                | 4                    |
| c. | The environment | 66                     | 23                     | 2                                | 8                    |

**ASK ALL:**

Q. 25 In your opinion, generally do you think...? [READ AND RANDOMIZE]

- 55 Science and religion are often in conflict [OR]
- 38 Science and religion are mostly compatible
- 7 Don't know/Refused [VOL. DO NOT READ]

**ASK ALL:**

Q.26 Now thinking about your own religious beliefs, does science sometimes conflict with your own religious beliefs, or doesn't it?

- 36 Yes, science conflicts with own beliefs
- 61 No, science does not conflict with own beliefs
- 3 Don't know/Refused (VOL.)

**IF Q.26=1 AND FORM 1, ASK [N=964]:**

Q.27F1 Can you tell me some ways in which science conflicts with your own religious beliefs? [OPEN END; ACCEPT UP TO THREE RESPONSES; PROBE ONCE IF "DON'T KNOW," AND PROBE FOR CLARITY, BUT DO NOT PROBE FOR ADDITIONAL RESPONSES]

41 Evolution/Creationism/Darwinism

**15 Beginning of life (NET)**

- 12 Abortion
- 4 Cloning
- 2 Birth control

- 9 Stem cells
- 4 Denial of God/Belief in God
- 3 Medical/Medication/Blood transfusion
- 2 Conflict with Bible
- 9 Other
- 25 Don't know/Refused

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

Q.28 How much, if at all, do you worry about whether the newest medicines and medical treatments have been carefully tested before being made available to the public? Do you worry... **[READ IN ORDER]**

- 27 A lot
- 36 Some
- 22 Not very much **[OR]**
- 15 Not at all
- 1 Don't know/Refused **[VOL. DO NOT READ]**

**RANDOMIZE Q.29 AND Q.30**

**ASK ALL:**

Q.29 In your opinion, do government investments in **[INSERT ITEM; RANDOMIZE]** usually pay off in the long run, or are they not worth it?

|    |                            | <u>Yes, pay off<br/>in the long run</u> | <u>No, aren't<br/>worth it</u> | <b>(VOL.)<br/>DK/Ref</b> |
|----|----------------------------|---|--------------------------------|--------------------------|
| a. | Basic scientific research  | 73                                      | 18                             | 9                        |
| b. | Engineering and technology | 74                                      | 17                             | 9                        |

**RANDOMIZE Q.29 AND Q.30**

**ASK ALL:**

Q.30 Which of these comes closer to your view? **[READ AND RANDOMIZE]**

- 60 Government investment in research is **ESSENTIAL** for scientific progress **[OR]**  
Private investment will ensure that enough scientific progress is made,
- 29 even without government investment
- 11 Don't know/Refused **[VOL. DO NOT READ]**

**ASK ALL:**

Q.31 For each of the following areas of scientific research, please tell me if you think it has done **[READ AND RANDOMIZE RESPONSE CATEGORIES]**? (First,) what about... **(INSERT—READ AND RANDOMIZE)**? **[READ FOR FIRST ITEM, THEN AS NECESSARY]**: Has this done **[READ OPTIONS IN SAME ORDER]**: (more HARM than good OR more GOOD than harm) / (more GOOD than harm OR more HARM than good) for society)?

|    |                              | <u>More HARM<br/>than good</u> | <u>More GOOD<br/>than harm</u> | <b>(VOL.)<br/>DK/Ref</b> |
|----|------------------------------|--------------------------------|--------------------------------|--------------------------|
| a. | Research into human genetics | 19                             | 72                             | 9                        |
| b. | Research into nuclear energy | 27                             | 65                             | 8                        |

**NO ITEM c**

|    |                   |    |    |   |
|----|-------------------|----|----|---|
| d. | Space exploration | 17 | 74 | 9 |
|----|-------------------|----|----|---|

**NO ITEM e**

|    |                                 |    |    |   |
|----|---------------------------------|----|----|---|
| f. | The development of the internet | 22 | 70 | 8 |
|----|---------------------------------|----|----|---|

**NO QUESTIONS 32 THROUGH 35**

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

Now a few questions about some issues...

**RANDOMIZE QUESTIONS 36-38 IN BLOCKS WITH QUESTIONS 45-47 IN BLOCKS.**

**ASK ALL:**

Q.36 Which comes closer to your view? **[READ AND RANDOMIZE]**

|    |  | <i>Trend for Comparison</i> |                         |             |
|----|--|-----------------------------|-------------------------|-------------|
|    |  | Scientists survey           | July                    | July        |
|    |  | <u>May 2009</u>             | <u>2006<sup>5</sup></u> | <u>2005</u> |
| 61 | Humans and other living things have evolved over time [OR]<br>Humans and other living things have existed in their present | 97                          | 51                      | 48          |
| 31 | form since the beginning of time   | 2                           | 42                      | 42          |
| 8  | Don't know/Refused <b>[VOL. DO NOT READ]</b>   | 1                           | 7                       | 10          |

**RANDOMIZE QUESTIONS 36-38 IN BLOCKS WITH QUESTIONS 45-47 IN BLOCKS.**

**IF EVOLVED (1 in Q.36), ASK:**

Q.37 And do you think that...**[READ OPTIONS AND RANDOMIZE]**?

|                       |  | <i>Trend for Comparison</i> |             |             |
|-----------------------|--|-----------------------------|-------------|-------------|
|                       |  | Scientists survey           | July        | July        |
|                       |  | <u>May 2009</u>             | <u>2006</u> | <u>2005</u> |
| <b>BASED ON TOTAL</b> |  |                             |             |             |
| 32                    | Humans and other living things have evolved<br>due to natural processes such as natural selection, [OR]<br>A supreme being guided the evolution of living things for the purpose | 87                          | 26          | 26          |
| 22                    | of creating humans and other life in the form it exists today  | 8                           | 21          | 18          |
| 7                     | Don't know/Refused/No answer <b>[VOL. DO NOT READ]</b>   | 2                           | 4           | 4           |
| (39)                  | <i>Humans existed in present form/Don't know in Q.36</i>   | (3)                         | (49)        | (52)        |

**RANDOMIZE QUESTIONS 36-38 IN BLOCKS WITH QUESTIONS 44-47 IN BLOCKS.**

**ASK ALL:**

Q.38 From what you've heard or read, do scientists generally agree that humans evolved over time, or do they not generally agree about this?

|    |   | <i>Trend for Comparison</i> |             |
|----|---|-----------------------------|-------------|
|    |   | July                        | July        |
|    |   | <u>2006<sup>6</sup></u>     | <u>2005</u> |
| 60 | Yes, scientists generally agree that humans evolved over time       | 62                          | 54          |
| 28 | No, scientists do not generally agree that humans evolved over time | 28                          | 33          |
| 11 | Don't know/Refused/No answer <b>(VOL.)</b>                          | 10                          | 13          |

**NO QUESTIONS 39 THROUGH 43**

<sup>5</sup> Question wording for July 2006 and earlier began with "Some people think humans and other living things..." with response options "have evolved over time" and "have existed in their present form since the beginning of time" rotated, followed by "which of these comes closer to your view?"

<sup>6</sup> Question wording for July 2006 and earlier asked "From what you've heard or read, is there general agreement among scientists that humans evolved over time, or not?"

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**RANDOMIZE QUESTIONS 36-38 IN BLOCKS WITH QUESTIONS 44-47 IN BLOCKS.**

**ASK ALL:**

Q.44F1/Q45F2 Which of these three statements about the earth's temperature comes closest to your view?

**[FORM 1: READ AND RANDOMIZE FIRST TWO OPTIONS; KEEP THIRD OPTION LAST; FORM 2: READ THIRD OPTION FIRST; READ AND RANDOMIZE FIRST TWO OPTIONS]:**

|    |   | <i>Trend for comparison</i> |
|----|---|-----------------------------|
|    |   | <b>Scientists survey</b>    |
|    |   | <u>May 2009</u>             |
| 36 | The earth is getting warmer mostly because of natural changes in the atmosphere           | 10                          |
| 49 | The earth is getting warmer mostly because of human activity such as burning fossil fuels | 84                          |
| 11 | The earth is not getting warmer   | 4                           |
| 4  | Don't know/Refused/No answer <b>[VOL. DO NOT READ]</b>                                    | 2                           |

**RANDOMIZE QUESTIONS 36-38 IN BLOCKS WITH QUESTIONS 44-47 IN BLOCKS.**

**ASK ALL:**

Q.46 In your view, is global warming a very serious problem, somewhat serious, not too serious, or not a problem?

|    |                                | <i>Trend for comparison</i> |             |             |             |             |
|----|--------------------------------|-----------------------------|-------------|-------------|-------------|-------------|
|    |                                | <b>Scientists survey</b>    | April       | Jan         | July        | June        |
|    |                                | <u>May 2009</u>             | <u>2008</u> | <u>2007</u> | <u>2006</u> | <u>2006</u> |
| 47 | Very serious                   | 70                          | 44          | 45          | 43          | 41          |
| 26 | Somewhat serious               | 22                          | 29          | 32          | 36          | 33          |
| 11 | Not too serious                | 4                           | 13          | 12          | 11          | 13          |
| 13 | Not a problem                  | 2                           | 11          | 8           | 9           | 11          |
| 2  | Don't know/Refused/No answer * |                             | 3           | 3           | 1           | 2           |

**RANDOMIZE QUESTIONS 36-38 IN BLOCKS WITH QUESTIONS 44-47 IN BLOCKS.**

**ASK ALL:**

Q.47 From what you've heard or read, do scientists generally agree that the earth is getting warmer because of human activity, or do they not generally agree about this?

|    |  | <i>Trend for Comparison</i> |  |
|----|--|-----------------------------|--|
|    |  | July                        |  |
|    |  | <u>2006<sup>7</sup></u>     |  |
| 56 | Yes, scientists generally agree that the earth is getting warmer because of human activity       | 59                          |  |
| 35 | No, scientists do not generally agree that the earth is getting warmer because of human activity | 29                          |  |
| 9  | Don't know/Refused/No answer <b>(VOL.)</b>   | 12                          |  |

**NO QUESTIONS 48 AND 49**

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<sup>7</sup> Question wording for July 2006 and earlier asked "From what you've heard or read, is there general agreement among scientists that the earth is getting warmer because of human activity, or not."

**RANDOMIZE Q.50 AND Q.51**

**ASK ALL:**

Q.50 All in all, do you favor or oppose [INSERT ITEM; RANDOMIZE]? Do you favor or oppose [NEXT ITEM]?

|    |   | <u>Favor</u> | <u>Oppose</u> | <u>(VOL.)<br/>DK/Ref</u> |
|----|---|--------------|---------------|--------------------------|
| a. | Federal funding for embryonic stem cell research?               | 58           | 35            | 7                        |
|    | <b>TREND FOR COMPARISON:</b> <i>Scientists survey, May 2009</i> | 93           | 6             | 1                        |
| b. | Building more nuclear power plants to generate electricity?     | 51           | 42            | 7                        |
|    | <b>TREND FOR COMPARISON:</b> <i>Scientists survey, May 2009</i> | 70           | 27            | 3                        |
| c. | The use of animals in scientific research?                      | 52           | 43            | 6                        |
|    | <b>TREND FOR COMPARISON:</b> <i>Scientists survey, May 2009</i> | 93           | 5             | 2                        |

**RANDOMIZE Q.50 AND Q.51**

**ASK ALL:**

Q.51 Thinking about childhood diseases, such as measles, mumps, rubella and polio ...? [READ AND RANDOMIZE]

|    |   | <i>Trend for comparison<br/>Scientists survey<br/>May 2009</i> |
|----|---|--|
| 28 | Should parents be able to decide NOT to vaccinate their children [OR] | 17   |
| 69 | Should all children be required to be vaccinated                      | 82   |
| 3  | Don't know/Refused/No answer (VOL.)                                   | 1  |

**NO QUESTION 52**

**ASK ALL:**

Q.53 Do you think it is [READ IN ORDER] for scientists to become actively involved in political debates about issues such as nuclear power or stem cell research?

|    |   | <i>Trend for comparison<br/>Scientists survey<br/>May 2009</i> |
|----|---|--|
| 76 | Appropriate [OR]                                | 97   |
| 18 | Not appropriate                                 | 3  |
| 5  | Don't know/Refused/No answer [VOL. DO NOT READ] | *  |

**ASK ALL:**

Q.54 Just your impression: Do you think of scientists as...[RANDOMIZE ORDER OF:] a politically liberal group, a politically conservative group [THEN] or as neither in particular?

|    |                                     | <i>Trend for comparison<br/>Scientists Survey<br/>May 2009</i> |
|----|-------------------------------------|--|
| 20 | Politically liberal group           | 56   |
| 9  | Politically conservative group      | 2  |
| 64 | Neither in particular               | 42   |
| 8  | Don't know/Refused/No answer (VOL.) | 1  |

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

Q.55 How much, if anything, have you heard about claims that government scientists were not allowed to report research findings that conflicted with the Bush administration’s point of view? Have you heard...**[READ]**?

|    |                                     | <i>Trend for comparison</i> |
|----|-------------------------------------|-----------------------------|
|    |                                     | <b>Scientists survey</b>    |
|    |                                     | <u>May 2009</u>             |
| 10 | A lot                               | 55                          |
| 34 | A little                            | 30                          |
| 54 | Nothing at all                      | 14                          |
| 2  | Don’t know/Refused/No answer (VOL.) | *                           |

**ASK IF Q.55=1,2 (Heard “a lot” or “a little”):**

Q.56 Do you think these claims about the Bush administration are true or false? **[CLARIFY IF NECESSARY:** “claims that government scientists were not allowed to report research findings that conflicted with the Bush administration’s point of view”]

|                        |   | <i>Trend for comparison</i> |
|------------------------|---|-----------------------------|
|                        |   | <b>Scientists survey</b>    |
|                        |   | <u>May 2009</u>             |
| <b>BASED ON TOTAL:</b> |   |                             |
| 28                     | True                                    | 77                          |
| 9                      | False                                   | 6                           |
| 7                      | Don’t know/Refused/No answer (VOL.)     | 3                           |
| (56)                   | <i>Heard nothing/Don’t know in Q.55</i> | (14)                        |

**ASK IF Q.56=1**

Q.57 All in all, do you think this occurred **[RANDOMIZE ORDER OF:]** more often, less often, **[THEN]** or about as often in the Bush administration as in previous administrations? **[CLARIFY IF NECESSARY:** “claims that government scientists were not allowed to report research findings that conflicted with the Bush administration’s point of view”]

|                        |   | <i>Trend for comparison</i> |
|------------------------|---|-----------------------------|
|                        |   | <b>Scientists survey</b>    |
|                        |   | <u>May 2009</u>             |
| <b>BASED ON TOTAL:</b> |   |                             |
| 17                     | More often                              | 71                          |
| 2                      | Less Often                              | 1                           |
| 8                      | About as often                          | 5                           |
| 1                      | No answer/Don’t know/Refused (VOL.)     | *                           |
| (16)                   | <i>False/Don’t know in Q.56</i>         | (9)                         |
| (56)                   | <i>Heard nothing/Don’t know in Q.55</i> | (14)                        |

**NO QUESTIONS 58 THROUGH 62**

Now I have just a few short questions such as you might see on a television game show. First, **RANDOMIZE Q.63 THROUGH Q.66**

**ASK ALL:**

Q.63 What gas do most scientists believe causes temperatures in the atmosphere to rise? **[RANDOMIZE AND READ]**

|    |  |
|----|--|
| 66 | Carbon dioxide ( <i>Correct</i> )            |
| 7  | Hydrogen                                     |
| 4  | Helium                                       |
| 6  | Radon  |
| 17 | Don’t know/Refused <b>[VOL. DO NOT READ]</b> |

**RANDOMIZE Q.63 THROUGH Q.66**

**ASK ALL:**

Q.64 What have scientists recently discovered on Mars...? Is it...[**RANDOMIZE AND READ**]

- 60 Water (*Correct*)
- 5 Platinum
- 9 Mold
- 5 Plants
- 21 Don't know/Refused [**VOL. DO NOT READ**]

**RANDOMIZE Q.63 THROUGH Q.66**

**ASK ALL:**

Q.65 Which over-the-counter drug do doctors recommend that people take to help prevent heart attacks ...? Is it... [**RANDOMIZE AND READ**]

- 89 Aspirin (*Correct*)
- 4 Cortisone
- 1 Antacids
- 5 Don't know/Refused [**VOL. DO NOT READ**]

**RANDOMIZE Q.63 THROUGH Q.66**

**ASK ALL:**

Q.66 How are stem cells different from other cells? [**READ AND RANDOMIZE**]

- 4 They are found ONLY in plants
- 55 They can develop into many different types of cells (*Correct*) [OR]
- 24 They are found ONLY in bone marrow
- 18 Don't know/Refused [**VOL. DO NOT READ**]

**IF ATTEND RELIGIOUS SERVICES AS LEAST ONCE OR TWICE A MONTH (ATTEND=1,2,3), ASK [N=1051]:**

Q.67 Does the clergy at your place of worship ever speak about science or scientific findings?

- 42 Yes
- 56 No
- 2 Don't know/Refused (**VOL.**)

**IF CLERGY EVER SPEAK ABOUT SCIENCE/SCIENTIFIC FINDINGS (Q.67=1), ASK [N=461]:**

Q.68 Were your clergy usually [**RANDOMIZE: critical of science, supportive of science**] or neither in particular?

- 11 Critical of science
- 30 Supportive of science
- 52 Neither in particular
- 7 Don't know/Refused (**VOL.**)

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

PARTY In politics TODAY, do you consider yourself a Republican, Democrat, or Independent?

**IF ANSWERED 3, 4, 5 OR 9 IN PARTY, ASK:**

PARTYLN As of today do you lean more to the Republican Party or more to the Democratic Party?

|                          |                   |                 |                    | (VOL.)            | (VOL.)       | (VOL.)     |             |             |
|--------------------------|-------------------|-----------------|--------------------|-------------------|--------------|------------|-------------|-------------|
|                          | <u>Republican</u> | <u>Democrat</u> | <u>Independent</u> | <u>No</u>         | <u>Other</u> | <u>DK/</u> | <i>Lean</i> | <i>Lean</i> |
|                          |                   |                 |                    | <u>Preference</u> | <u>Party</u> | <u>Ref</u> | <u>Rep</u>  | <u>Dem</u>  |
| May, 2009                | 23                | 39              | 29                 | 4                 | *            | 4          | 9           | 14          |
| April, 2009              | 22                | 33              | 39                 | 3                 | *            | 3          | 13          | 18          |
| March, 2009              | 24                | 34              | 35                 | 5                 | *            | 2          | 12          | 17          |
| February, 2009           | 24                | 36              | 34                 | 3                 | 1            | 2          | 13          | 17          |
| January, 2009            | 25                | 37              | 33                 | 3                 | *            | 2          | 11          | 16          |
| December, 2008           | 26                | 39              | 30                 | 2                 | *            | 3          | 8           | 15          |
| Late October, 2008       | 24                | 39              | 32                 | 2                 | *            | 3          | 11          | 15          |
| Mid-October, 2008        | 27                | 35              | 31                 | 4                 | *            | 3          | 9           | 16          |
| Early October, 2008      | 26                | 36              | 31                 | 4                 | *            | 3          | 11          | 15          |
| Late September, 2008     | 25                | 35              | 34                 | 3                 | 1            | 2          | 13          | 15          |
| Mid-September, 2008      | 28                | 35              | 32                 | 3                 | *            | 2          | 12          | 14          |
| August, 2008             | 26                | 34              | 34                 | 4                 | *            | 2          | 12          | 17          |
| July, 2008               | 24                | 36              | 34                 | 3                 | *            | 3          | 12          | 15          |
| June, 2008               | 26                | 37              | 32                 | 3                 | *            | 2          | 11          | 16          |
| Late May, 2008           | 25                | 35              | 35                 | 2                 | *            | 3          | 13          | 15          |
| April, 2008              | 24                | 37              | 31                 | 5                 | 1            | 2          | 11          | 15          |
| March, 2008              | 24                | 38              | 29                 | 5                 | *            | 4          | 9           | 14          |
| Late February, 2008      | 24                | 38              | 32                 | 3                 | *            | 3          | 10          | 17          |
| Early February, 2008     | 26                | 35              | 31                 | 5                 | *            | 3          | 11          | 14          |
| January, 2008            | 24                | 33              | 37                 | 4                 | *            | 2          | 12          | 18          |
| <b>Yearly Totals</b>     |                   |                 |                    |                   |              |            |             |             |
| 2008                     | 25.3              | 35.8            | 31.7               | 3.8               | .3           | 3.1        | 10.5        | 15.4        |
| 2007                     | 25.4              | 32.9            | 33.7               | 4.6               | .4           | 3.1        | 10.7        | 16.7        |
| 2006                     | 27.6              | 32.8            | 30.3               | 5.0               | .4           | 3.9        | 10.2        | 14.5        |
| 2005                     | 29.2              | 32.8            | 30.3               | 4.5               | .3           | 2.8        | 10.2        | 14.9        |
| 2004                     | 29.7              | 33.4            | 29.8               | 3.9               | .4           | 2.9        | 11.7        | 13.4        |
| 2003                     | 29.8              | 31.4            | 31.2               | 4.7               | .5           | 2.5        | 12.1        | 13.0        |
| 2002                     | 30.3              | 31.2            | 30.1               | 5.1               | .7           | 2.7        | 12.6        | 11.6        |
| 2001                     | 29.2              | 33.6            | 28.9               | 5.1               | .5           | 2.7        | 11.7        | 11.4        |
| <i>2001 Post-Sept 11</i> | <i>30.9</i>       | <i>31.8</i>     | <i>27.9</i>        | <i>5.2</i>        | <i>.6</i>    | <i>3.6</i> | <i>11.7</i> | <i>9.4</i>  |
| <i>2001 Pre-Sept 11</i>  | <i>28.2</i>       | <i>34.6</i>     | <i>29.5</i>        | <i>5.0</i>        | <i>.5</i>    | <i>2.1</i> | <i>11.7</i> | <i>12.5</i> |
| 2000                     | 27.5              | 32.5            | 29.5               | 5.9               | .5           | 4.0        | 11.6        | 11.6        |
| 1999                     | 26.6              | 33.5            | 33.7               | 3.9               | .5           | 1.9        | 13.0        | 14.5        |
| 1998                     | 27.5              | 33.2            | 31.9               | 4.6               | .4           | 2.4        | 11.8        | 13.5        |
| 1997                     | 28.2              | 33.3            | 31.9               | 4.0               | .4           | 2.3        | 12.3        | 13.8        |
| 1996                     | 29.2              | 32.7            | 33.0               | 5.2               |              |            | 12.7        | 15.6        |
| 1995                     | 31.4              | 29.7            | 33.4               | 5.4               |              |            | 14.4        | 12.9        |
| 1994                     | 29.8              | 31.8            | 33.8               | 4.6               |              |            | 14.3        | 12.6        |
| 1993                     | 27.4              | 33.8            | 34.0               | 4.8               |              |            | 11.8        | 14.7        |
| 1992                     | 27.7              | 32.7            | 35.7               | 3.9               |              |            | 13.8        | 15.8        |
| 1991                     | 30.9              | 31.4            | 33.2               | 4.5               |              |            | 14.6        | 10.8        |
| 1990                     | 31.0              | 33.1            | 29.1               | 6.8               |              |            | 12.4        | 11.3        |
| 1989                     | 33                | 33              | 34                 |                   |              |            |             |             |
| 1987                     | 26                | 35              | 39                 |                   |              |            |             |             |

**PEW RESEARCH CENTER FOR THE PEOPLE & THE PRESS  
MID-JUNE 2009 OMNIBUS SURVEY  
FINAL TOPLINE  
June 18-21, 2009  
N=1,005**

**ASK ALL:**

Q.2 If you were making up the budget for the federal government this year, would you increase spending for [INSERT FIRST ITEM, RANDOMIZE, OBSERVE FORM SPLITS], decrease spending for [INSERT FIRST ITEM] or keep spending the same for this? What about for [NEXT ITEM]?

| <b>ASK ALL:</b> |                     | Increase<br><u>spending</u> | Decrease<br><u>spending</u> | Keep spending<br><u>the same</u> | (VOL.)<br><u>DK/Ref</u> |
|-----------------|---------------------|-----------------------------|-----------------------------|----------------------------------|-------------------------|
| a.              | Scientific research |                             |                             |                                  |                         |
|                 | Mid-June, 2009      | 39                          | 14                          | 40                               | 7                       |
|                 | April, 2001         | 41                          | 10                          | 46                               | 3                       |
|                 | May, 1997           | 45                          | 14                          | 38                               | 3                       |
|                 | December, 1994      | 37                          | 15                          | 44                               | 4                       |
|                 | May, 1990           | 51                          | 9                           | 37                               | 3                       |
|                 | May, 1987           | 45                          | 9                           | 42                               | 4                       |

**ASK FORM 1 ONLY [N=505]:**

|                             |                                     |    |    |    |   |
|-----------------------------|-------------------------------------|----|----|----|---|
| b.F1                        | Health care                         |    |    |    |   |
|                             | Mid-June, 2009                      | 61 | 10 | 24 | 6 |
|                             | February, 2002                      | 69 | 4  | 24 | 3 |
|                             | April, 2001                         | 71 | 4  | 23 | 2 |
|                             | May, 1997                           | 57 | 7  | 34 | 2 |
|                             | December, 1994                      | 52 | 11 | 33 | 4 |
|                             | August, 1990                        | 74 | 6  | 18 | 2 |
|                             | May, 1990                           | 80 | 3  | 16 | 1 |
|                             | May, 1987                           | 72 | 3  | 23 | 2 |
| c.F1                        | Energy                              |    |    |    |   |
|                             | Mid-June, 2009                      | 41 | 15 | 35 | 9 |
|                             | February, 2002                      | 34 | 9  | 49 | 8 |
|                             | April, 2001                         | 52 | 9  | 35 | 4 |
| d.F1                        | Anti-terrorism defenses in the U.S. |    |    |    |   |
|                             | Mid-June, 2009                      | 35 | 17 | 41 | 7 |
|                             | February, 2002                      | 63 | 4  | 29 | 4 |
| e.F1                        | Education                           |    |    |    |   |
|                             | Mid-June, 2009                      | 67 | 6  | 23 | 4 |
|                             | February, 2002                      | 73 | 3  | 22 | 2 |
|                             | April, 2001                         | 76 | 5  | 18 | 1 |
| <b>TREND FOR COMPARISON</b> |                                     |    |    |    |   |
| The public school systems   |                                     |    |    |    |   |
|                             | May, 1997                           | 67 | 7  | 23 | 3 |
|                             | December, 1994                      | 64 | 6  | 28 | 2 |
|                             | May, 1990                           | 76 | 3  | 20 | 1 |
|                             | May, 1987                           | 69 | 4  | 25 | 2 |
| f.F1                        | Veterans benefits and services      |    |    |    |   |
|                             | Mid-June, 2009                      | 63 | 2  | 29 | 6 |
|                             | April, 2001                         | 58 | 3  | 34 | 5 |

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

| <b>Q.2 CONTINUED...</b>         |   | <u>Increase<br/>spending</u> | <u>Decrease<br/>spending</u> | <u>Keep spending<br/>the same</u> | <b>(VOL.)<br/>DK/Ref</b> |
|---------------------------------|---|------------------------------|------------------------------|-----------------------------------|--------------------------|
| g.F1                            | Economic assistance to needy people<br>around the world |                              |                              |                                   |                          |
|                                 | Mid-June, 2009  | 26                           | 34                           | 33                                | 7                        |
| <b>ASK FORM 2 ONLY [N=500]:</b> |   |                              |                              |                                   |                          |
| h.F2                            | Military defense  |                              |                              |                                   |                          |
|                                 | Mid-June, 2009  | 40                           | 18                           | 37                                | 5                        |
|                                 | February, 2002  | 60                           | 5                            | 31                                | 4                        |
|                                 | April, 2001   | 47                           | 11                           | 40                                | 2                        |
|                                 | May, 1997   | 21                           | 30                           | 46                                | 3                        |
|                                 | December, 1994  | 31                           | 23                           | 44                                | 2                        |
|                                 | August, 1990  | 23                           | 43                           | 31                                | 3                        |
|                                 | May, 1990   | 18                           | 40                           | 39                                | 3                        |
|                                 | May, 1987   | 24                           | 29                           | 44                                | 3                        |
| i.F2                            | The State Department and<br>American Embassies          |                              |                              |                                   |                          |
|                                 | Mid-June, 2009  | 9                            | 28                           | 50                                | 12                       |
|                                 | April, 2001   | 11                           | 26                           | 55                                | 8                        |
| j.F2                            | Government assistance for the unemployed                |                              |                              |                                   |                          |
|                                 | Mid-June, 2009  | 44                           | 15                           | 36                                | 6                        |
|                                 | February, 2002  | 40                           | 14                           | 41                                | 5                        |
|                                 | May, 1997   | 20                           | 33                           | 44                                | 3                        |
|                                 | December, 1994  | 25                           | 23                           | 49                                | 3                        |
|                                 | February, 1989  | 26                           | 14                           | 57                                | 3                        |
|                                 | May, 1987   | 41                           | 15                           | 41                                | 3                        |
| k.f2                            | Agriculture   |                              |                              |                                   |                          |
|                                 | Mid-June, 2009  | 35                           | 12                           | 41                                | 13                       |
|                                 | April, 2001   | 46                           | 8                            | 42                                | 4                        |
| l.F2                            | Medicare  |                              |                              |                                   |                          |
|                                 | Mid-June, 2009  | 53                           | 6                            | 37                                | 4                        |
|                                 | February, 2002  | 63                           | 3                            | 31                                | 3                        |
|                                 | April, 2001   | 70                           | 2                            | 26                                | 2                        |
|                                 | May, 1997   | 44                           | 8                            | 44                                | 4                        |
| m.F2                            | Combating crime   |                              |                              |                                   |                          |
|                                 | Mid-June, 2009  | 45                           | 10                           | 39                                | 6                        |
|                                 | April, 2001   | 55                           | 5                            | 37                                | 3                        |
|                                 | May, 1997   | 62                           | 7                            | 29                                | 2                        |
|                                 | December, 1994  | 71                           | 4                            | 23                                | 2                        |
| n.F2                            | Environmental protection                                |                              |                              |                                   |                          |
|                                 | Mid-June, 2009  | 43                           | 16                           | 34                                | 6                        |
|                                 | February, 2002  | 43                           | 9                            | 45                                | 3                        |
|                                 | April, 2001   | 48                           | 9                            | 40                                | 3                        |
|                                 | May, 1997   | 46                           | 14                           | 38                                | 2                        |
|                                 | December, 1994  | 40                           | 17                           | 40                                | 3                        |
|                                 | May, 1990   | 71                           | 3                            | 24                                | 2                        |
|                                 | May, 1987   | 59                           | 4                            | 34                                | 3                        |

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

Now I have just a few short questions such as you might see on a television game show. First,  
**RANDOMIZE Q11 THROUGH Q19 BLOCK WITH Q20a-e**  
**RANDOMIZE Q11 THROUGH Q19**

**ASK ALL:**

Q.11 According to most astronomers, which of the following is no longer considered a planet  
[READ AND RANDOMIZE]?

- 60 Pluto (*Correct*)
- 4 Mercury
- 5 Neptune [OR]
- 3 Saturn
- 27 Don't know/Refused [VOL. DO NOT READ]

**RANDOMIZE Q11 THROUGH Q19**

**ASK ALL:**

Q.12 Which of the following may cause a Tsunami [READ AND RANDOMIZE]?

- 77 An earthquake under the ocean (*Correct*)
- 9 A very warm ocean current
- 4 A melting glacier [OR]
- 1 A large school of fish
- 9 Don't know/Refused [VOL. DO NOT READ]

**RANDOMIZE Q11 THROUGH Q19**

**ASK ALL:**

Q.13 The global positioning system, or GPS, relies on which of these to work: [READ AND RANDOMIZE]?

- 82 Satellites (*Correct*)
- 2 Stars
- 2 Magnets
- 3 Lasers
- 11 Don't know/Refused [VOL. DO NOT READ]

**RANDOMIZE Q11 THROUGH Q19**

**ASK ALL:**

Q.14 What gas do most scientists believe causes temperatures in the atmosphere to rise?  
[READ AND RANDOMIZE]

- |    |                                       |                          |
|----|---------------------------------------|--------------------------|
| 65 | Carbon dioxide ( <i>Correct</i> )     | May<br><u>2009</u><br>66 |
| 7  | Hydrogen                              | 7                        |
| 4  | Helium                                | 4                        |
| 5  | Radon                                 | 6                        |
| 20 | Don't know/Refused [VOL. DO NOT READ] | 17                       |

**RANDOMIZE Q11 THROUGH Q19**

**ASK ALL:**

Q.15 What have scientists recently discovered on Mars...? Is it...**[READ AND RANDOMIZE]**

|    |  | May<br><u>2009</u> |
|----|--|--------------------|
| 61 | Water ( <i>Correct</i> )                     | 60                 |
| 3  | Platinum                                     | 5                  |
| 9  | Mold   | 9                  |
| 5  | Plants                                       | 5                  |
| 21 | Don't know/Refused <b>[VOL. DO NOT READ]</b> | 21                 |

**RANDOMIZE Q11 THROUGH Q19**

**ASK ALL:**

Q.16 Which over-the-counter drug do doctors recommend that people take to help prevent heart attacks ... is it **[READ AND RANDOMIZE]**

|    |  | May<br><u>2009</u> |
|----|--|--------------------|
| 91 | Aspirin ( <i>Correct</i> )                   | 89                 |
| 3  | Cortisone                                    | 4                  |
| 1  | Antacids                                     | 1                  |
| 5  | Don't know/Refused <b>[VOL. DO NOT READ]</b> | 5                  |

**RANDOMIZE Q11 THROUGH Q19**

**ASK ALL:**

Q.17 How are stem cells different from other cells? **[READ AND RANDOMIZE]**

|    |  | May<br><u>2009</u> |
|----|--|--------------------|
| 4  | They are found <b>ONLY</b> in plants   | 4                  |
| 52 | They can develop into many different types of cells ( <i>Correct</i> )<br>[OR] | 55                 |
| 22 | They are found <b>ONLY</b> in bone marrow                                      | 24                 |
| 21 | Don't know/Refused <b>[VOL. DO NOT READ]</b>                                   | 18                 |

**RANDOMIZE Q11 THROUGH Q19**

**ASK ALL:**

Q.18 Do you happen to know which political party has a majority in the U.S. House of Representatives?  
**[READ AND RANDOMIZE]**

|   | <u>Democrats</u> | <u>Republicans</u> | <u>(VOL.)<br/>DK/Ref</u> |
|---|------------------|--------------------|--------------------------|
| Mid-June, 2009                              | <b>76</b>        | 12                 | 12                       |
| March 26-29, 2009                           | <b>86</b>        | 12                 | 2                        |
| December 4-7, 2008                          | <b>82</b>        | 11                 | 7                        |
| February 28-March 2, 2008                   | <b>70</b>        | 26                 | 4                        |
| August 16-19, 2007                          | <b>78</b>        | 19                 | 3                        |
| February, 2007                              | <b>76</b>        | 10                 | 14                       |
| <b>TREND FOR COMPARISON:<sup>8</sup></b>    |                  |                    |                          |
| May, 2008                                   | <b>53</b>        | 15                 | 32                       |
| Late October, 2006                          | 4                | <b>58</b>          | 38                       |
| April, 2006                                 | 6                | <b>64</b>          | 30                       |
| April, 2004                                 | 8                | <b>56</b>          | 36                       |
| June, 2001                                  | 34               | <b>31</b>          | 35                       |
| August, 1999                                | 8                | <b>55</b>          | 37                       |
| December, 1998                              | 11               | <b>56</b>          | 33                       |
| June, 1997                                  | 6                | <b>50</b>          | 44                       |
| April, 1996                                 | 8                | <b>70</b>          | 22                       |
| June, 1995                                  | 5                | <b>73</b>          | 22                       |
| July, 1994                                  | <b>60</b>        | 18                 | 22                       |
| February, 1994                              | <b>58</b>        | 42                 | n/a                      |
| September, 1992                             | <b>46</b>        | 9                  | 45                       |
| June, 1992                                  | <b>44</b>        | 12                 | 44                       |
| May, 1992                                   | <b>49</b>        | 12                 | 39                       |
| May, 1989 <i>Political Knowledge Survey</i> | <b>68</b>        | 16                 | 16                       |

**\*Correct answers for each trend in bold**

**RANDOMIZE Q11 THROUGH Q19**

**ASK ALL:**

Q.19 What is the name of the woman who surprised audiences with her singing talent in the TV show "Britain's Got Talent"? Is it... **[READ AND RANDOMIZE]:**

- 66 Susan Boyle (*Correct*)
- 4 Oprah Winfrey
- 4 Susan Sarandon
- 3 Venus Williams
- 24 Don't know/Refused **[VOL. DO NOT READ]**

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<sup>8</sup> In May 2008, and from May 1992 through Late October 2006 this was asked as an open-ended question, without offering response options for Democrats and Republicans. In May 1989 the question was worded "As a result of the election last year which party now has the most members in the U.S. House of Representatives in Washington?"

**RANDOMIZE Q11 THROUGH Q19 BLOCK WITH Q.20a-e**

**ASK ALL:**

Q.20 Now, for each statement that I read, please tell me if it is true or false. If you don't know or aren't sure, just tell me so, and we will skip to the next question. Remember: true, false or don't know.  
**[RANDOMIZE ITEMS; READ EACH ITEM, FOLLOWED BY...is that true or false?]**

|    |  | <u>True</u> | <u>False</u> | <u>(VOL.)</u><br><u>DK/Ref</u> |
|----|--|-------------|--------------|--------------------------------|
| a. | All radioactivity is man-made.<br>Mid-June, 2009   | 21          | <b>63</b>    | 16                             |
|    | <b>TREND FOR COMPARISON:</b><br><i>General Social Survey, 2008</i>   | <i>18</i>   | <i>70</i>    | <i>12</i>                      |
| b. | Electrons are smaller than atoms<br>Mid-June, 2009   | <b>46</b>   | 24           | 30                             |
|    | <b>TREND FOR COMPARISON:</b><br><i>General Social Survey, 2008</i>   | <i>53</i>   | <i>23</i>    | <i>25</i>                      |
| c. | Lasers work by focusing sound waves.<br>Mid-June, 2009   | 22          | <b>47</b>    | 31                             |
|    | <b>TREND FOR COMPARISON:</b><br><i>General Social Survey, 2008</i>   | <i>23</i>   | <i>49</i>    | <i>28</i>                      |
| d. | Antibiotics will kill viruses as well as bacteria.<br>Mid-June, 2009   | 36          | <b>54</b>    | 10                             |
|    | <b>TREND FOR COMPARISON:</b><br><i>General Social Survey, 2008</i>   | <i>39</i>   | <i>54</i>    | <i>8</i>                       |
| e. | The continents on which we live have been moving<br>their location for millions of years and will continue<br>to move in the future.<br>Mid-June, 2009 | <b>76</b>   | 10           | 13                             |
|    | <b>TREND FOR COMPARISON:</b><br><i>General Social Survey, 2008</i>   | <i>77</i>   | <i>10</i>    | <i>13</i>                      |

**Correct answers for each trend in bold**

Now, on another topic...

**ASK ALL:**

Q.21 If you were setting priorities for the government these days, would you place a higher priority on  
**[INSERT ITEM AND RANDOMIZE]** or a higher priority on **[ITEM]**?

- 48 Spending more to help the economy recover
- 46 Reducing the budget deficit
- 6 Don't know/Refused (VOL.)

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

D3 In politics TODAY, do you consider yourself a Republican, Democrat, or Independent?

|                          |                   |                 |                    | (VOL.)<br>No      | (VOL.)<br>Other | (VOL.)<br>DK/<br>Ref |
|--------------------------|-------------------|-----------------|--------------------|-------------------|-----------------|----------------------|
|                          | <u>Republican</u> | <u>Democrat</u> | <u>Independent</u> | <u>Preference</u> | <u>Party</u>    |                      |
| Mid-June, 2009           | 25                | 36              | 34                 | 3                 | 1               | 2                    |
| June, 2009               | 25                | 34              | 34                 | 3                 | *               | 3                    |
| May, 2009                | 23                | 39              | 29                 | 4                 | *               | 4                    |
| April, 2009              | 22                | 33              | 39                 | 3                 | *               | 3                    |
| March, 2009              | 24                | 34              | 35                 | 5                 | *               | 2                    |
| February, 2009           | 24                | 36              | 34                 | 3                 | 1               | 2                    |
| January, 2009            | 25                | 37              | 33                 | 3                 | *               | 2                    |
| December, 2008           | 26                | 39              | 30                 | 2                 | *               | 3                    |
| Late October, 2008       | 24                | 39              | 32                 | 2                 | *               | 3                    |
| Mid-October, 2008        | 27                | 35              | 31                 | 4                 | *               | 3                    |
| Early October, 2008      | 26                | 36              | 31                 | 4                 | *               | 3                    |
| Late September, 2008     | 25                | 35              | 34                 | 3                 | 1               | 2                    |
| Mid-September, 2008      | 28                | 35              | 32                 | 3                 | *               | 2                    |
| August, 2008             | 26                | 34              | 34                 | 4                 | *               | 2                    |
| July, 2008               | 24                | 36              | 34                 | 3                 | *               | 3                    |
| June, 2008               | 26                | 37              | 32                 | 3                 | *               | 2                    |
| Late May, 2008           | 25                | 35              | 35                 | 2                 | *               | 3                    |
| April, 2008              | 24                | 37              | 31                 | 5                 | 1               | 2                    |
| March, 2008              | 24                | 38              | 29                 | 5                 | *               | 4                    |
| Late February, 2008      | 24                | 38              | 32                 | 3                 | *               | 3                    |
| Early February, 2008     | 26                | 35              | 31                 | 5                 | *               | 3                    |
| January, 2008            | 24                | 33              | 37                 | 4                 | *               | 2                    |
| <b>Yearly Totals</b>     |                   |                 |                    |                   |                 |                      |
| 2008                     | 25.3              | 35.8            | 31.7               | 3.8               | .3              | 3.1                  |
| 2007                     | 25.4              | 32.9            | 33.7               | 4.6               | .4              | 3.1                  |
| 2006                     | 27.6              | 32.8            | 30.3               | 5.0               | .4              | 3.9                  |
| 2005                     | 29.2              | 32.8            | 30.3               | 4.5               | .3              | 2.8                  |
| 2004                     | 29.7              | 33.4            | 29.8               | 3.9               | .4              | 2.9                  |
| 2003                     | 29.8              | 31.4            | 31.2               | 4.7               | .5              | 2.5                  |
| 2002                     | 30.3              | 31.2            | 30.1               | 5.1               | .7              | 2.7                  |
| 2001                     | 29.2              | 33.6            | 28.9               | 5.1               | .5              | 2.7                  |
| <i>2001 Post-Sept 11</i> | <i>30.9</i>       | <i>31.8</i>     | <i>27.9</i>        | <i>5.2</i>        | <i>.6</i>       | <i>3.6</i>           |
| <i>2001 Pre-Sept 11</i>  | <i>28.2</i>       | <i>34.6</i>     | <i>29.5</i>        | <i>5.0</i>        | <i>.5</i>       | <i>2.1</i>           |
| 2000                     | 27.5              | 32.5            | 29.5               | 5.9               | .5              | 4.0                  |
| 1999                     | 26.6              | 33.5            | 33.7               | 3.9               | .5              | 1.9                  |
| 1998                     | 27.5              | 33.2            | 31.9               | 4.6               | .4              | 2.4                  |
| 1997                     | 28.2              | 33.3            | 31.9               | 4.0               | .4              | 2.3                  |
| 1996                     | 29.2              | 32.7            | 33.0               | 5.2               | --              | --                   |
| 1995                     | 31.4              | 29.7            | 33.4               | 5.4               | --              | --                   |
| 1994                     | 29.8              | 31.8            | 33.8               | 4.6               | --              | --                   |
| 1993                     | 27.4              | 33.8            | 34.0               | 4.8               | --              | --                   |
| 1992                     | 27.7              | 32.7            | 35.7               | 3.9               | --              | --                   |
| 1991                     | 30.9              | 31.4            | 33.2               | 4.5               | --              | --                   |
| 1990                     | 31.0              | 33.1            | 29.1               | 6.8               | --              | --                   |
| 1989                     | 33                | 33              | 34                 | --                | --              | --                   |
| 1987                     | 26                | 35              | 39                 | --                | --              | --                   |

**PEW RESEARCH CENTER FOR THE PEOPLE & THE PRESS  
MAY 2009 WEB SURVEY OF SCIENTISTS  
TOPLINE  
May 1– June 14, 2009  
N= 2,533**

In this survey we will be asking you both about issues pertaining to science in general and to your scientific field or specialty. Most questions will be about science in general, and we will specify when we are particularly interested in your views about your specialty.

**ASK ALL:**

Q.1 Would you say that this is generally a good time or a bad time for science?

|    |           |
|----|-----------|
| 76 | Good time |
| 23 | Bad time  |
| 1  | No answer |

**ASK ALL:**

Q.2 Would you say this is generally a good time or a bad time for **your scientific specialty**?

|    |           |
|----|-----------|
| 73 | Good time |
| 25 | Bad time  |
| 2  | No answer |

**ROTATE ORDER OF Q.3/Q.4**

**ASK ALL:**

Q.3 What would you say has been the United States' greatest scientific discovery or achievement during the past twenty years?

*Figures add to more than 100% because of multiple responses.*

|           |  |
|-----------|--|
| <b>55</b> | <b>Biomedical/Health (NET)</b>                             |
| 39        | Human genome project/Genetics                              |
| 9         | Medicine/ Public health                                    |
| 4         | Stem cell research   |
| 3         | Molecular biology/Molecular sciences (general)             |
| 3         | RNA interference/RNAi                                      |
| 2         | Polymerase Chain Reaction (PCR)                            |
| 1         | Genetic engineering in animals and plants/agriculture      |
| 1         | Biotechnology  |
| <b>10</b> | <b>Computer and other technology (NET)</b>                 |
| 8         | Computers/Internet/Communications/Infotech                 |
| 2         | Nanotechnology/Nanoscience                                 |
| <b>10</b> | <b>Space (NET)</b>   |
| 4         | Space/astrophysics/planets (general)                       |
| 3         | Hubble Space Telescope/Space telescopes                    |
| 1         | Accelerating expansion of universe                         |
| 1         | Dark energy/Dark matter                                    |
| 1         | Mars discoveries/Mars rover                                |
| 3         | Global climate change/Warming/Climate research/Environment |
| 15        | Other  |
| 17        | No answer/Don't know/Refused/None                          |

**ROTATE ORDER OF Q.3/Q.4**

**ASK ALL:**

Q.4 What would you say has been the United States' greatest scientific failure during the past twenty years?

- 37      Insufficient action/progress on issues (NET)**
  - 12      Energy/Sustainability/Alternative energy
  - 7        Climate change/Global warming/Environmental issues
  - 7        Stem cells
  - 3        Cancellation of superconducting supercollider
  - 2        Cancer
  - 2        Fusion/Cold fusion/Nuclear fusion
  - 2        HIV/AIDS
  - 1        Health care/Medical issues
  - 1        Translating findings into products/Applications
  - 2        Other issues
  
- 21      Scientific knowledge/Communication (NET)**
  - 9        Education of young people/Schools/Training
  - 6        Education/Engagement of the general public
  - 3        Communicating scientific findings to the public
  - 3        Convincing the public of evolution theory/Countering creationism/intelligent design
  - 3        Convincing the public of climate change/global warming
  
- 14      Funding and support of research (NET)**
  - 10      Funding and support of research (general)
  - 2        Lack of funding for young scientists/Recruitment
  - 1        Poor distribution/allocation of funding
  - 1        Unstable/inconsistent government funding
  
- 13      Politicization/Commercialization of Science**
  - 6        Political pressure/influence/suppression
  - 4        Bush administration
  - 2        Failure of good science to penetrate public policy
  - 1        Religion interfering with science
  - 1        Commercialization/Corporatization
  
- 3        Space exploration/Space program/Shuttle/NASA
- 1        Ethics/Integrity in science
  
- 10      Other
- 15      No answer/Don't know/Refused/None

**NO QUESTIONS 5-6**

**ASK ALL:**

Q.7 Compared to other industrialized countries, how would you rate the United States with regard to its overall scientific achievements?

|    |                              | <i>Trend for comparison</i> |
|----|------------------------------|-----------------------------|
|    |                              | <b>GP</b>                   |
|    |                              | <u>May 2009</u>             |
| 49 | Best in the world            | 17                          |
| 45 | Above average                | 47                          |
| 5  | Average                      | 26                          |
| 1  | Below average                | 5                           |
| *  | No answer/Don't know/Refused | 4                           |

**ASK ALL:**

Q.8 And how would you rate the United States with regard to scientific achievements in **your scientific specialty**?

- 45 Best in the world
- 43 Above average
- 9 Average
- 2 Below average
- 1 No answer

**NO QUESTIONS 9-13**

**ASK ALL:**

Q.14 How much of a problem, if at all, do you think each of the following are for science in general?

**RANDOMIZE LIST**

|    |   | Major<br><u>problem</u> | Minor<br><u>problem</u> | Not a<br><u>problem</u> | No<br><u>answer</u> |
|----|---|-------------------------|-------------------------|-------------------------|---------------------|
| a. | The public expects solutions to problems too quickly                              | 49                      | 45                      | 6                       | *                   |
| b. | The news media oversimplify scientific findings                                   | 48                      | 45                      | 6                       | *                   |
| c. | News reports don't distinguish between well founded and not well founded findings | 76                      | 22                      | 2                       | *                   |
| d. | The public does not know very much about science                                  | 85                      | 14                      | 1                       | *                   |

**NO QUESTIONS 15-21**

**RANDOMIZE Q.22/Q.23**

**ASK ALL:**

Q.22 All things considered, how would you rate television news coverage of science?

- 1 Excellent
- 14 Good
- 48 Only fair
- 35 Poor
- 2 No answer

**RANDOMIZE Q.22/Q.23**

**ASK ALL:**

Q.23 All things considered, how would you rate newspaper coverage of science?

- 2 Excellent
- 34 Good
- 48 Only fair
- 15 Poor
- 1 No answer

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

Q.24 How much have you heard or read about town-hall or other public meetings where scientists and the general public discuss controversial issues related to research?

- 2 A lot
- 22 Some
- 44 Not too much
- 32 Nothing at all
- \* No answer

**ASK IF "A LOT" OR "SOME" IN Q.24 [N=620]:**

Q.25 How useful are these types of public meetings for each of the following groups?:  
**RANDOMIZE ITEMS**

|    |              | <u>Very useful</u> | <u>Fairly useful</u> | <u>Not useful</u> | <u>No answer</u> |
|----|--------------|--------------------|----------------------|-------------------|------------------|
| a. | The public   | 43                 | 45                   | 9                 | 3                |
| b. | Policymakers | 40                 | 47                   | 10                | 3                |
| c. | Scientists   | 32                 | 51                   | 14                | 2                |
| d. | News media   | 35                 | 53                   | 9                 | 3                |

**ASK ALL:**

Q.26 Please indicate how much of an impediment, if at all, you think each of the following is to conducting high quality scientific research in the United States today. **RANDOMIZE LIST**

|    |   | <u>Very serious</u> | <u>Serious</u> | <u>Not too serious</u> | <u>Not serious at all</u> | <u>Don't know</u> | <u>No answer</u> |
|----|---|---------------------|----------------|------------------------|---------------------------|-------------------|------------------|
| a. | The way Institutional Review Boards (IRBs) implement human subjects rules                                 | 4                   | 15             | 37                     | 13                        | 30                | 1                |
| b. | Lack of funding for basic research  | 46                  | 41             | 11                     | 1                         | 1                 | *                |
| c. | Visa and immigration problems facing foreign scientists or students who want to work or study in the U.S. | 17                  | 39             | 29                     | 7                         | 7                 | *                |
| d. | Regulations to prevent American technology from being put to inappropriate use overseas (ITAR)            | 4                   | 17             | 36                     | 12                        | 30                | 1                |
| e. | Regulations on animal research  | 6                   | 21             | 44                     | 15                        | 13                | 1                |

**NO ITEM f**

g. Conflict of interest rules used by scientific publications 2 10 40 33 13 1

**NO QUESTIONS 27-29**

**ASK ALL:**

Q.30 What are the most important sources of funding within your scientific specialty? **Please list up to four.**

- 84 Government (NET)**
- 49 *Health and Human Services (SUB-NET)*
  - 49 National Institutes of Health
  - 1 Other HHS
  - 47 National Science Foundation
  - 14 Department of Defense
  - 13 Department of Energy
  - 10 Federal government, general
  - 7 United States Department of Agriculture
  - 6 State/local governments
  - 5 National Aeronautics and Space Administration
  - 4 Department of Commerce (includes National Oceanic and Atmospheric Administration)
  - 3 Environmental Protection Agency
  - 3 Other specific federal agency (e.g. Departments of Justice, Education, Homeland Security)
  - 1 Department of Interior
  - 1 Veteran's Administration
- 50 Private funding (NET)**
- 30 *Foundations/non-profits/research societies/donations (SUB-NET)*
  - 14 Foundations, general
  - 5 Other medical/health groups
  - 4 Howard Hughes Medical Institute
  - 3 American Heart Association
  - 3 Cancer societies (e.g., American Cancer Society, Komen Foundation)
  - 3 Other non-medical groups
  - 1 The Bill & Melinda Gates Foundation
  - 20 *Industry/business (SUB-NET)*
  - 14 Industry/business, general
  - 5 Pharmaceutical industry
  - 2 Venture capital
  - 1 Biotechnology industry
  - 1 Energy/oil/gas industries
  - 4 Private funding, general mention
  - 3 *Professional societies/industrial organizations (SUB-NET)*
  - 2 Other professional organizations
  - 1 American Chemical Society Petroleum Research Fund
  - 1 Personal funding
- 6 Universities  
Supra-governmental organizations (e.g. World Health Organization, World Bank)
- 1 and foreign governments
- 1 Other, non-specific
- 11 No answer

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

Q.31 When it comes to funding for research in your scientific specialty, which do most funders place greater emphasis on: **RANDOMIZE OPTIONS 1 AND 2**

- 59 Projects expected to make incremental scientific progress that have lower risk of failure
- 5 Projects with the potential for scientific breakthroughs, but with higher risk of failure
- 28 Both types of projects about equally
- 7 No answer

**ASK ALL:**

Q.32 Please indicate whether you think each of the following has too much influence, or not, on the direction of research in your scientific specialty. **RANDOMIZE ITEMS**

|    |  | <u>Yes</u> | <u>No</u> | <u>No<br/>answer</u> |
|----|--|------------|-----------|----------------------|
| a. | The emphasis on developing marketable products                           | 40         | 56        | 4                    |
| b. | A focus on projects that will yield results quickly                      | 66         | 31        | 3                    |
| c. | The incentive to do research in areas where funding is readily available | 76         | 20        | 3                    |
| d. | Political groups or officials  | 50         | 47        | 3                    |

**ASK ALL:**

Q.33 Does the possibility of making a lot of money lead many scientists in your specialty to...? **RANDOMIZE ITEMS**

|    |  | <u>Yes</u> | <u>No</u> | <u>No<br/>answer</u> |
|----|--|------------|-----------|----------------------|
| a. | Cut corners on research quality  | 26         | 68        | 5                    |
| b. | Pursue research that violates ethical principles                                     | 11         | 84        | 5                    |
| c. | Pursue creative research ideas   | 32         | 63        | 5                    |
| d. | Pursue projects that yield marketable products, but do not advance science very much | 47         | 49        | 4                    |

**NO QUESTIONS 34 THROUGH 38**

Next we have a few questions about issues being debated by the public.

**RANDOMIZE Q.39-Q.40 BLOCK WITH Q.41-Q.42 BLOCK**

**ASK ALL:**

Q.39 Which comes closer to your view: **[RANDOMIZE]**

|    |   | <i>Trend for comparison</i><br><b>GP</b><br><u>May 2009</u> |
|----|---|---|
| 97 | Human beings and other living things have evolved over time   | 61  |
| 2  | Human beings and other living things have existed in their present form since the beginning of time | 31  |
| 1  | No answer/Don't know/Refused  | 8   |

**RANDOMIZE Q.39-Q.40 BLOCK WITH Q.41-Q.42 BLOCK  
IF EVOLVED (1 in Q.39), ASK:**

Q.40 Do you think that...[ **RANDOMIZE** ]?

**BASED ON TOTAL:**

|     |   | <i>Trend for comparison</i> |
|-----|---|-----------------------------|
|     |   | <b>GP</b>                   |
|     |   | <u>May 2009</u>             |
| 87  | Humans and other living things have evolved due to natural processes such as natural selection,<br><b>[OR]</b>                      | 32                          |
| 8   | A supreme being guided the evolution of living things for the purpose of creating humans and other life in the form it exists today | 22                          |
| 2   | No answer/Don't know/Refused  | 7                           |
| (3) | <i>Humans existed in present form/Don't know in Q.39</i>  | (39)                        |

**RANDOMIZE Q.39-Q.40 BLOCK WITH Q.41-Q.42 BLOCK**

**ASK ALL:**

Q.41 From what you've read and heard, do you think [**RANDOMIZE 1 & 2**]:

|    |  | <i>Trend for comparison</i> |
|----|--|-----------------------------|
|    |  | <b>GP</b>                   |
|    |  | <u>May 2009</u>             |
| 10 | The earth is getting warmer mostly because of natural changes in the atmosphere                          | 36                          |
| 84 | The earth is getting warmer mostly because of human activity such as burning fossil fuels<br><b>[OR]</b> | 49                          |
| 4  | There is no solid evidence that the earth is getting warmer  | 11                          |
| 2  | No answer/Don't know/Refused   | 4                           |

**RANDOMIZE Q.39-Q.40 BLOCK WITH Q.41-Q.42 BLOCK**

**ASK ALL:**

Q.42 In your view, how serious a problem is global warming?  
Is it...

|    |                              | <i>Trend for comparison</i> |
|----|------------------------------|-----------------------------|
|    |                              | <b>GP</b>                   |
|    |                              | <u>May 2009</u>             |
| 70 | Very serious                 | 47                          |
| 22 | Somewhat serious             | 26                          |
| 4  | Not too serious a problem    | 11                          |
| 2  | Not a problem                | 13                          |
| *  | No answer/Don't know/Refused | 2                           |

**NO QUESTIONS 43-46**

**RANDOMIZE Q.47a-c BLOCK AND Q.48**

**RANDOMIZE Q47a THROUGH q47c**

**ASK ALL:**

Q. 47a Do you favor or oppose the use of animals in scientific research?

|    |                              | <i>Trend for comparison</i> |
|----|------------------------------|-----------------------------|
|    |                              | <b>GP</b>                   |
|    |                              | <u>May 2009</u>             |
| 93 | Favor                        | 52                          |
| 5  | Oppose                       | 43                          |
| 2  | No answer/Don't know/Refused | 6                           |

**RANDOMIZE Q.47a-c BLOCK AND Q.48**

**RANDOMIZE Q47a THROUGH q47c**

**ASK ALL:**

Q. 47b Do you favor or oppose building more nuclear power plants to generate electricity?

|    |                              | <i>Trend for comparison</i> |
|----|------------------------------|-----------------------------|
|    |                              | <b>GP</b>                   |
|    |                              | <u>May 2009</u>             |
| 70 | Favor                        | 51                          |
| 27 | Oppose                       | 42                          |
| 3  | No answer/Don't know/Refused | 7                           |

**RANDOMIZE Q.47a-c BLOCK AND Q.48**

**RANDOMIZE Q47a THROUGH q47c**

**ASK ALL:**

Q. 47c Do you favor or oppose federal funding for embryonic stem cell research?

|    |                              | <i>Trend for comparison</i> |
|----|------------------------------|-----------------------------|
|    |                              | <b>GP</b>                   |
|    |                              | <u>May 2009</u>             |
| 93 | Favor                        | 58                          |
| 6  | Oppose                       | 35                          |
| 1  | No answer/Don't know/Refused | 7                           |

**RANDOMIZE Q.47 a-c BLOCK AND Q.48**

**ASK ALL:**

Q.48 Thinking about childhood diseases, such as measles, mumps, rubella and polio, [RANDOMIZE]

|    |  | <i>Trend for comparison</i> |
|----|--|-----------------------------|
|    |  | <b>GP</b>                   |
|    |  | <u>May 2009</u>             |
| 17 | Parents should be able to decide not to vaccinate their children | 28                          |
| 82 | All children should be required to be vaccinated                 | 69                          |
| 1  | No answer/Don't know/Refused                                     | 3                           |

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

Now a few questions about science as a career...

**ASK ALL:**

Q.49 Overall, how would you characterize this as a time to begin a career in your scientific specialty area?  
Would you say it is a...

|    |                |
|----|----------------|
| 17 | Very good time |
| 50 | Good time      |
| 27 | Bad time       |
| 5  | Very bad time  |
| 1  | No answer      |

**ASK ALL:**

Q.50 What would you say are the main hurdles for people entering a career as a research scientist in your specialty area these days?

**56 Economic issues (NET)**

|    |                                 |
|----|---------------------------------|
| 46 | Funding/Support                 |
| 9  | Low salaries and benefits/Money |
| 6  | Economic downturn/Budget cuts   |

**36 Job market (NET)**

|    |                                 |
|----|---------------------------------|
| 28 | Job opportunities, general      |
| 11 | Academic jobs/Tenured positions |

**12 Education (NET)**

|   |   |
|---|---|
| 5 | Graduate and post-doctoral education and training |
| 4 | Pre-graduate (K-12 and undergraduate) education   |
| 2 | Education costs, unspecified                      |
| 2 | Education, unspecified                            |

**9 Personal sacrifices (NET)**

|   |                                     |
|---|-------------------------------------|
| 6 | Time commitment/desire required     |
| 3 | Personal life/Family considerations |

**7 Lack of creativity/vision for science and/or field (NET)**

|   |   |
|---|---|
| 4 | Lack of vision/No long term planning                                  |
| 3 | Lack of support for interdisciplinary/creative/collaborative research |

|    |  |
|----|--|
| 7  | Institutional/commercial pressures               |
| 5  | Public attitudes and expectations about science  |
| 3  | Lure of higher paying careers outside of science |
| 1  | Competition, unspecified                         |
| 10 | Other  |
| *  | None   |
| 12 | No answer/Don't know                             |

Q.51 How important for career advancement is it for scientists in your specialty area to get their research covered by the news media?

|    |                      |
|----|----------------------|
| 8  | Very important       |
| 29 | Important            |
| 48 | Not too important    |
| 14 | Not at all important |
| 1  | No answer            |

**NO QUESTION 52**

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

Q.53 Thinking about any scientific research that you have been involved with during the past five years, do you think of your work as **primarily** addressing ...? **RANDOMIZE**

- 49 Basic knowledge questions
- 46 Applied research questions
- 5 No answer

**ASK ALL:**

Q.54 Looking back, how important was each of the following to your decision to become a scientist?

|    |  | Very<br><u>important</u> | Somewhat<br><u>important</u> | Not very<br><u>important</u> | Not at all<br><u>important</u> | No<br><u>answer</u> |
|----|--|--------------------------|------------------------------|------------------------------|--------------------------------|---------------------|
| a. | A desire to work for the public good                       | 41                       | 40                           | 15                           | 4                              | 1                   |
| b. | A desire to make an important discovery                    | 30                       | 44                           | 21                           | 4                              | 1                   |
| c. | An interest in solving intellectually challenging problems | 86                       | 13                           | 1                            | *                              | *                   |
| d. | A desire for a financially rewarding career                | 4                        | 29                           | 45                           | 21                             | 1                   |

**ASK ALL:**

Q.55 Which of the following is a more important motivation for you in doing scientific research [**RANDOMIZE RESPONSE CATEGORIES**]:

- 36 To benefit society, even if that research may not address important scientific questions
- 62 To address important scientific questions, even if that research may have no immediate benefit to society
- 2 No answer

**ASK ALL:**

Q.56 What is your primary **field or scientific discipline**?

**ASK ALL:**

Q.57 Within that field or discipline, what is your primary **scientific specialty area**?

**Summary:**

- 51 Biological and Medical
- 14 Chemistry
- 8 Physics and Astronomy
- 7 Social Sciences and Policy
- 6 Engineering
- 6 Geosciences
- 3 Computer science/Math
- 3 Other field
- 2 No answer/Don't know

**ASK ALL:**

Q.58 Would you describe your own work in your primary specialty area as **clinical research**, or not?

- 11 Yes
- 88 No
- 1 No answer

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

Q.59 Would you describe your own work in your primary scientific specialty area as **interdisciplinary**, or not?

|    |           |
|----|-----------|
| 81 | Yes       |
| 18 | No        |
| 1  | No answer |

**NO QUESTIONS 60-63**

**ASK ALL:**

Q.64 How much attention, if any, do you pay to research findings outside of your primary field or scientific discipline?

|    |              |
|----|--------------|
| 47 | A lot        |
| 48 | Some         |
| 5  | Not too much |
| 1  | None at all  |
| *  | No answer    |

**ASK ALL:**

Q.65 How often, if ever, do you do any of the following? **RANDOMIZE**

|  | <u>Often</u> | <u>Occasionally</u> | <u>Rarely</u> | <u>Never</u> | <u>No answer</u> |
|--|--------------|---------------------|---------------|--------------|------------------|
| a. Write for a blog about science                              | 2            | 5                   | 11            | 82           | 1                |
| b. Read a blog about science                                   | 14           | 28                  | 26            | 32           | *                |
| c. Talk with reporters about new research findings             | 3            | 20                  | 31            | 45           | *                |
| d. Talk with non-scientists about science or research findings | 39           | 48                  | 11            | 2            | *                |

**ASK ALL:**

Q.66 Thinking about the last five years of your career, how much of your time has been devoted to...  
[RANDOMIZE ITEMS]

|                                  | <u>Most or all</u> | <u>A lot</u> | <u>Some</u> | <u>Little or none</u> | <u>No answer</u> |
|----------------------------------|--------------------|--------------|-------------|-----------------------|------------------|
| a. Research                      | 32                 | 34           | 22          | 11                    | 1                |
| b. Teaching                      | 8                  | 23           | 41          | 27                    | 2                |
| c. Management and administration | 10                 | 25           | 35          | 28                    | 2                |
| d. Clinical practice             | 2                  | 4            | 5           | 84                    | 4                |

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**ASK ALL:**

Q.67 In the last five years have you worked on a research project that...

|  | <u>Yes</u> | <u>No</u> | <u>No answer</u> |
|--|------------|-----------|------------------|
| a. Was funded by the Department of Defense   | 13         | 85        | 2                |
| b. Was funded by an agency of the federal government (excluding the Department of Defense) | 65         | 34        | 2                |
| c. Was funded by an industry or private sector sponsor                                     | 47         | 52        | 2                |
| d. Used animals  | 35         | 64        | 1                |
| e. Used human subjects   | 24         | 74        | 2                |

**ASK ALL**

Q.68 Do you think it is appropriate or not appropriate for scientists to become actively involved in political debates about issues such as nuclear power or stem cell research?

|    |                              | <i>Trend for comparison</i> |
|----|------------------------------|-----------------------------|
|    |                              | <b>GP</b>                   |
|    |                              | <u>May 2009</u>             |
| 97 | Appropriate                  | 76                          |
| 3  | Not appropriate              | 18                          |
| *  | No answer/Don't know/Refused | 5                           |

**ASK ALL:**

Q.69 Just your impression, do you think of scientists as a...[RANDOMIZE ORDER OF LIBERAL/CONSERVATIVE]:

|    |                                | <i>Trend for comparison</i> |
|----|--------------------------------|-----------------------------|
|    |                                | <b>GP</b>                   |
|    |                                | <u>May 2009</u>             |
| 56 | Politically liberal group      | 20                          |
| 2  | Politically conservative group | 9                           |
| 42 | Neither in particular          | 64                          |
| 1  | No answer/Don't know/Refused   | 8                           |

**ASK ALL:**

Q.70 How much, if anything, have you heard about claims that government scientists were not allowed to report research findings that conflicted with the Bush administration's point of view?

|    |                              | <i>Trend for comparison</i> |
|----|------------------------------|-----------------------------|
|    |                              | <b>GP</b>                   |
|    |                              | <u>May 2009</u>             |
| 55 | A lot                        | 10                          |
| 30 | A little                     | 34                          |
| 14 | Nothing at all               | 54                          |
| *  | No answer/Don't know/Refused | 2                           |

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**ASK IF Q.70=1 or 2 (Heard “a lot” or “a little”)**

Q.71 Do you think these claims about the Bush administration are true or false?

| <b>BASED ON TOTAL:</b> |  | <i>Trend for comparison</i> |
|------------------------|--|-----------------------------|
|                        |  | <b>GP</b>                   |
|                        |  | <u>May 2009</u>             |
| 77                     | True   | 28                          |
| 6                      | False  | 9                           |
| 3                      | No answer/Don't know/Refused ( <b>VOL.</b> ) | 7                           |
| (14)                   | <i>Heard nothing/Don't know in Q.70</i>      | (56)                        |

**ASK IF Q.71=1:**

Q.72 All in all, how often do you think this occurred during the Bush administration compared with previous administrations? **RANDOMIZE ORDER OF MORE OFTEN/LESS OFTEN**

| <b>BASED ON TOTAL:</b> |  | <i>Trend for comparison</i> |
|------------------------|--|-----------------------------|
|                        |  | <b>GP</b>                   |
|                        |  | <u>May 2009</u>             |
| 71                     | More often                                   | 17                          |
| 1                      | Less Often                                   | 2                           |
| 5                      | About as often                               | 8                           |
| *                      | No answer/Don't know/Refused ( <b>VOL.</b> ) | 1                           |
| (9)                    | <i>False/Don't know in Q.71</i>              | (16)                        |
| (14)                   | <i>Heard nothing/Don't know in Q.70</i>      | (56)                        |

**ASK ALL:**

Q.73 Please indicate whether you agree or disagree with each of the following statements [**RANDOMIZE**]

|    |  | -----AGREE----- |                   |               | -----DISAGREE----- |                   |               | No            |
|----|--|-----------------|-------------------|---------------|--------------------|-------------------|---------------|---------------|
|    |  | <u>Net</u>      | <u>Completely</u> | <u>Mostly</u> | <u>Net</u>         | <u>Completely</u> | <u>Mostly</u> | <u>answer</u> |
| a. | When something is run by the government, it is usually inefficient and wasteful                              | 40              | 7                 | 33            | 58                 | 10                | 47            | 2             |
|    | <i>Trend for comparison, April 2009 (GP)</i>   | 57              | 25                | 32            | 39                 | 7                 | 32            | 4             |
| b. | Business corporations generally strike a fair balance between making profits and serving the public interest | 20              | 1                 | 19            | 77                 | 25                | 52            | 2             |
|    | <i>Trend for comparison, April 2009 (GP)</i>   | 37              | 6                 | 31            | 58                 | 19                | 39            | 5             |
| c. | It is the responsibility of the government to take care of people who can't take care of themselves          | 78              | 21                | 58            | 19                 | 4                 | 15            | 2             |
|    | <i>Trend for comparison, April 2009 (GP)</i>   | 63              | 24                | 39            | 33                 | 11                | 22            | 4             |
| d. | We have gone too far in pushing equal rights in this country   | 14              | 3                 | 11            | 83                 | 47                | 36            | 3             |
|    | <i>Trend for comparison, April 2009 (GP)</i>   | 41              | 16                | 25            | 56                 | 25                | 31            | 3             |
| e. | The best way to ensure peace is through military strength  | 33              | 5                 | 28            | 65                 | 21                | 44            | 2             |
|    | <i>Trend for comparison, April 2009 (GP)</i>   | 53              | 22                | 31            | 42                 | 15                | 27            | 5             |

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

EMPLOY Are you now employed full-time, part-time or not employed?

|    |                              |                             |
|----|------------------------------|-----------------------------|
|    |                              | <i>Trend for comparison</i> |
|    |                              | <b>GP</b>                   |
|    |                              | <u>May 2009</u>             |
| 71 | Full-time                    | 46                          |
| 10 | Part-time                    | 12                          |
| 17 | Not employed                 | 40                          |
| 1  | No answer/Don't know/Refused | <b>1</b>                    |

**ASK ALL:**

RETIRE Are you currently retired?

|    |                              |
|----|------------------------------|
| 19 | Yes                          |
| 79 | No                           |
| 1  | No answer/Don't know/Refused |

**ASK ALL:**

STUDENT Are you currently enrolled in school?

|    |                              |                             |
|----|------------------------------|-----------------------------|
|    |                              | <i>Trend for comparison</i> |
|    |                              | <b>GP</b>                   |
|    |                              | <u>May 2009</u>             |
| 14 | Yes, full time               | 8                           |
| 2  | Yes, part time               | 6                           |
| 83 | No                           | 85                          |
| 1  | No answer/Don't know/Refused | *                           |

**IF EMPLOYED FULL OR PART-TIME[N=1,990]:**

EMPORG Which of these best describes your current employer?

|    |                              |
|----|------------------------------|
| 9  | Government                   |
| 63 | University or college        |
| 15 | Business or industry         |
| 8  | Non-profit organization      |
| 5  | Other                        |
| *  | No answer/Don't know/Refused |

**ASK ALL:**

EDUC For each of the following, indicate if you currently hold this degree. Please check all that apply.

|    |  |
|----|--|
| 34 | Master's Degree                          |
| 68 | Doctor of Philosophy                     |
| 8  | Doctor of Medicine                       |
| *  | Other advanced degree(s), please specify |
| 11 | No advanced degree/No answer             |

*Figures add to more than 100% because some respondents reported having more than one advanced degree.*

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

**YRSRES** Including time spent on research in graduate school, how many years have you been involved in conducting scientific research? (If less than one year, enter 0. Please enter years in whole numbers.)

|    |                     |
|----|---------------------|
| 26 | Fewer than 10 years |
| 25 | 10 to 24 years      |
| 46 | 25 or more years    |
| 2  | No answer           |

**ASK ALL:**

**AGE**  
What is your age?

*Trend for comparison*

|    |                              | <b>GP</b>                        |
|----|------------------------------|----------------------------------|
|    |                              | <u>Jan-June 2009<sup>9</sup></u> |
| 20 | 18 to 34                     | 30                               |
| 19 | 35 to 49                     | 27                               |
| 33 | 50 to 64                     | 25                               |
| 26 | 65 or older                  | 16                               |
| 3  | No answer/Don't know/Refused | 1                                |

**ASK ALL:**

**RSEX**  
What is your gender?

*Trend for comparison*

|    |                              | <b>GP</b>            |
|----|------------------------------|----------------------|
|    |                              | <u>Jan-June 2009</u> |
| 72 | Male                         | 49                   |
| 26 | Female                       | 51                   |
| 2  | No answer/Don't know/Refused | 0                    |

**ASK ALL:**

**HISP1** Are you yourself of Hispanic or Latino origin or descent, such as Mexican, Puerto Rican, Cuban, or some other Spanish background?

**RACE1** Which of the following describes your race? You can select as many as apply.

*Trend for comparison*

|    |                                | <b>GP</b>            |
|----|--------------------------------|----------------------|
|    |                                | <u>Jan-June 2009</u> |
| 81 | White, non-Hispanic            | 69                   |
| 1  | Black, non-Hispanic            | 11                   |
| 3  | Hispanic                       | 12                   |
| 7  | Asian, non-Hispanic            | 2                    |
| 3  | Other/Mixed race, non-Hispanic | 4                    |
| 4  | No answer/Don't know/Refused   | 1                    |

<sup>9</sup> This comparison and others labeled "Jan-June 2009" draw on data from four surveys of the general public completed between January and June, 2009.

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

|        |                                     |                             |
|--------|-------------------------------------|-----------------------------|
| USBORN | Were you born in the United States? | <i>Trend for comparison</i> |
|        |                                     | Current Population Survey   |
|        |                                     | <u>March 2009</u>           |
| 81     | Yes                                 | 85                          |
| 18     | No                                  | 15                          |
| 1      | No answer/Don't know/Refused        | --                          |

**IF USBORN IS NOT 1:**

|                        |   |                             |
|------------------------|---|-----------------------------|
| CITIZEN                | Are you a citizen of the United States? | <i>Trend for comparison</i> |
|                        |   | Current Population Survey   |
|                        |   | <u>March 2009</u>           |
| <b>BASED ON TOTAL:</b> |   |                             |
| 90                     | Yes (Born in U.S. or yes to CITIZEN)    | 92                          |
| 9                      | No                                      | 8                           |
| 1                      | No answer/Don't know/Refused            | --                          |

**ASK ALL:**

RELIG What is your present religion, if any?  
 CHR **IF SOMETHING ELSE (RELIG=11) ASK:** Do you think of yourself as a Christian or not?

|    |  |                             |
|----|--|-----------------------------|
|    |  | <i>Trend for comparison</i> |
|    |  | <b>GP</b>                   |
|    |  | <u>Jan-June 2009</u>        |
|    | Protestant (for example, Baptist, Methodist,<br>Non-denominational, Lutheran, Presbyterian,<br>Pentecostal, Episcopal, Reformed, Church of Christ, etc.) | 41                          |
| 20 |  |                             |
| 10 | Roman Catholic   | 24                          |
| 1  | Mormon (Church of Jesus Christ of Latter-day Saints or LDS)  | 2                           |
| 1  | Orthodox (Greek, Russian, or some other orthodox church)   | 1                           |
| 8  | Jewish   | 1                           |
| 1  | Muslim   | 1                           |
| 1  | Buddhist   | 1                           |
| 1  | Hindu  | *                           |
| 17 | Atheist  | 2                           |
| 11 | Agnostic   | 2                           |
| 2  | Unitarian (VOL.)   | *                           |
| *  | Christian (VOL.)   | 10                          |
| 3  | Something else   | 2                           |
| 20 | Nothing in particular  | 12                          |
| 4  | No answer/Don't know/Refused (VOL.)  | 1                           |

**IF CHRISTIAN (RELIG=1-4, OR CHR=1) ASK:**

BORN Would you describe yourself as a "born again" or evangelical Christian, or not?

|                        |                                     |                             |
|------------------------|-------------------------------------|-----------------------------|
| <b>BASED ON TOTAL:</b> |                                     | <i>Trend for comparison</i> |
|                        |                                     | <b>GP</b>                   |
|                        |                                     | <u>Jan-June 2009</u>        |
| 5                      | Yes, would                          | 33                          |
| 28                     | No, would not                       | 42                          |
| *                      | No answer/Don't know/Refused (VOL.) | 4                           |
| 67                     | <i>Not a Christian in RELIG/CHR</i> | (22)                        |

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

ATTEND Aside from weddings and funerals, how often do you attend religious services:

|           |                                     | <i>Trend for comparison</i> |
|-----------|-------------------------------------|-----------------------------|
|           |                                     | <b>GP</b>                   |
|           |                                     | <u>Jan-June 2009</u>        |
| 3         | More than once a week               | 13                          |
| 14        | Once a week                         | 25                          |
| 8         | Once or twice a month               | 14                          |
| 14        | A few times a year                  | 19                          |
| 24        | Seldom                              | 16                          |
| 33        | Never                               | 11                          |
| 3         | No answer/Don't know/Refused (VOL.) | 1                           |
| <b>17</b> | <b>NET Weekly or more</b>           | <b>38</b>                   |

**ASK ALL:**

BELIEF Which of the following statements comes closest to your belief about God?

|    |   | <i>Trend for comparison</i> |
|----|---|-----------------------------|
|    |   | <b>GP</b>                   |
|    |   | <u>July 2006</u>            |
| 33 | I believe in God  | 83                          |
| 18 | I don't believe in God, but I do believe<br>in a universal spirit or higher power | 12                          |
| 41 | I don't believe in either   | 4                           |
| 7  | No answer/Don't know/Refused (VOL.)   | 1                           |

**ASK ALL:**

FINSIT How would you describe your household's financial situation? Would you say...

|    |   | <i>Trend for comparison</i> |
|----|---|-----------------------------|
|    |   | <b>GP</b>                   |
|    |   | <u>March 2008</u>           |
| 60 | Live comfortably  | 39                          |
| 28 | Meet your basic expenses with a little left over for extras | 31                          |
| 8  | Just meet your basic expenses                               | 21                          |
| 1  | Don't even have enough to meet basic expenses               | 7                           |
| 2  | No answer/Don't know/Refused (VOL.)                         | 2                           |

**ASK IF CITIZEN (CITIZEN=1) OR BORN IN THE US (USBORN=1):**

R/R These days, many people are so busy they can't find time to register to vote, or move around so often they don't get a chance to re-register. Are you now absolutely certain you are registered to vote in your precinct or election district, is there a chance your registration has lapsed, or are you not registered to vote?

**BASED ON TOTAL:**

|    |   | <i>Trend for comparison</i> |
|----|---|-----------------------------|
|    |   | <b>GP</b>                   |
|    |   | <u>Jan-June 2009</u>        |
| 86 | Yes, I am certain that I am registered<br>in my precinct or election district | 78                          |
| 1  | Chance registration has lapsed  | 2                           |
| 12 | No, I am not registered*  | 19                          |
| 1  | No answer/Don't know/Refused (VOL.)   | 1                           |

\* Includes non-citizens and those whose citizenship status is unknown, who make up 9% of the sample.

**EMBARGOED FOR 12 NOON EDT JULY 9, 2009**

**ASK ALL:**

PARTY In politics today, do you consider yourself a Republican, Democrat, or Independent?

**IF ANSWERED 3, 4 OR GAVE NO ANSWER TO PARTY, ASK:**

PARTYLN

|                             | <u>Republican</u> | <u>Democrat</u> | <u>Independent</u> | <u>No Preference</u> | <u>Other Party</u> | <u>No Answer/DK/Ref</u> | <i>Lean Rep</i> | <i>Lean Dem</i> |
|-----------------------------|-------------------|-----------------|--------------------|----------------------|--------------------|-------------------------|-----------------|-----------------|
| May 2009                    | 6                 | 55              | 32                 | --                   | 4                  | 3                       | 6               | 25              |
| <i>Trend for comparison</i> |                   |                 |                    |                      |                    |                         |                 |                 |
| Jan-June 2009 (GP)          | 23                | 35              | 34                 | 3                    | *                  | 3                       | 12              | 17              |

**ASK ALL:**

IDEO In general, would you describe your political views as...

|                                       | <i>Trend for comparison</i> |
|---------------------------------------|-----------------------------|
|                                       | <b>GP</b>                   |
|                                       | <u>Jan-June 2009</u>        |
| 1 Very conservative                   | 7                           |
| 8 Conservative                        | 30                          |
| 35 Moderate                           | 38                          |
| 38 Liberal                            | 14                          |
| 14 Very liberal                       | 5                           |
| 3 No answer/Don't know/Refused (VOL.) | 5                           |