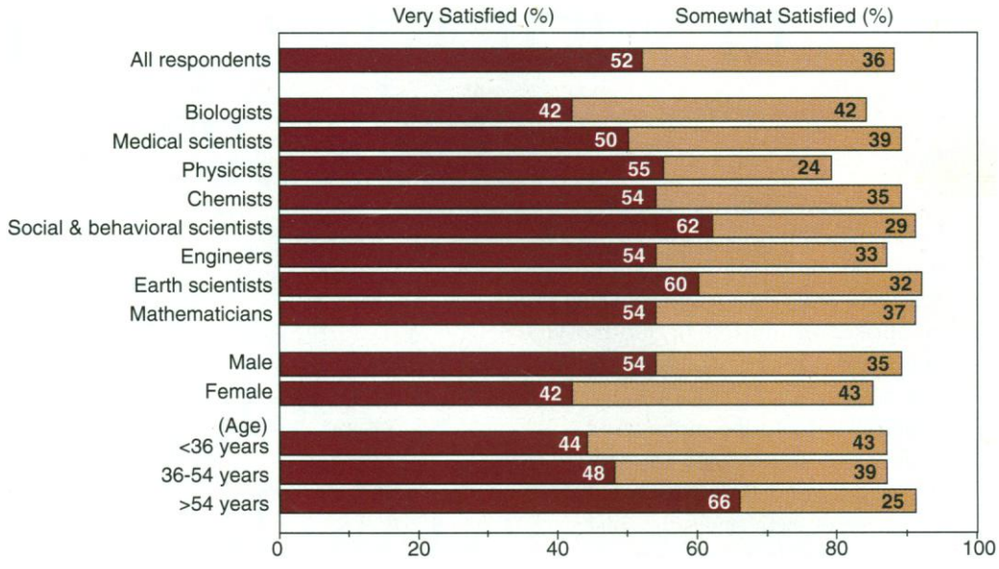
How Scientists View Their Profession

A recent AAAS survey suggests that most scientists are satisfied with their career choices. But it also hints at concerns about the state of academia and the future of funding in certain disciplines.

1. Still happy after all these years? Funding is down, jobs are scarce, universities are deteriorating: Scientists have scads of reasons to complain. And yet the huge preponderance of respondents to AAAS's May member opinion poll express satisfaction with their careers. Nevertheless, there are intriguing, statistically significant differences between subgroups of the respondents. Note, for example, that biologists and women were significantly less likely to express great satisfaction than all other groups, while social, behavioral, and earth scientists were more likely to express great satisfaction. And how about those very satisfied older folks! (Statistical significance between responses begins at about 8%.)

Lots of Satisfaction, but Notable Variations Among Subgroups



2. Different strokes for different folks. A profile of the different disciplines emerges from each group's answers to four core questions. Note that once again there are statistically significant (i.e., > 8%-12%) variations among the disciplines. Also, not all response choices are shown.

		% Biologists	% Medical scientists	% Physicists/ Astronomers	% Chemists	% Social/Behavioral Scientists	% Engineers	% Earth Scientists	% Math/Computer Scientists
"Optimists"	Were "very satisfied" with their jobs.	42	50	55	54	62	54	60	54
	Expect their discipline's funding to rise over next 5 years.	35	29	19	30	19	34	31	46
	Expect to remain in their subspecialty over next 5 years.	36	51	33	31	39	37	32	36
	Expect to remain with employer over next 5 years.	23	30	31	25	30	28	30	25
"Pessimists"	Were somewhat or very dissatisfied with their job.	15	11	20	11	9	13	8	10
	Expect their discipline's funding to drop over next 5 years.	21	23	36	22	34	25	27	18
	Expect to change their subspecialty over next 5 years.	15	7	5	14	6	10	11	17
	Expect to change employer over next 5 years.	26	21	16	19	16	16	13	21

This is a classic good news/bad news story about science, the profession, in 1992. In a member opinion poll conducted by the AAAS last May,* nearly nine of every 10 respondents (Fig. 1.) expressed satisfaction with their careers. That's the good news.

The bad news is that there's a malaise afoot in the world of science, and this may be reflected in specific responses to the AAAS questionnaire. The biggest single bit of news of this survey may be the following comparison: Seventy percent of the respondents now working in industry and 60% of those employed in hospitals or medical schools are willing to recommend careers in their choice of employment sector, but only 41% of those in universities and 18% of those in government would recommend careers in academia and government, respectively (Fig. 4).

Other notable differences in response include the following points (Fig. 2):

- Significantly greater percentages of physicists/astronomers and social/behavioral scientists expect funding to decline in their disciplines.
- Greater percentages of biologists, chemists, and mathematicians/computer scientists expect to change their specialties within 5 years.
- Significantly higher percentages of biologists expect to change employers in that time frame.

You will find other interesting patterns in the figures on these two pages. Please realize that space constraints have kept us from providing all responses to the questions discussed. For a detailed analysis of the responses to all questions, write Member Research Manager Kathy Markey, AAAS, 1333 H St., NW, Washington, D.C. 20005. A full report can be obtained at the price of $5 for members, $10 for nonmembers.

– Ellis Rubinstein

* The AAAS Careers Survey was mailed to 2500 randomly selected members the week of 24 May. To ensure adequate response for analysis across discipline category, the sample design allowed for oversampling members in the less well represented discipline categories of AAAS. Based on 1368 responses received by July 17 (a 55% response), sampling error is approximately +/-3% at the 95% level. Approximate sampling tolerance for differences between subgroups (i.e., discipline or employer) varies, based on subgroup response, and can be as large as +/-8% to 12%. The data in the final report will be weighted to adjust for the unequal probability of selection due to oversampling and to reflect the true distribution of membership across discipline.

3. Hot pursuits. Asked what scientific specialty holds the greatest promise over the next decade, respondants favored certain fields—and not always their own! The fields listed below are ranked based on most mentions of specialties by respondents in that discipline.

Biologists	Medical Scientists	Physicists/ Astronomers	Social/Behavioral Scientists	Chemists	Engineers	Earth Scientists	Math/Computer Scientists
1. Genetics	1. Molecular & cell biology	1. Genetics	1. Genetics	1. Genetics	1. Computers, information sciences & artificial intelligence	1. Environmental sciences	1. Computers, information sciences & artificial intelligence
2. Molecular & cell biology	2. Genetics	2. Physics	2. Molecular & cell biology	1. Molecular & cell biology	2. Genetics	2. Genetics	2. Biotechnology
3. Biotechnology	3. Medical research & immunology	3. Molecular & cell biology	3. Social/ behavioral science & psychology	2. Biotechnology	3. Materials science	3. Hydrogeology	
4. Medical research & immunology	4. Neuroscience	4. Astronomy	4. Computers, information sciences & artificial intelligence	* Environmental sciences	4. Molecular & cell biology		
5. Environmental sciences		* Materials science	* Environmental sciences	* Materials science	5. Biotechnology		
			* Neuroscience		* Environmental sciences		

* Asterisk indicates a tie.

4. Crystal-ball gazing. Having recommended a specialty (see Fig. 3), the respondents were asked where they would advise a scientist intent on pursuing that field to work. Once again there are statistically significant (i.e., about 8%) variations in the responses of the different disciplines and of those currently employed in one of four employment sectors—government, medical schools or hospitals, industry, or universities.

Recommended Employment Sectors	The Advisers In: Government %	In Academia %	Hospitals/Med. Schools %	Industry %	Biology* %	Medicine %	Physics/ Astronomy %	Chemistry %	Social or Behavioral Sciences %	Engineering %	Earth Sciences %	Math %
Government	19	4	4	3	6	6	9	6	7	7	12	6
University/ College	23	44	9	14	31	14	39	21	49	14	25	27
Hospital/ Medical School	12	9	60	7	20	46	5	5	8	3	4	5
Industry	27	34	21	72	34	29	32	58	21	59	27	53

*Also includes agriculture and environmental sciences