

THE 2005
DPS MEMBER SURVEY



Division for Planetary Sciences
of the
American Astronomical Society

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THE 2005 DPS MEMBER SURVEY

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EXECUTIVE SUMMARY

The 2005 DPS Membership Survey was commissioned by the DPS Committee to identify member concerns and to learn how our Division has changed since the previous survey taken in 1995. This was a web-based survey, to which there was a total of 424 respondents out of a total membership of 1350, for a 31.4% response rate.

In 2005, the DPS continues to be a vibrant organization with a significant number of non-U.S. members and a healthy influx of young scientists. Gender parity is being achieved with an increasing fraction of the membership being women at younger ages, i.e., about 40% of the respondents are women in the 21-30 age group. Career satisfaction is generally high, and over 90% are very comfortable or comfortable with their choice of planetary science. However, considerable caution is expressed about encouraging students to enter planetary science where employment prospects and educational prospects are judged to be only fair.

Our community has major concerns. Over 30% of our respondents are self-funded and another 54% is dependent upon soft money, most of which comes from NASA, for part of their salary. The instability of the Research and Analysis program, and the inefficiencies of grant administration, rank as the most important concerns of our community. Members would like to see the DPS leadership play an active role in addressing these problems with NASA and the Congress, and to expand its role in communicating the value of planetary science to the public.

DPS 2005 MEMBERSHIP SURVEY

1. INTRODUCTION

The 2005 DPS Membership Survey was commissioned by the DPS Committee to provide an update on the characteristics of the DPS membership. The previous survey was done in 1995, so a decadal update would provide vital information on how our field has changed and what are the issues of concern to our membership. Such data is vital to the Committee as they represent our community to NASA, Congress, the media and the general public which supports the field of planetary science.

2. SURVEY METHODOLOGY

The 2005 DPS survey (see Appendix A) is based on an expanded version of the previous 1995 survey with the following goals:

To identify the personal demographics (age, gender, professional level, work load distribution, etc.) of the DPS membership and how they have changed relative to the last survey.

To determine the distribution of membership employment (Govt. Agencies, Observatories, Universities, etc.) and sources of funding (NSF, NASA, Private, Foreign, etc.).

To examine the structure of research groups in planetary science, including sizes of groups, the institutional distribution of groups, the number of grants required to maintain groups, and the grants being written each year.

To gauge the level of satisfaction with the current NASA funding distribution and proposal notification policies.

To obtain membership feedback on the performance and role of the DPS in sponsoring meetings, providing professional development resources, promoting education, advocating for increased funding for planetary science, and advocating a science program consistent with the decadal priorities of the community.

The content of the survey is targeted primarily toward the US membership of the DPS and, as such, did not address the demographic issues of how planetary science is organized or funded in other countries. The questions were phrased such that multiple options were available and ranged from those that had hard choices (e.g., male vs. female) to subjective (e.g., excellent, good, neutral, poor, dismal). The subjective questions formed the center of an important element of survey, which was to determine the intangible factors describing the membership, including overall morale, career stress, sense of direction, optimism for the future, etc. The hard choices were aimed at understanding the specific breakdown of membership, including average age, average workplace, gender, grant writing, position breakdown (professor, research scientist, post-doc, student), etc.

To the extent possible, the questions in this survey mirror those of the previous one. The intent was to obtain some continuity and thereby track trends over the past 10 years. In several cases related to more recent developments, such as the mercurial nature of NASA award notices and funding delivery, new questions were developed that cannot be compared with the previous results. Finally, we included write-in sections to solicit specific feedback as to what emphasis the community believes the DPS should place in certain areas and what the highest priorities should be over the coming decade.

3. THE 2005 SURVEY

There were 424 respondents to the 2005 Survey out of a total DPS membership of about 1300, for a 33% response rate. In 1995, there were 680 respondents out of 831 DPS members with U.S. addresses, for a response rate of 82%. Of the 424 responses, 354 were from scientists living in the U.S., and 70 from outside the U.S. Thus, despite the relative ease of responding to a web-based survey compared to the paper survey of a decade ago, the overall participation by DPS members declined significantly. The analysis in this report is based on the received responses, but one must be cautious in extrapolating to the full membership.

The Survey was organized by the following sections: Demographics, Education, Employment, Grants/Student/Training Support, Student/Post-doc Support, Time Allocation, Perceptions of our Field, and DPS Role and Responsibilities. Several questions provided the option for detailed input from the respondent. These responses are included in the Appendix B and are referenced in the analysis of the individual questions. For example:

Section I. Demographics (Q1-12)

Demographics Summary: These questions (1-12) were designed to determine the makeup of the DPS membership, where we work, and how we view the prospects for our field. Demographically the DPS has remained unchanged over the past decade in its age distribution, while expanding significantly in gender to near parity among members less than 40 years old. We now overwhelmingly now see ourselves as planetary scientists rather than as astronomers. Our work is done primarily in a University setting, with smaller percentages in NASA/govt. labs. In 2005 as many DPS members worked at private non-profit institutes as worked at NASA centers. We are also generally pleased with our chosen field and believe that employment opportunities are as good or better than they were in 1995 (with about 1/3 disagreement).

Interestingly, despite the perception that our field is “graying,” the age distribution of the DPS has barely changed since 1995:

Demographics							
	Age					Gender	
	< 30	31-40	41-50	51-60	60 >	% Male	% Female
1995	11	26	25	24	13	86.1	13.9
2005	13	27	25	21	14	76.5	23.5

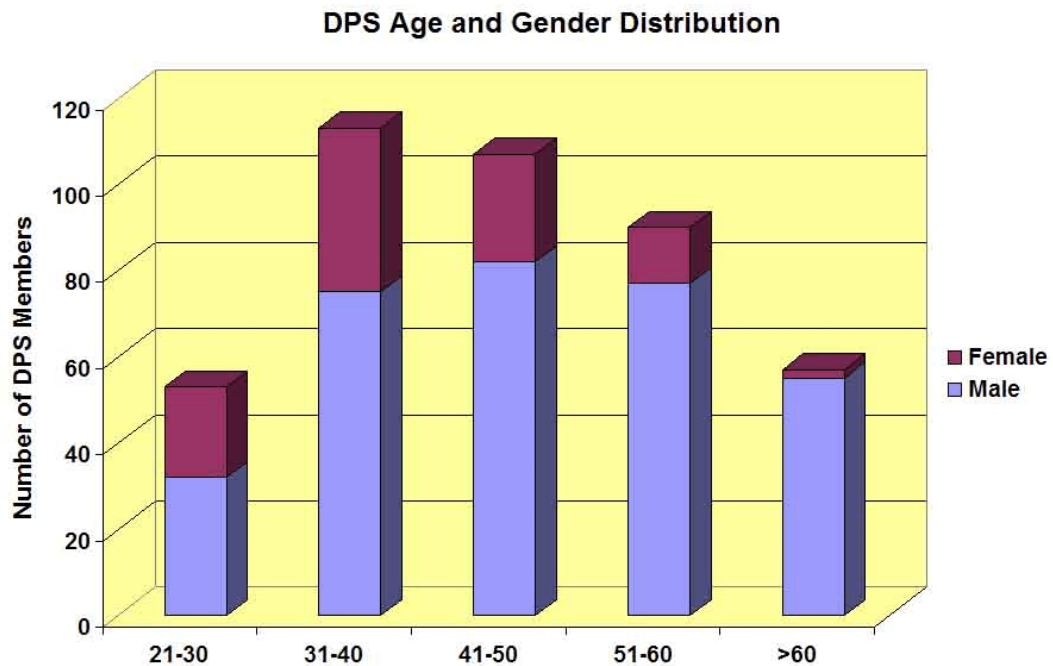


Figure 1. 2005 Age and Gender Distribution for DPS Survey Respondents

However, that there are now more women in our field is supported by the data.

Q3. Citizenship	
U.S. living in U.S.	319
Residing outside U.S.	9
Non-U.S.	35
Residing outside U.S.	58

Q4. Figure 2 shows the distribution of scientific disciplines that we consider ourselves to be, while Figure 3 shows the type of work that we do.

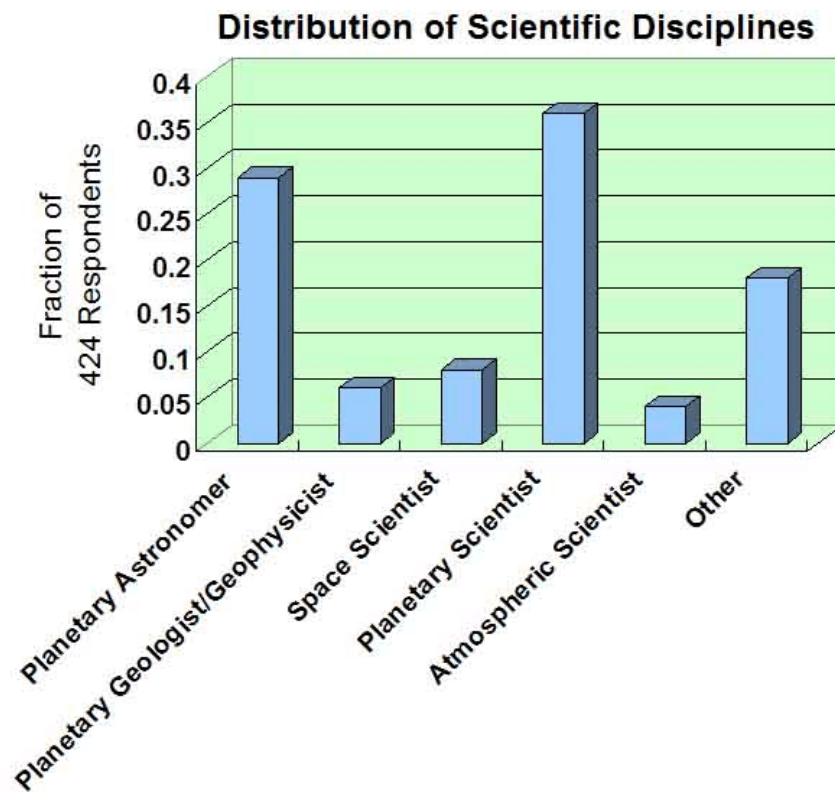


Figure 2. Scientific Disciplines Represented in the DPS

Q5:

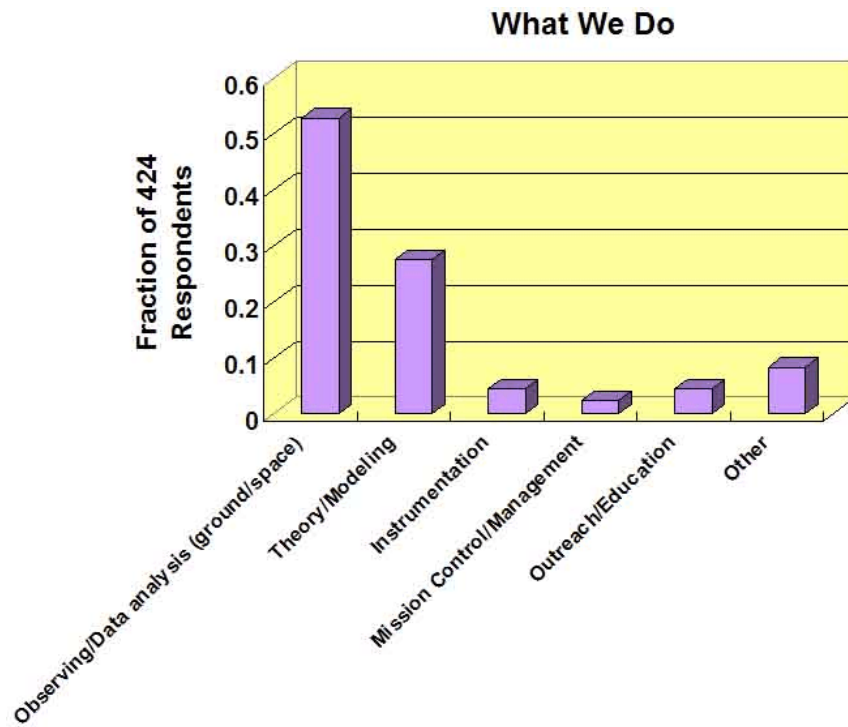


Figure 3. The type of work that we do

6. The professional societies to which we belong are shown in Fig 4. We tend to belong to multiple professional societies.

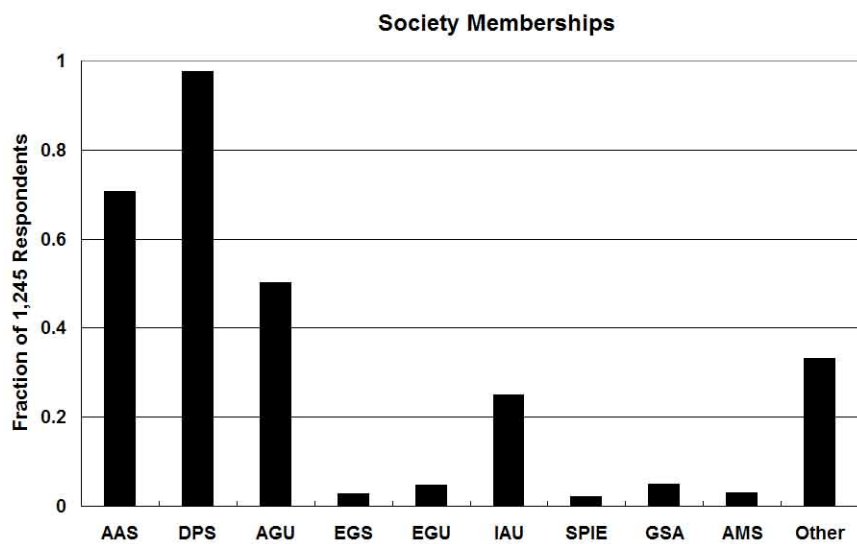


Figure 4. Distribution of professional society memberships

Q7. Time since our most advanced degree is shown in Figure 5 which further illustrates the aging of our field.

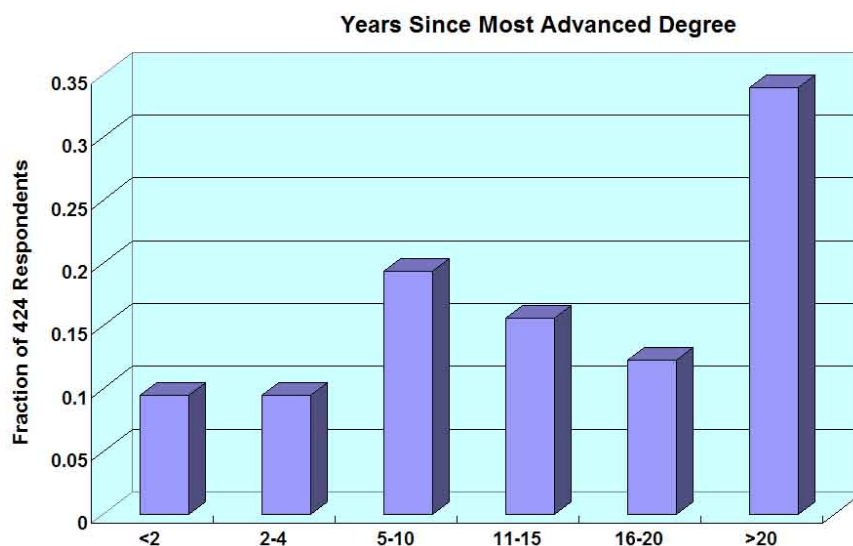


Figure 5

Q8. The field in which we were trained is shown in Figure 6.

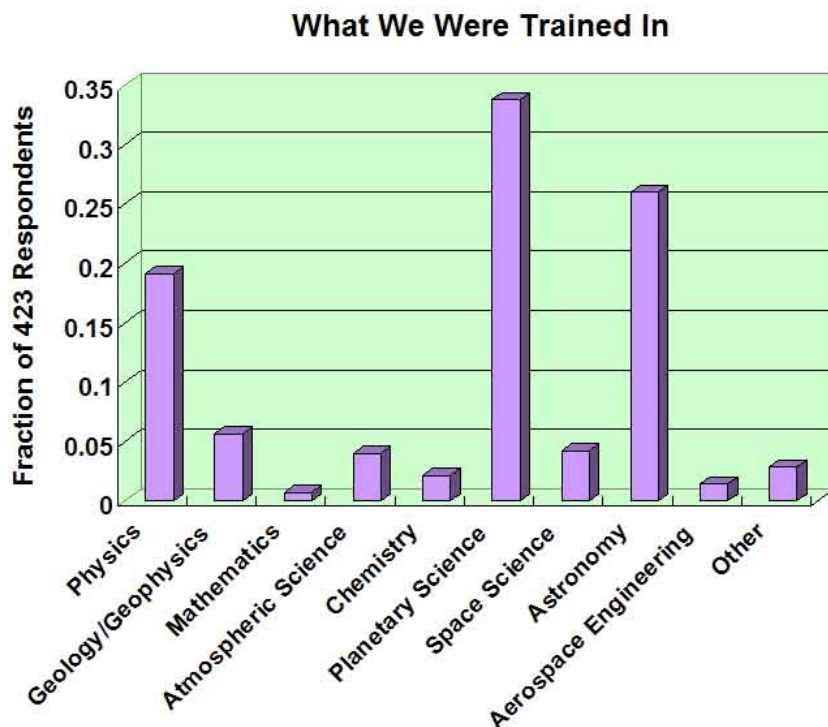


Figure 6

Q9. Figure 7 shows the distribution of employer types for the 422 respondents.

Employment: % of Respondents					
	University	NASA	Gov't Lab/ Nat'l Observatory	Non-Profit/ For Profit	Other
1995	47	28	4	14	7
2005	53	16	11	15	5

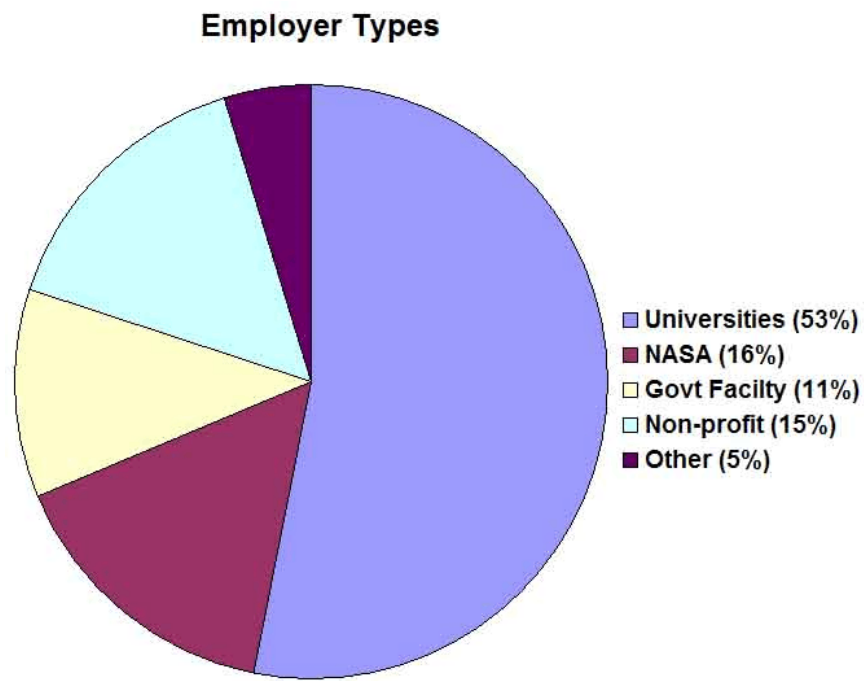


Figure 7

Q10. How much time do we spend each day in our subject area and how satisfied are we with this allocation? Figures 8 and 9 show that, despite complaints about how much time is spent dealing with non-scientific issues, a significant fraction of us spend most of our time on subject matter, and we have a pretty high degree of satisfaction with this allocation.



Figure 8

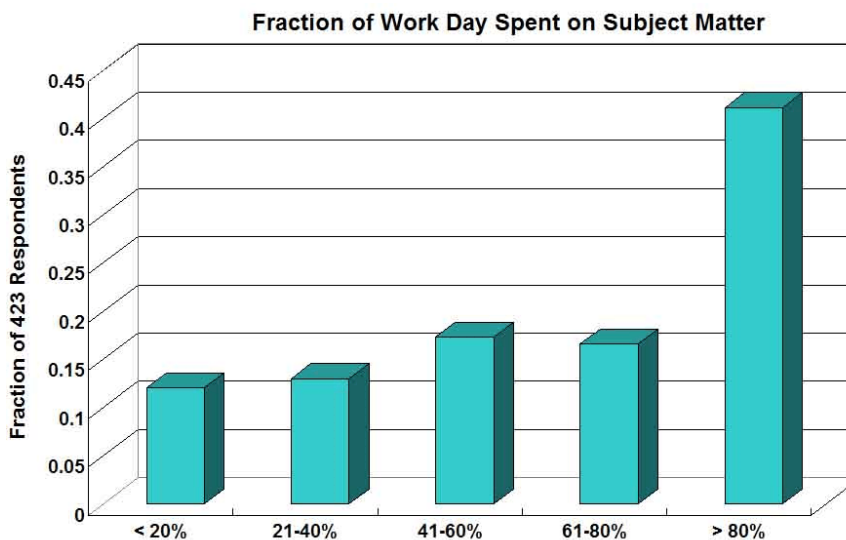


Figure 9

Q12. Interestingly, the perception of employment opportunities for planetary research, on average, has not changed since we entered the field.

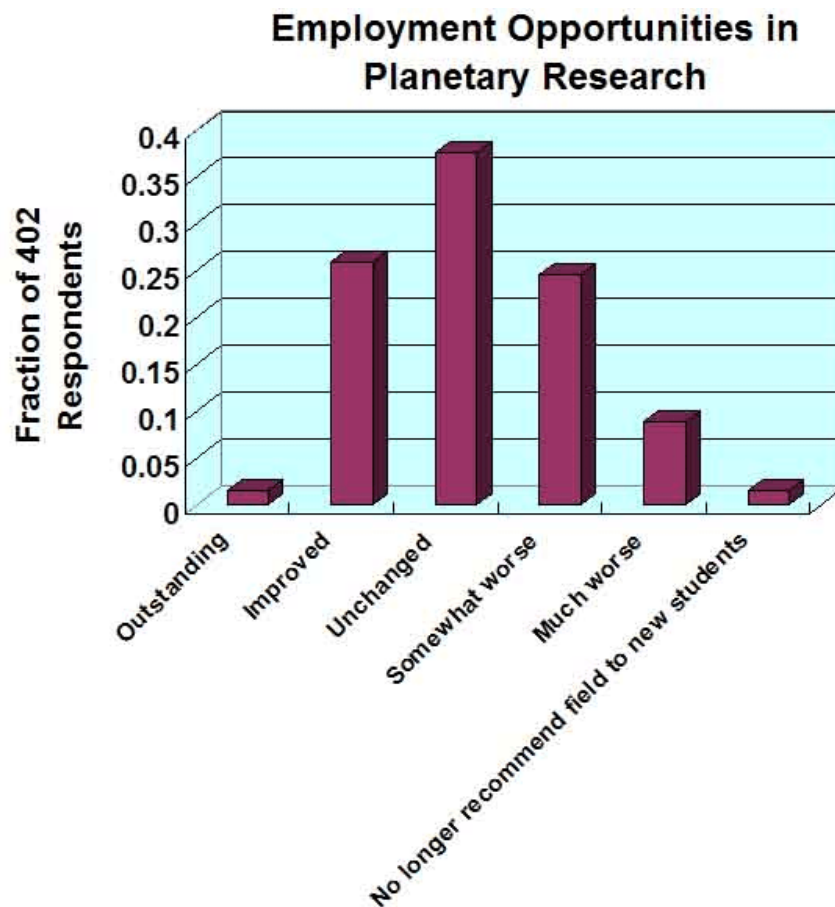


Figure 10

Section II. Education (Q13-17)

Responses to questions in this section show that, as a field, we are slightly more educated than we were a decade ago. Student employment goals and expectations regarding the time to finish degrees are essentially unchanged, while it appears that there may be fewer Ph.D. students in the pipeline; somewhat hard to believe.

Q13. The table compares the distribution of degrees in our field in 2005 with that of a decade ago.

Highest Degree			
	Ph.D.	Masters	Bachelors
1995	79.7	12.5	6.8
2005	85.6	8.6	4.8

Q14-17. The following four questions were only answered by those still seeking a degree. Thirty-seven respondents are working toward a Ph.D. in 2005 and none toward a lesser degree. Of these, 30 (81%) expect to complete their degree within 3 years. There were 71 individuals working toward a Ph.D. in 1995, 62 (87%) of who expected to finish within 3 years. So, either there are fewer Ph.D.'s in the pipeline than there was 10 years ago or they are not joining the DPS or responding to our survey. Of the students who responded in 2005, 81% wish to do either full time research or be university teaching faculty upon completing their degree. For comparison, in 1995, 79% had these employment goals. The following table compares where people would like to work today compared with a decade ago.

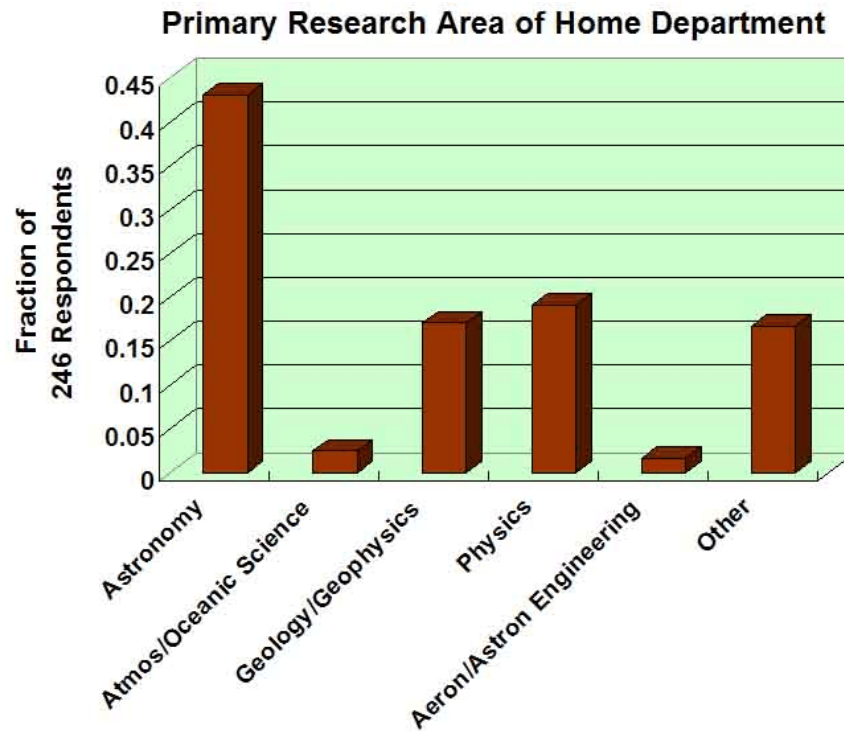
Employment Goals: 2005 vs. 1995				
	Research in Planetary Science	Faculty	Research/Teaching in Related Field	Other (computers, writing, E/PO, etc.)
1995	34	26	18	21
2005	46	48	2	4

Section III. Employment (Q18-35)

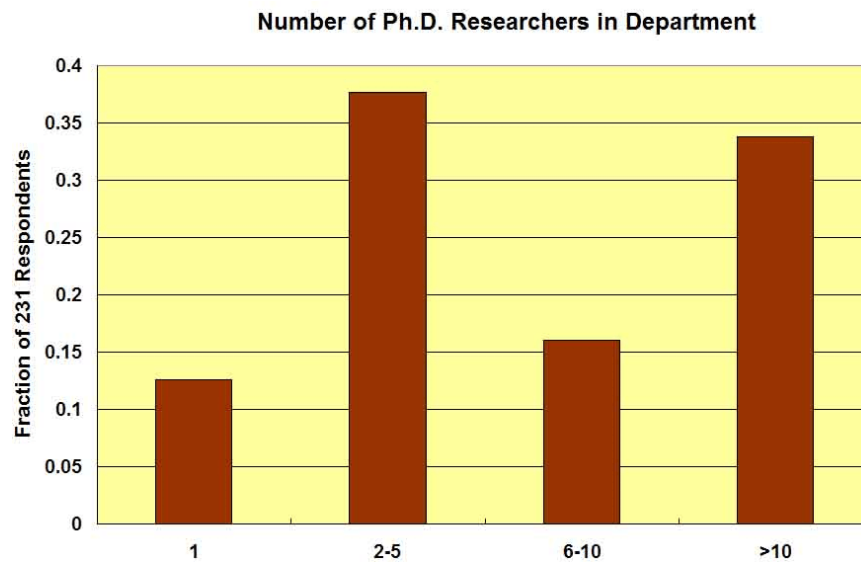
This series of questions dealt with the nature of our employers and the types of positions that we hold. The following 10 questions (Q 18-27) are for university employees, while Q28/29 were for Federal employees, Q30 was for profit/non-profit employees, and Q31 addresses who is our ultimate employer. Q 32-33 explores the immediate group with which we work and Q34-35 are on the role of planetary science at our institution.

Sixty-nine percent of the respondents are in “secure” positions (tenured, tenure-track or civil servants), up considerably from that of a decade ago when less than 50% of the respondents had “secure” positions.

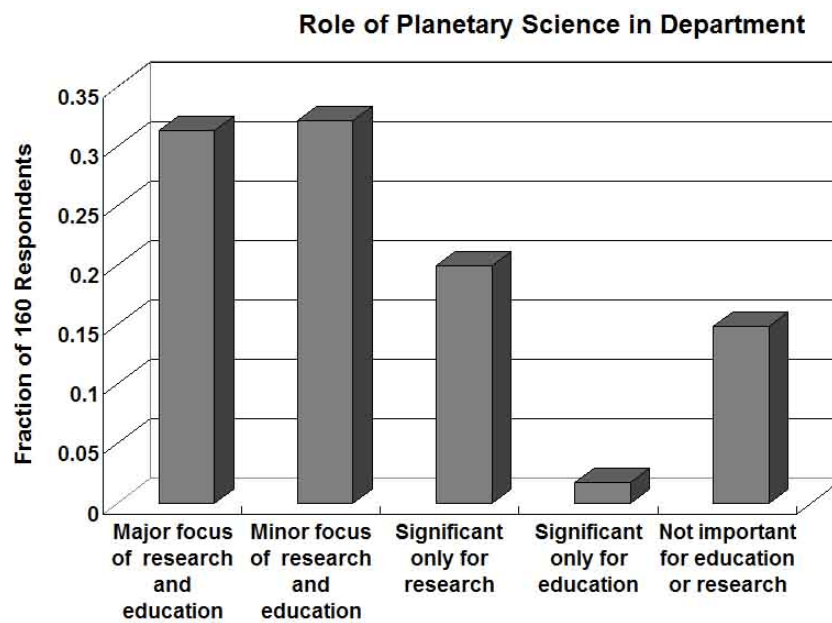
Q18



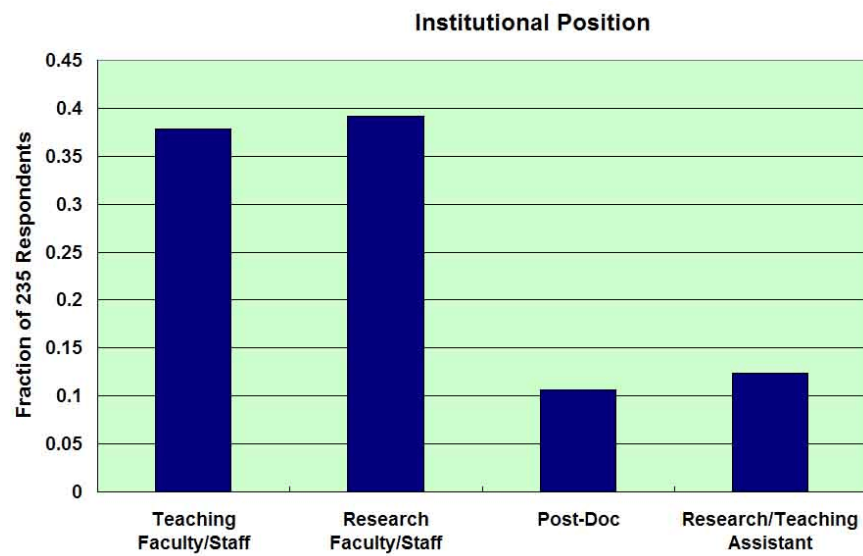
Q20



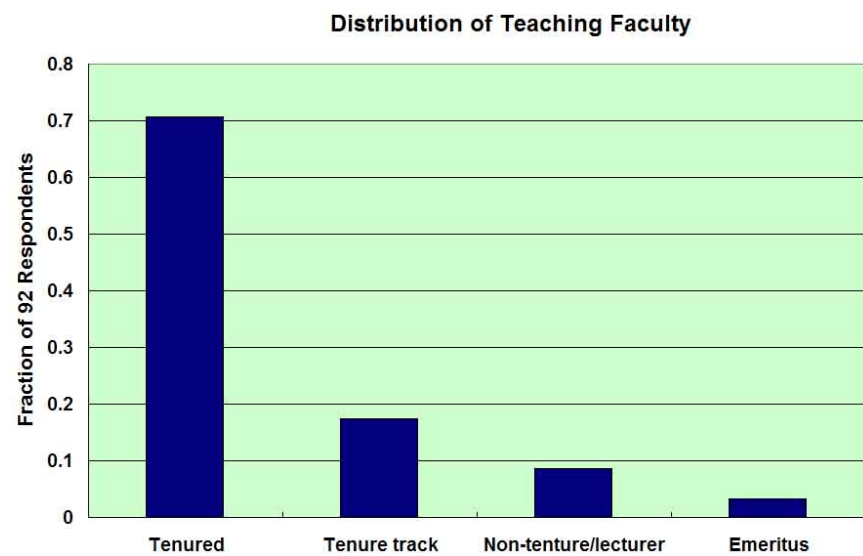
Q21



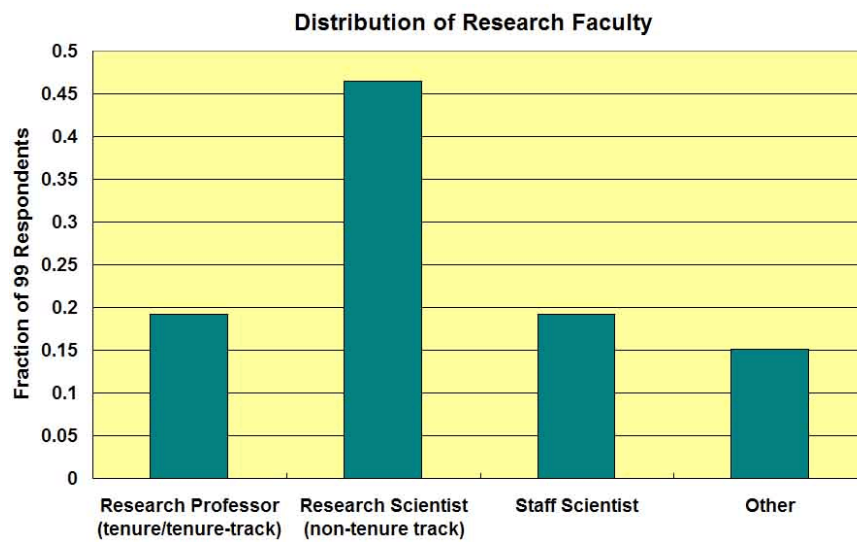
Q22



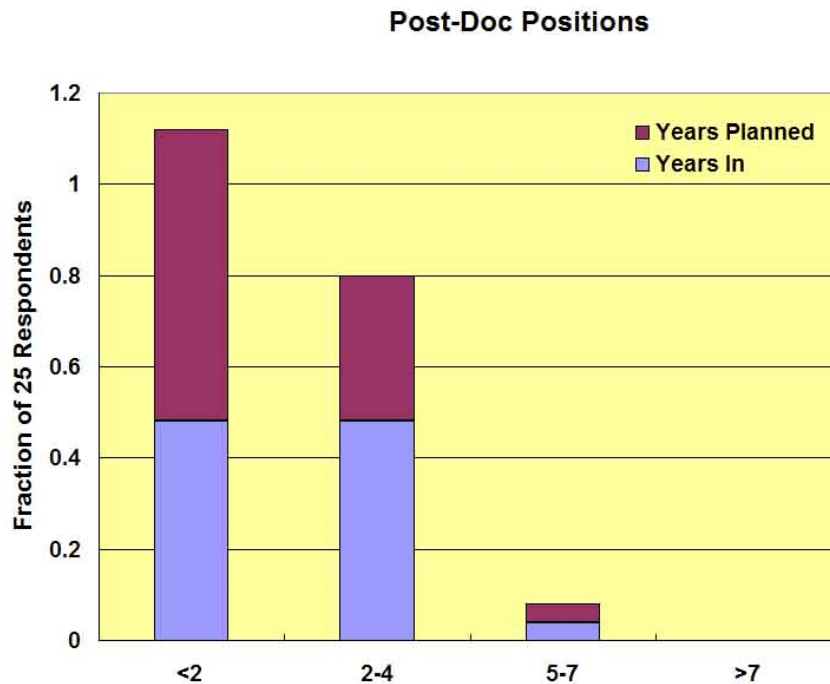
Q23



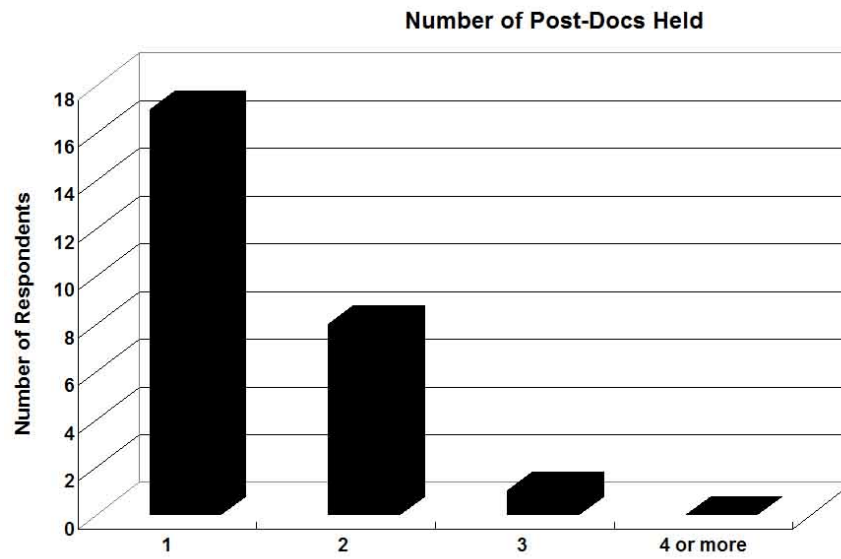
Q24



Q25/26. For those now in post-doc positions, the following chart shows the distribution of how long they have been in this position and how long they anticipate remaining a post-doc.

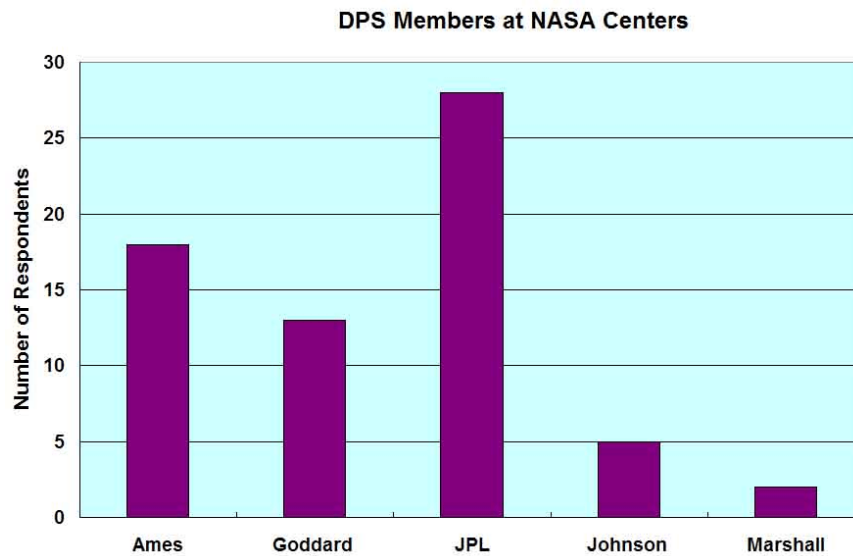


Q27

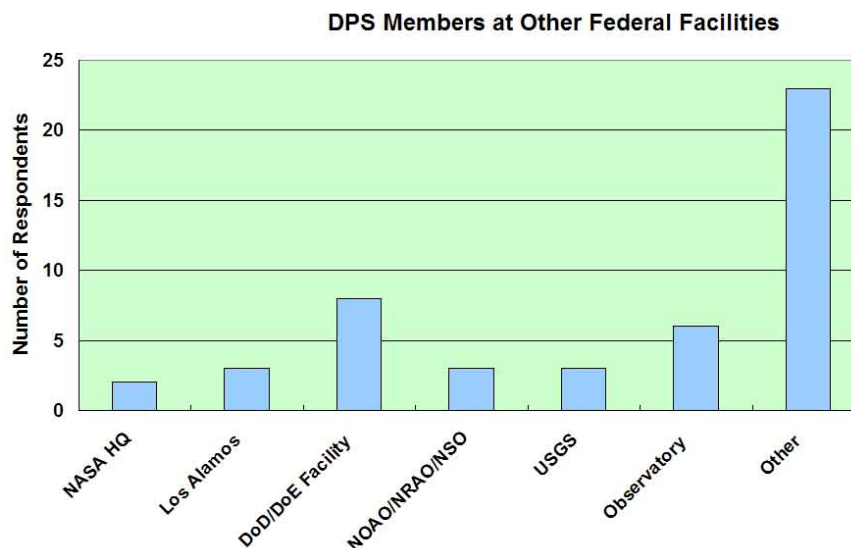


This question is for DPS members working at NASA Centers. The Centers not shown (Dryden, Glenn, Kennedy, Langley and Stennis) did not have any DPS respondents.

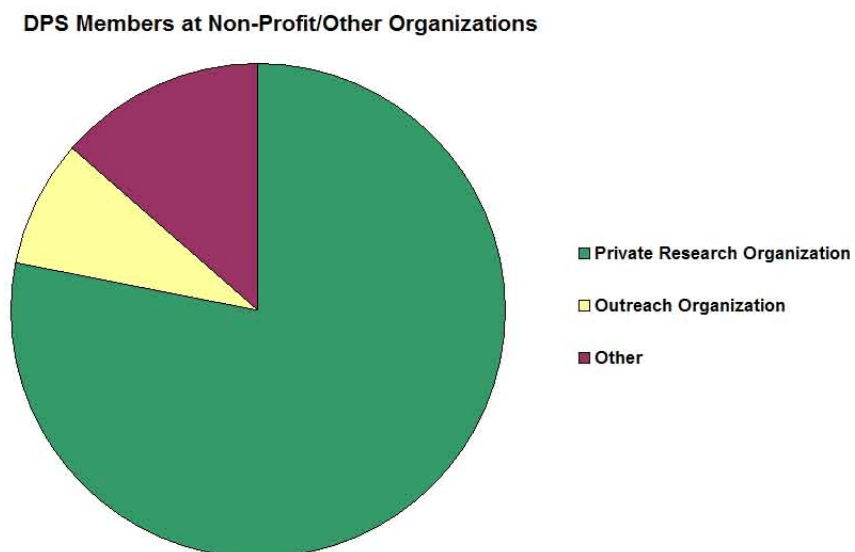
Q28



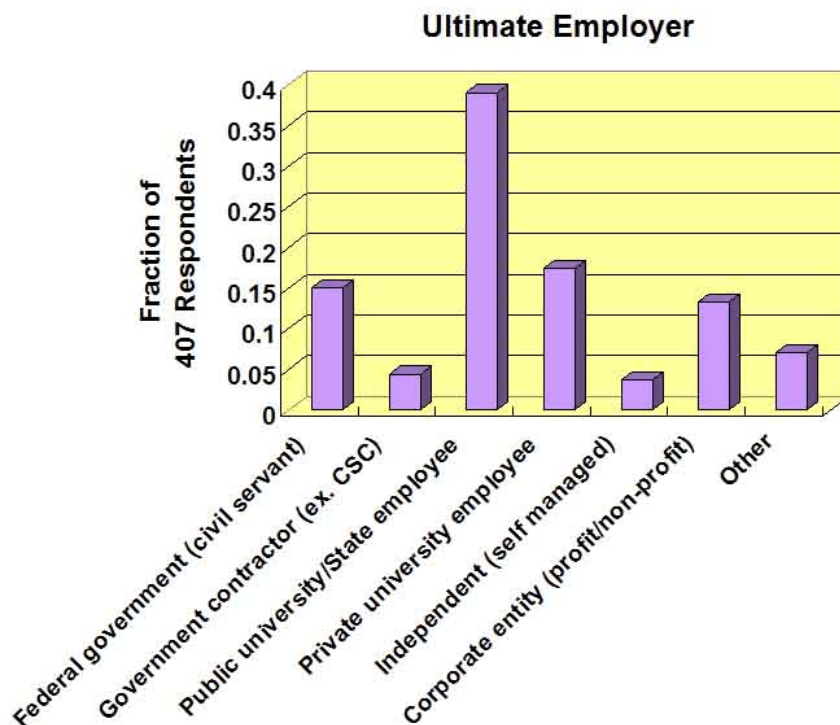
Q29. This figure shows the DPS members at other federal facilities.



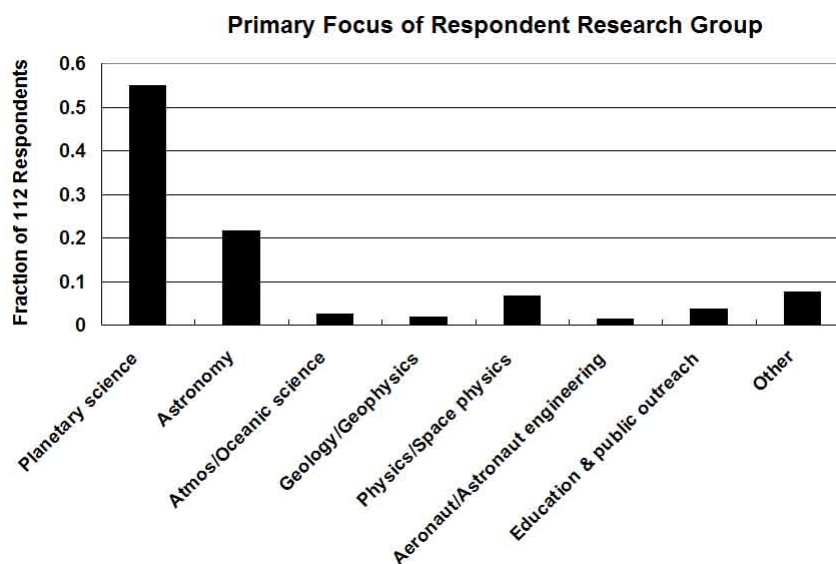
DPS members at non-profit organizations (SWRI, PSI, SETI, etc.), outreach organizations (Air and Space Museum, Adler, etc.) and other organizations such as Aerospace Corporation, APL, ESA, Technical Services Corporation, Lockheed-Martin.

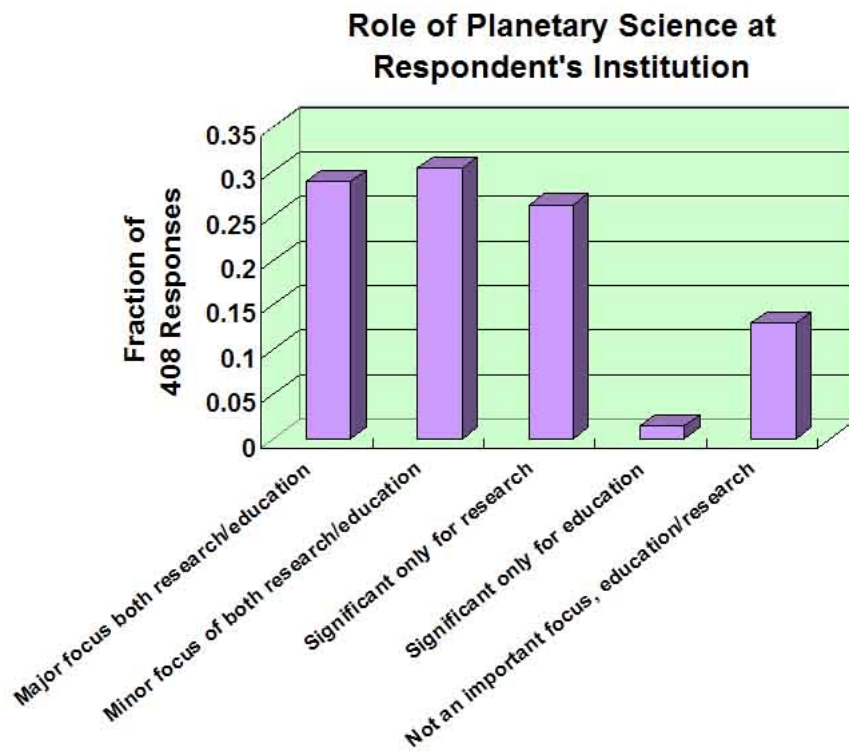
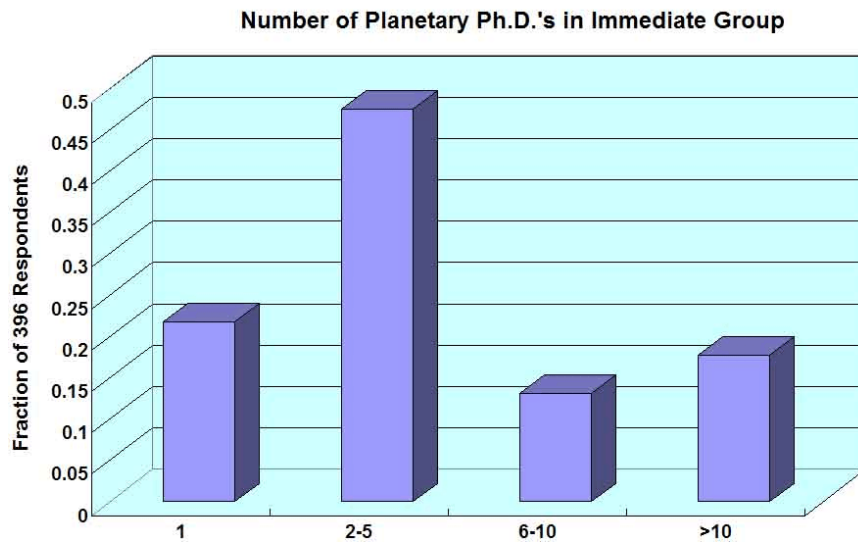


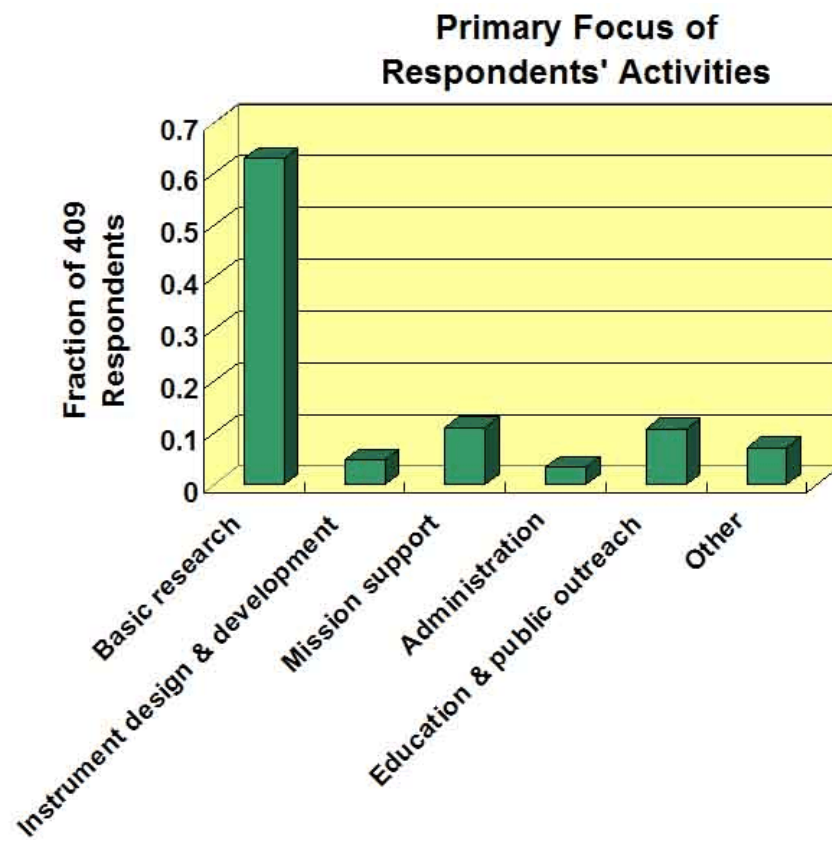
The following figure shows who is our ultimate employer, regardless of where we work.



The following four figures provides details about our immediate colleagues and institution.





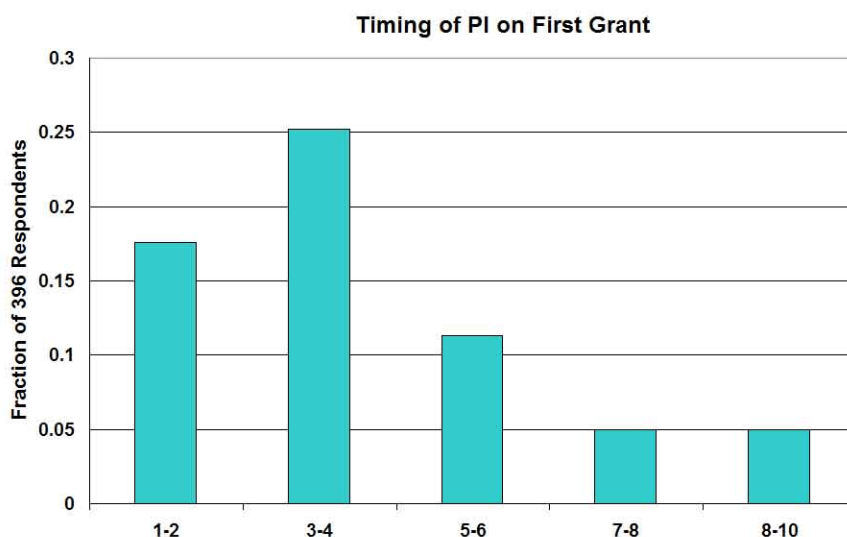


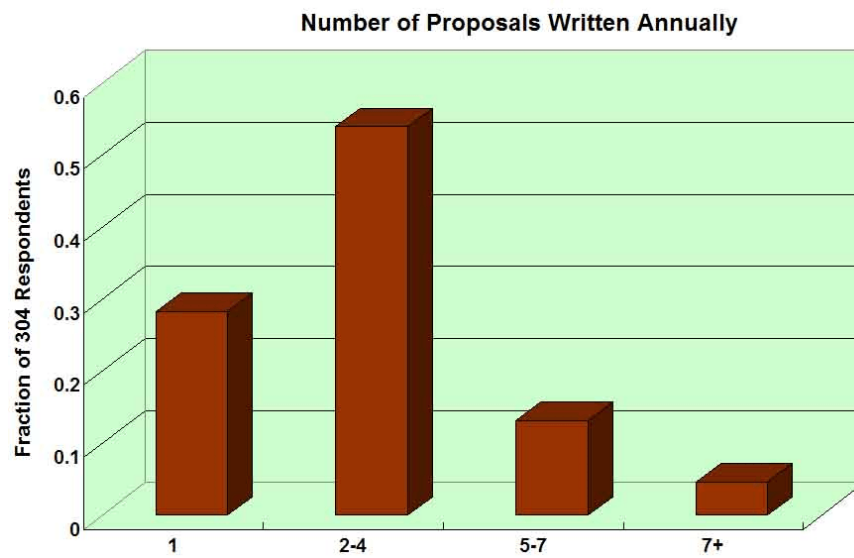
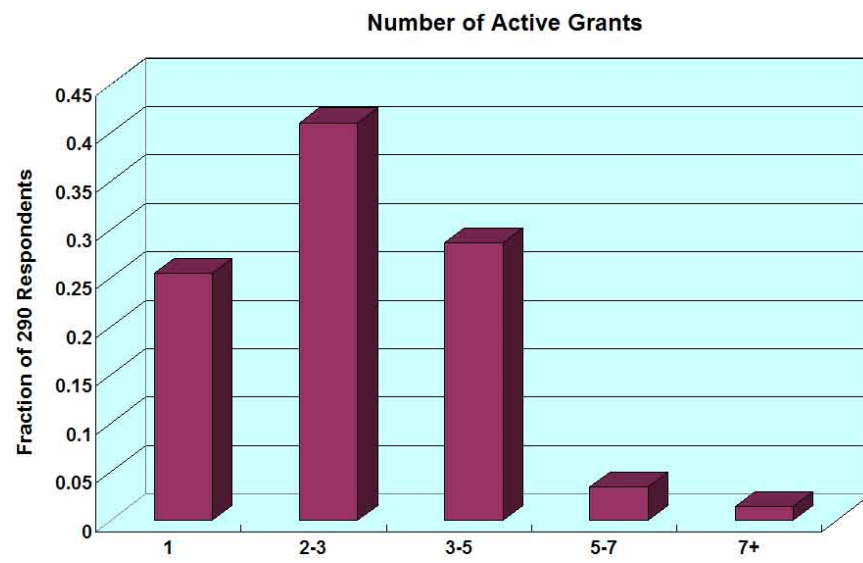
Section IV. Proposals, Funding and Peer Review (Q36-47)

In this section we search for insight about how proposals, proposals writing/reviewing, and the grants process play a role in the careers of DPS members. More than 70% of the respondents have been PI on at least one grant, with the typical new scientist achieving this goal in 4 years or less from their graduation. The average research group requires multiple active grants to sustain it's self, which requires writing of 2-4 proposals each year (20% write more than 5). NASA continues to be our most important source of funding. There were VERY strong feelings about how this process is managed at NASA. 85% of respondents regarded the times between submission and notification and between award and delivery of funds as a serious to severe difficulty they must overcome. Delays in this area have resulted in unnecessary layoffs, reductions in effort, and reliance on institutional 'float' accounts. In addition to addressing these issues, the respondents expressed concern about the overlapping of due dates for related programs and the lack of early notification for non-competitive proposals.

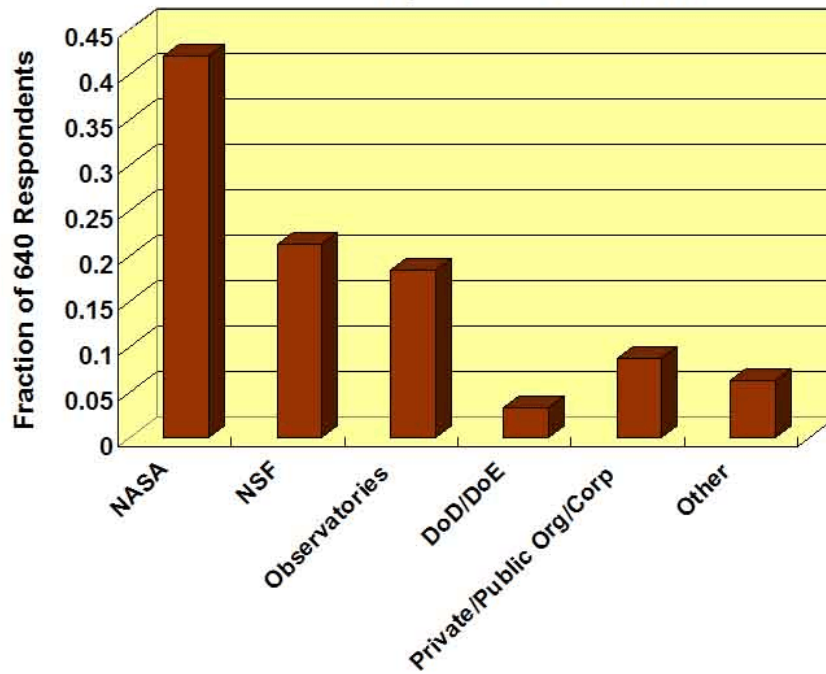
These 12 questions addressed the details of grants for our community. Our community depends heavily on research grants and invests considerable effort in writing proposals for funding (as we all know!).

A very strong outcome of this survey is that the planetary science community would like to see significant improvements made to the granting process, specifically, more timely notification of success or failure of proposals and more timely delivery of research funds to avoid disruption of research programs already underway or planned.

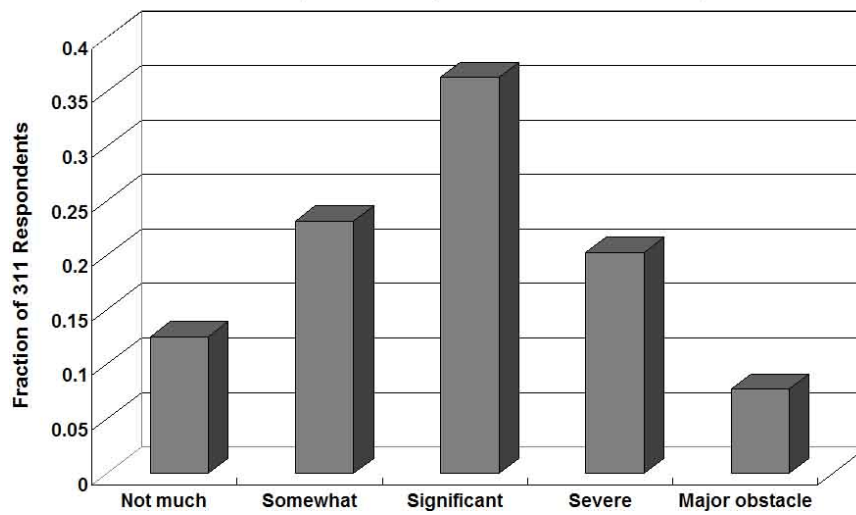




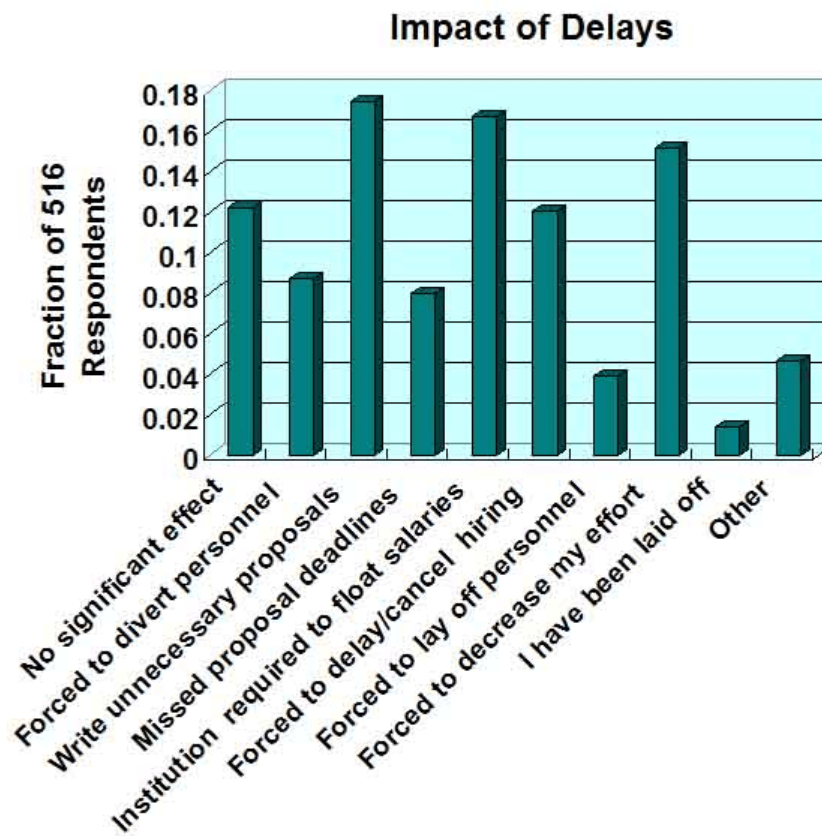
**Agencies to Which
Proposals are Submitted**



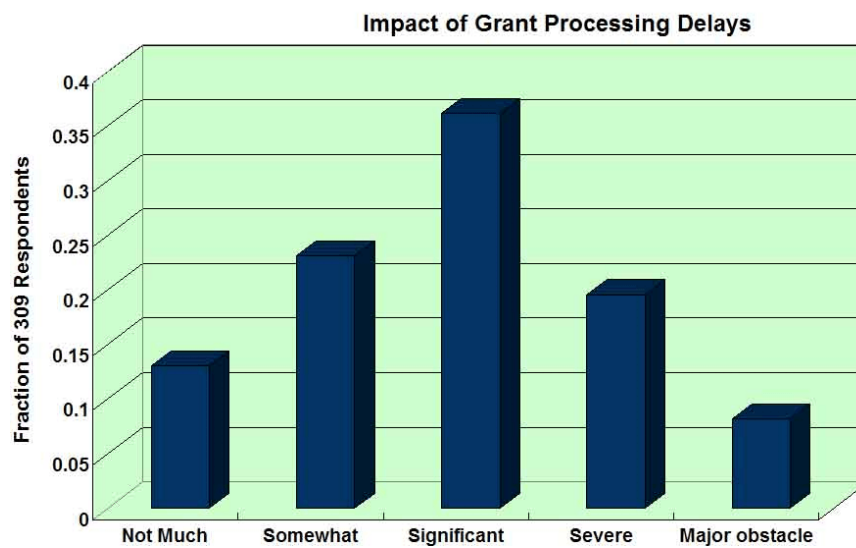
Impact of Delays in Notification of Proposals

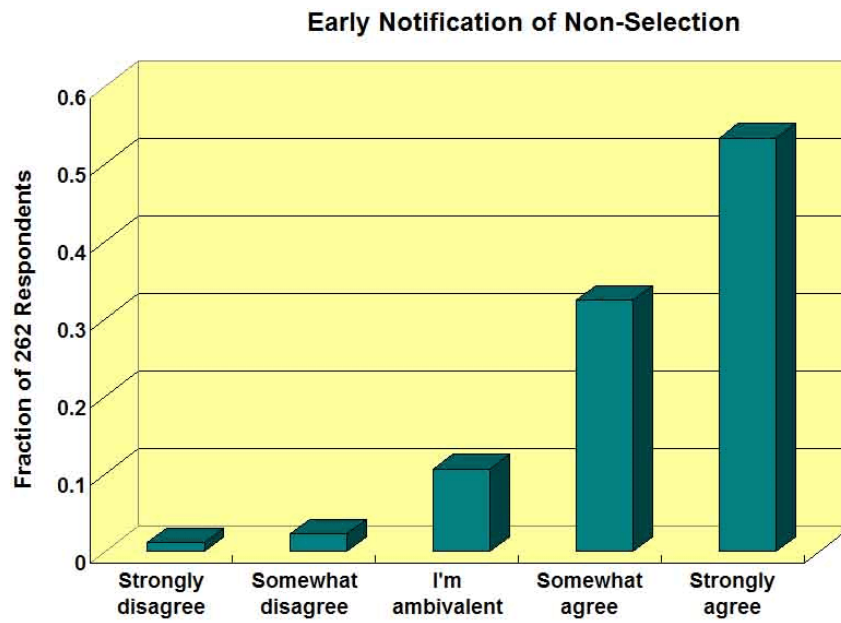
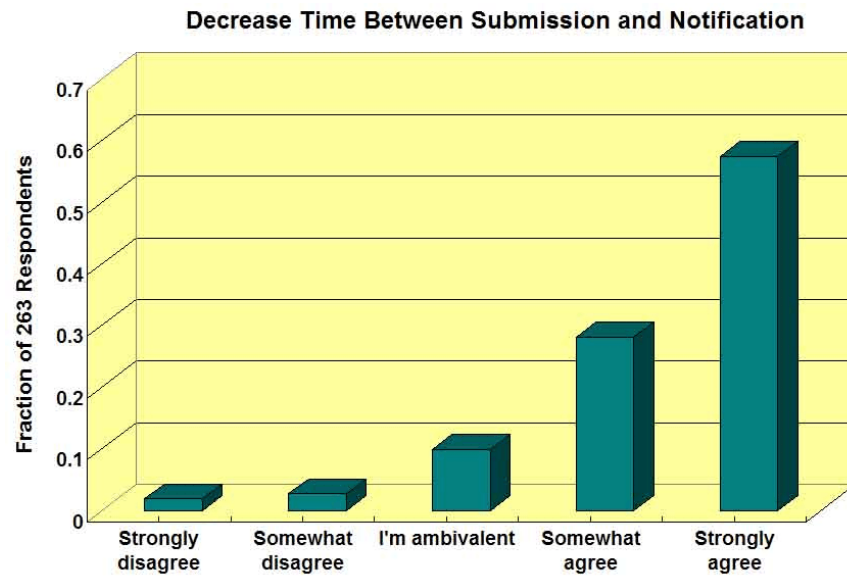


Q42

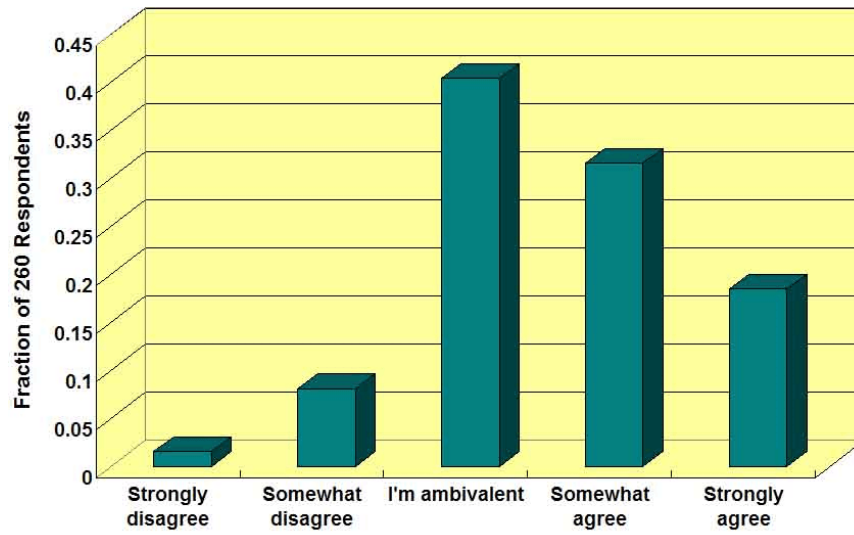


Q43

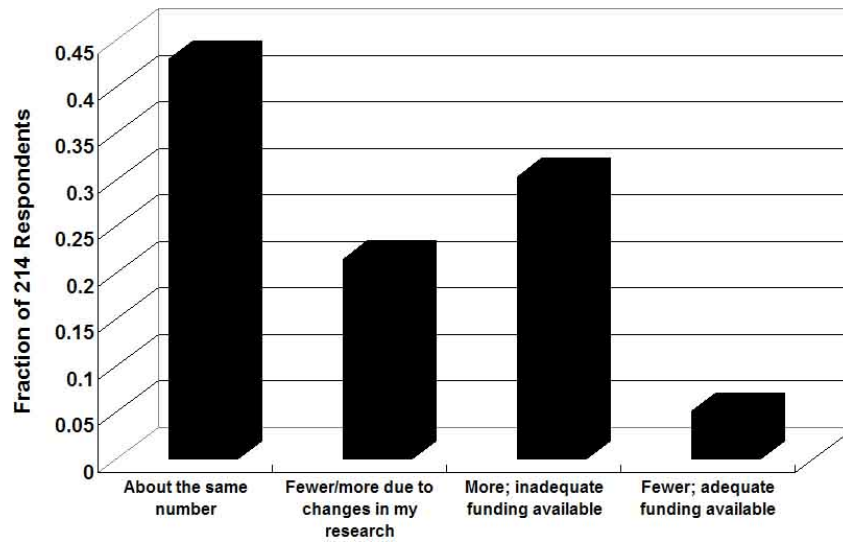




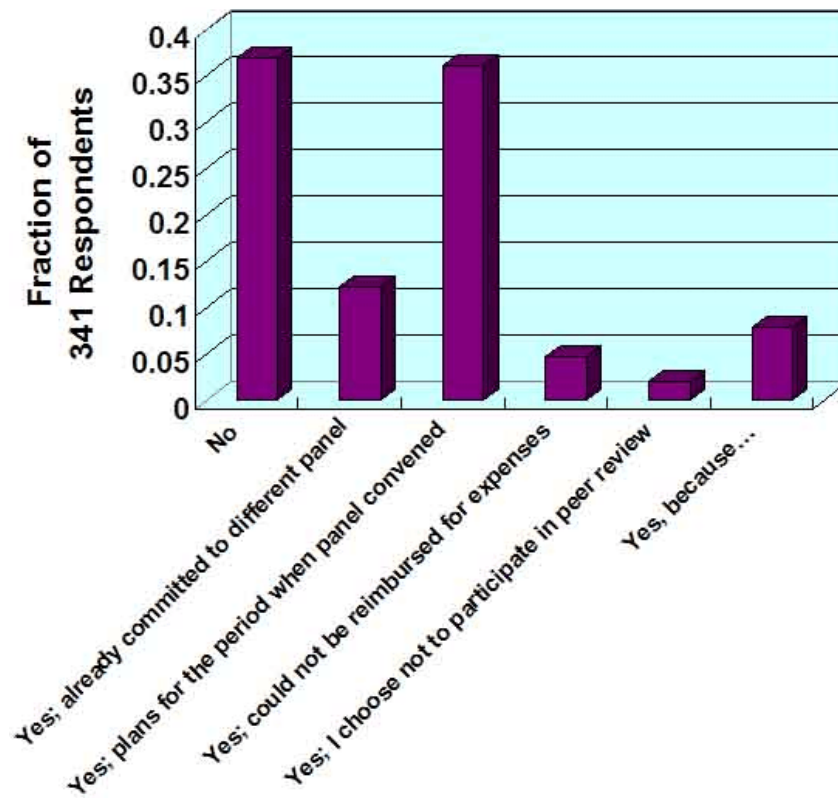
Increase Spacing Between Related Programs



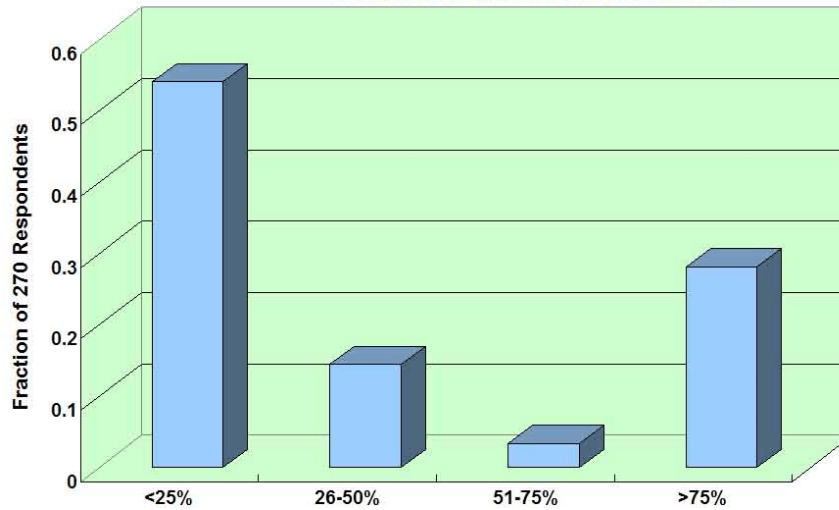
Changes in Proposal Writing



Response to Service Request

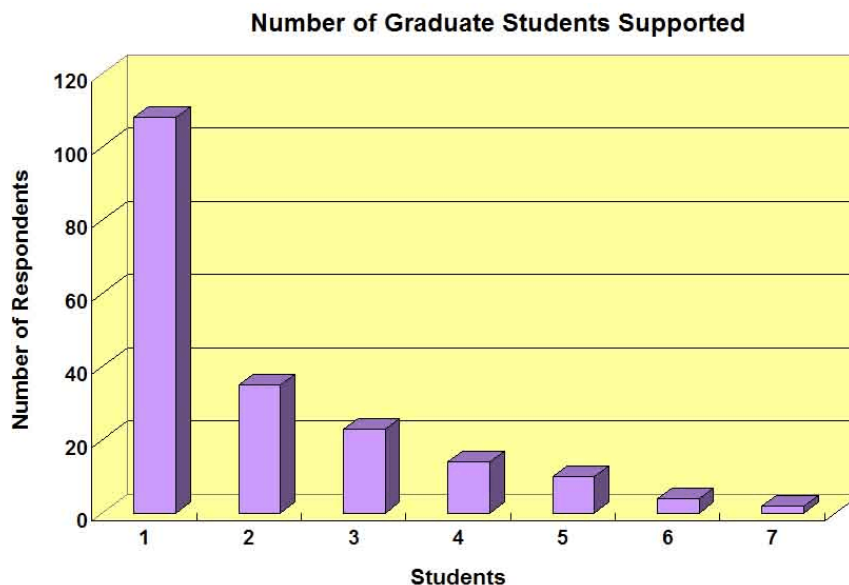
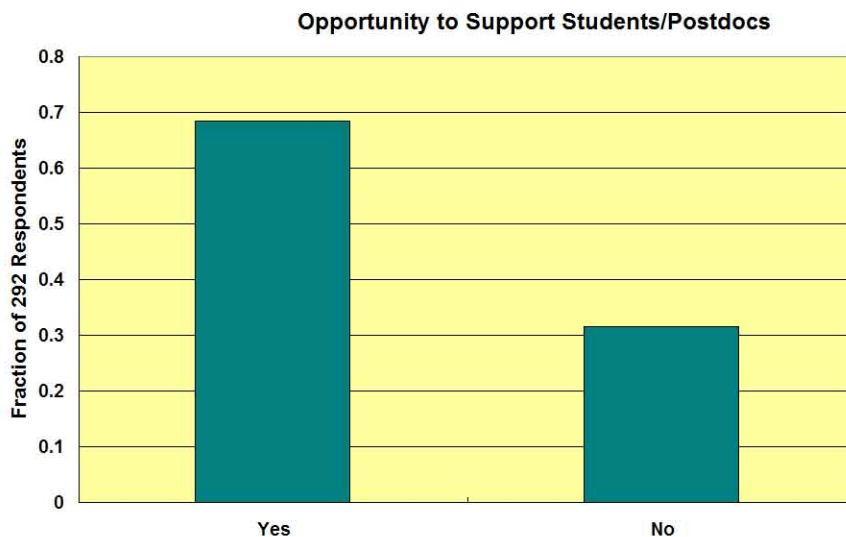


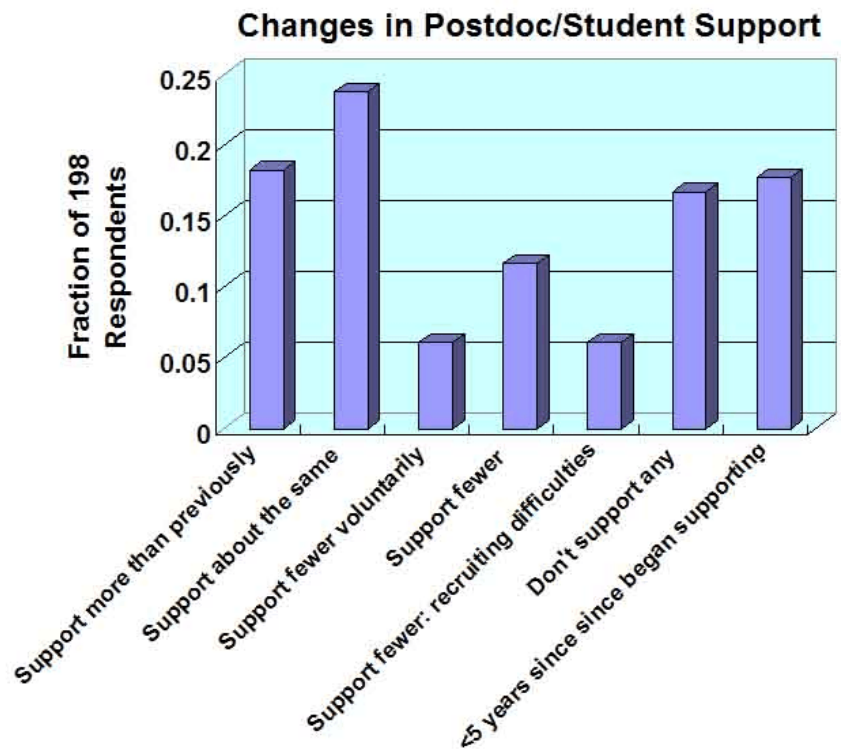
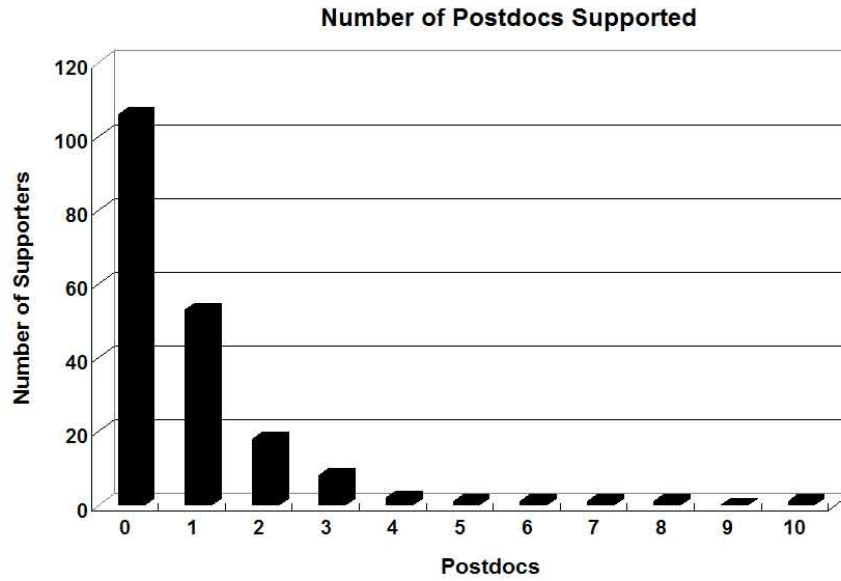
Fraction of Time that is Self-Funded



Section V. Student and Post-Doc Support (Q48-51)

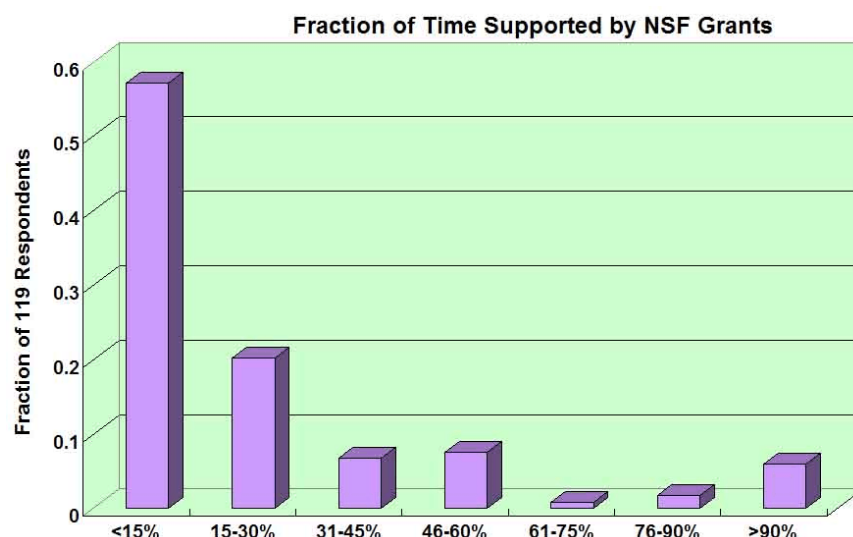
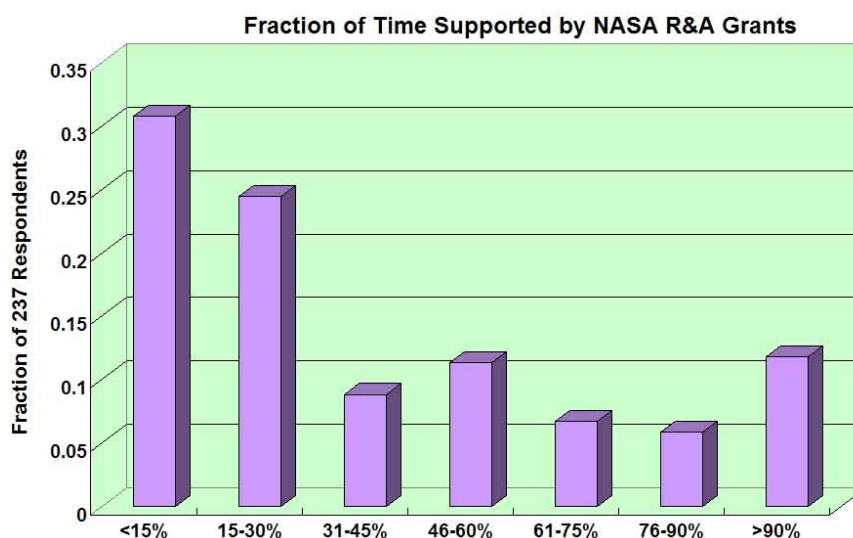
These four questions explore our ability to support students and post-docs. Eighty-seven respondents indicated that they support 193.5 graduate students while 86 supported 158 post-docs. On average, the level of such support has not markedly changed over the past 5 years.

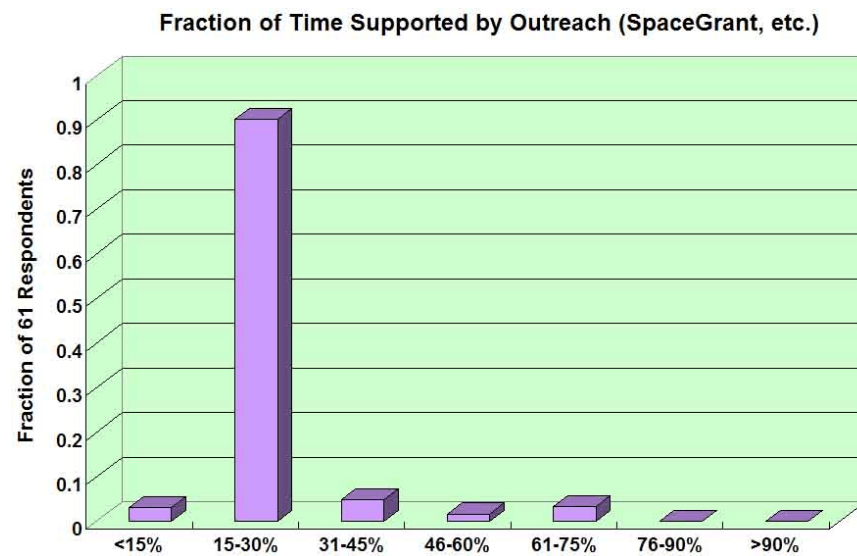
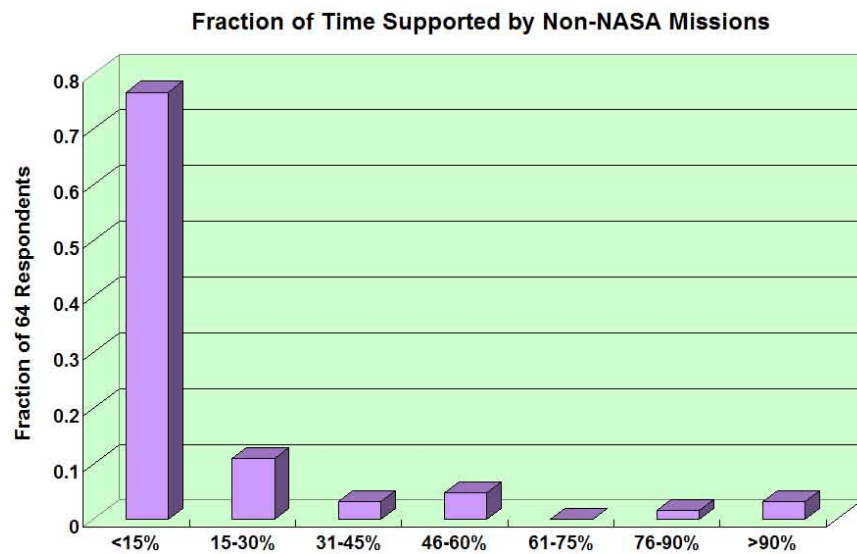
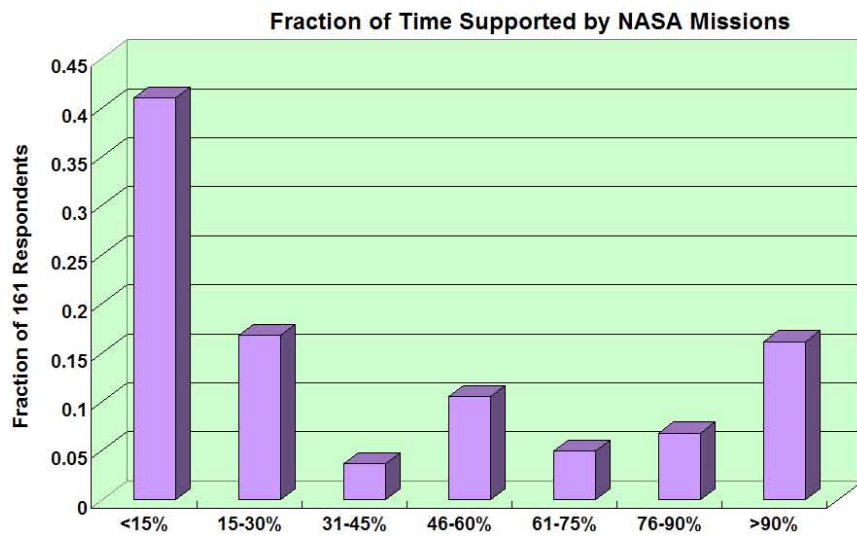




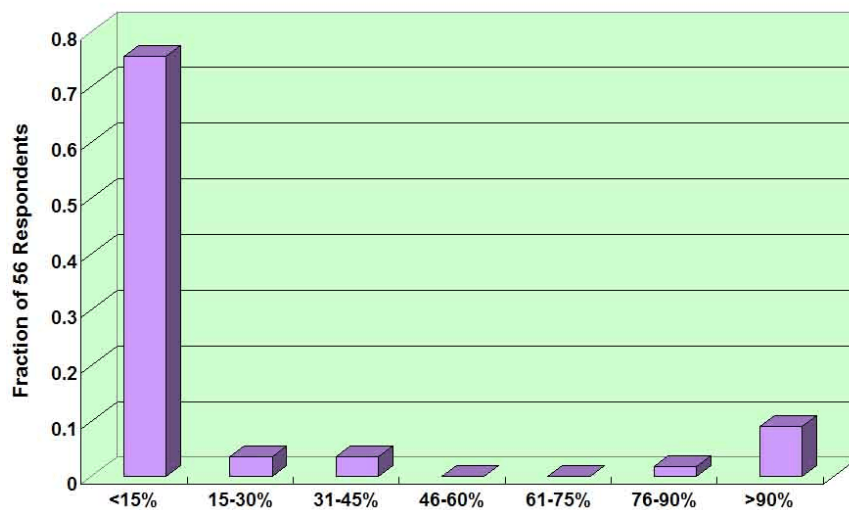
Section VI. Support of Research Time (Q52-55)

While the most significant source of funding for the DPS membership continues to be NASA, there is significant balance in the funding profile of our community among sources both public and private. In many cases the funding source is non-traditional (pensions, retirement accounts, private sources) and a significant amount of support comes from education and outreach. Overall we are working at the effort level we wish to (<10% are underemployed) and our activities are balanced among many tasks. Nearly half of us are almost completely disconnected from teaching while only a third are engaged in research for more than half their time.

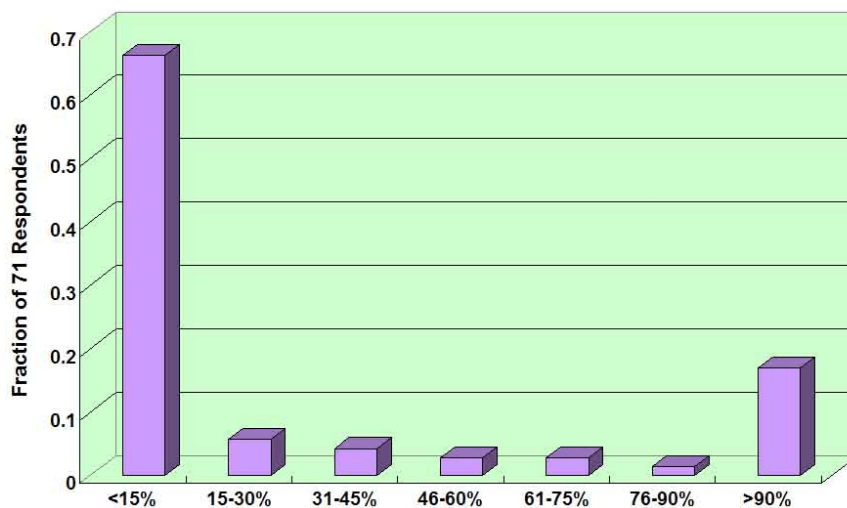




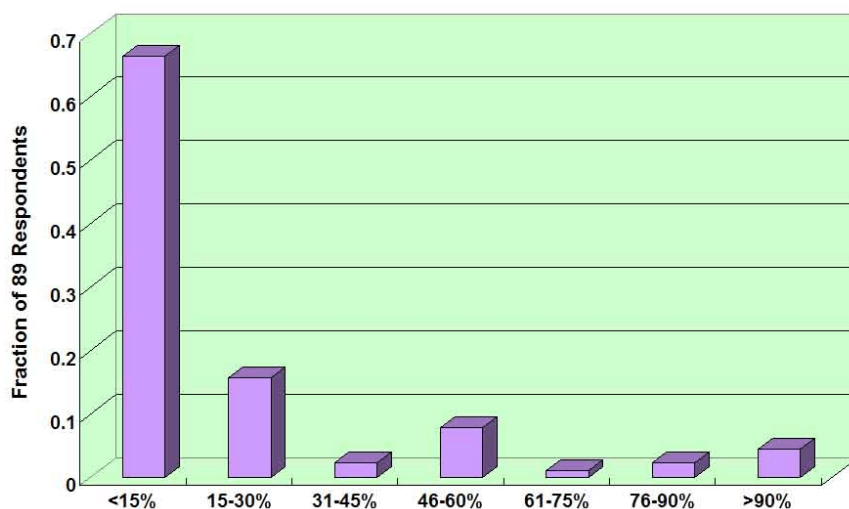
DoD/DoE Grants

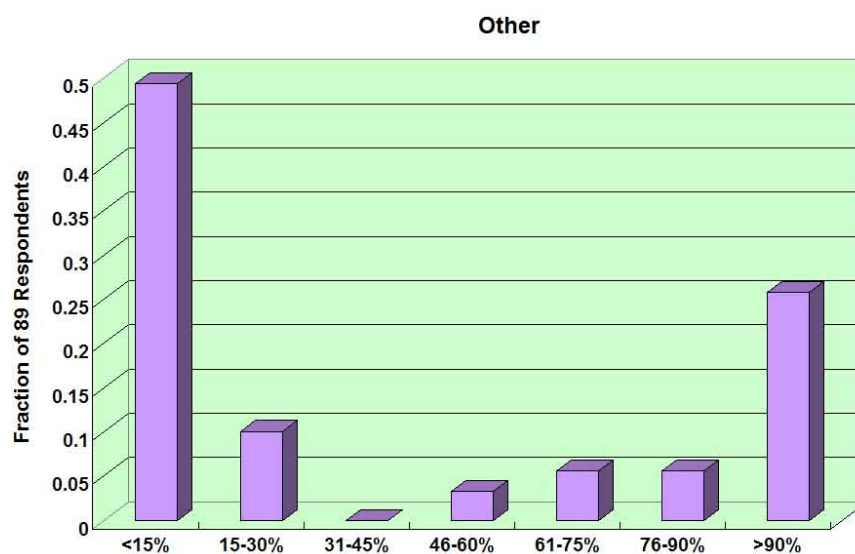
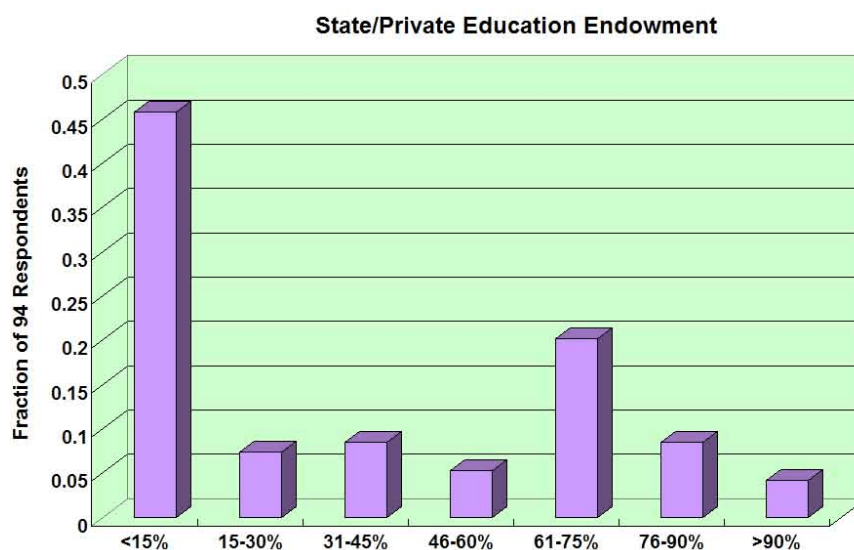
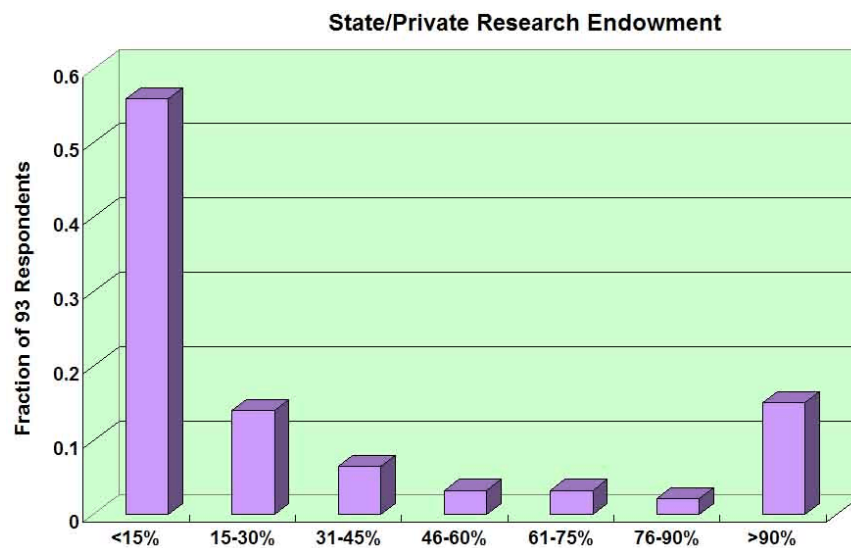


Other Grants



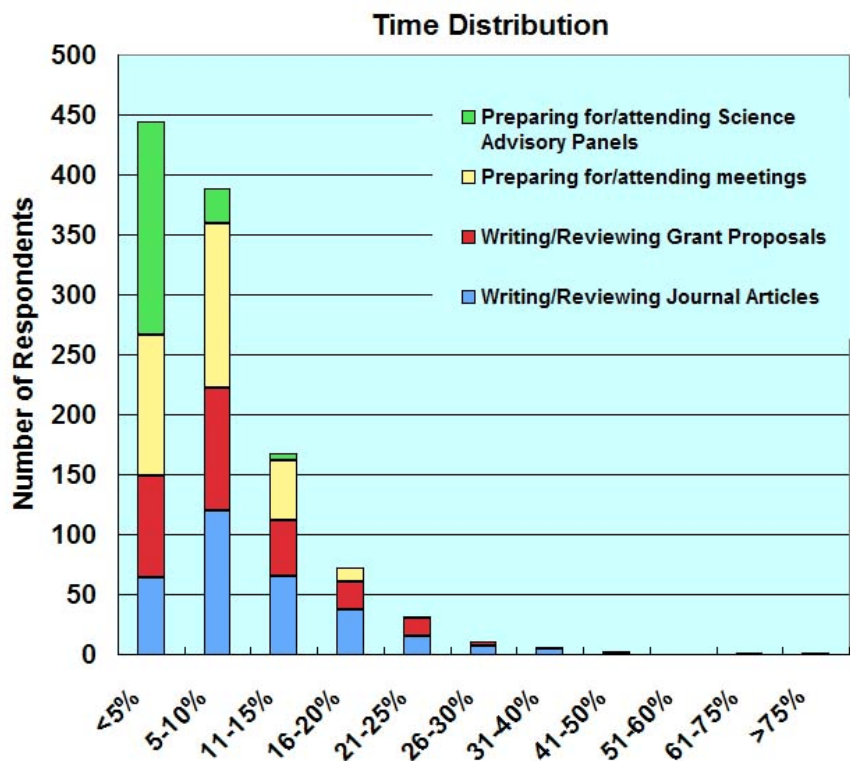
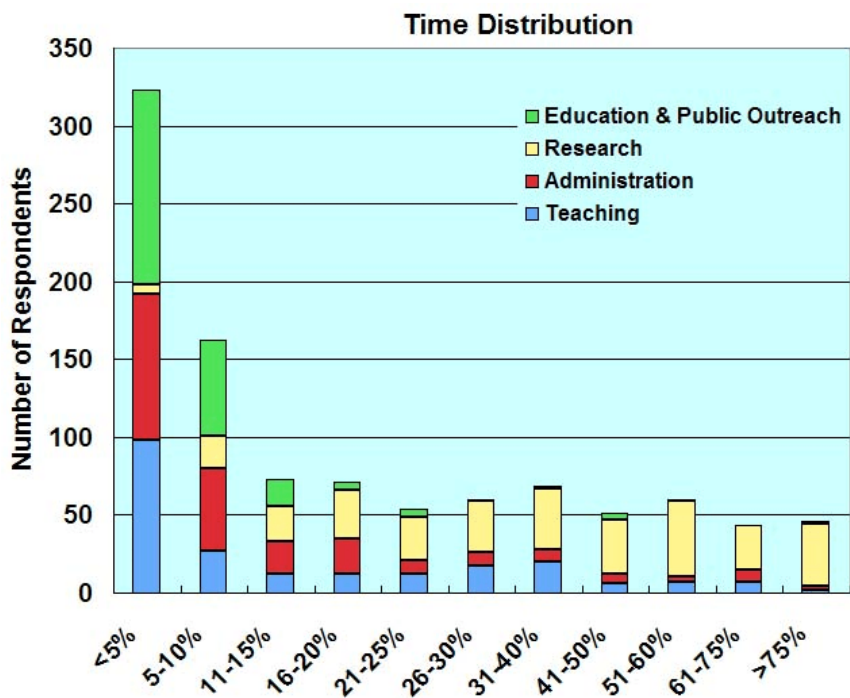
Administration/Overhead

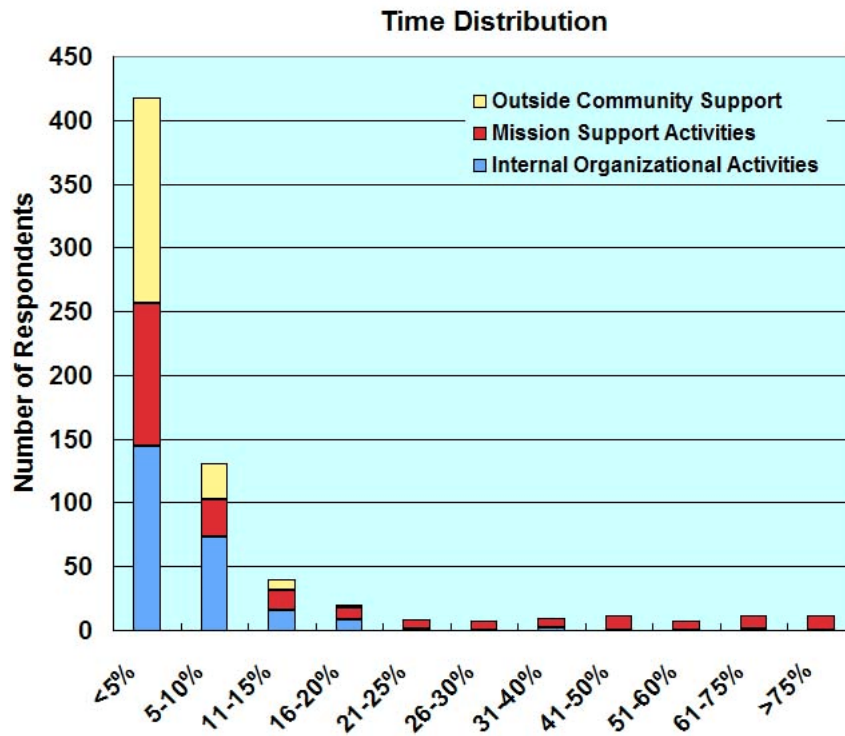




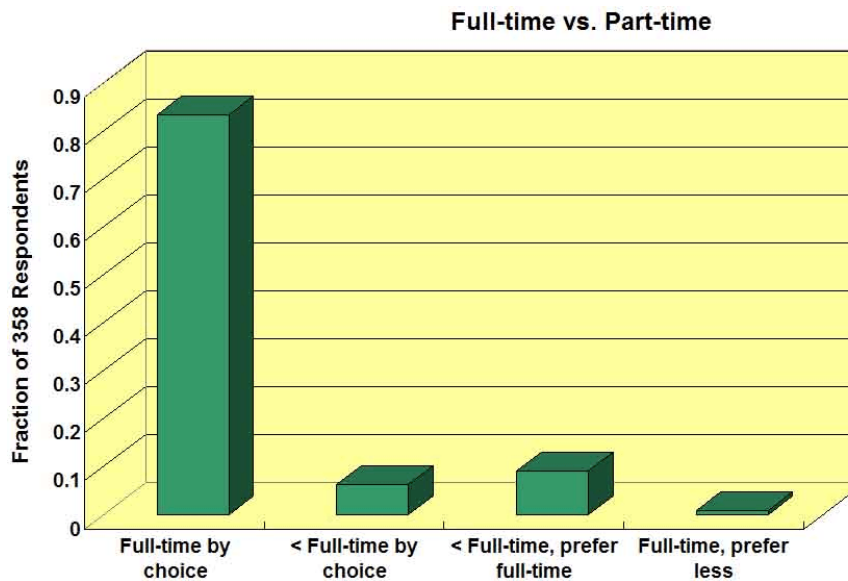
Besides the above sources, our community has an impressive number of funding sources. Fifty-six respondents listed support ranging from retirement funds to private investments to positions funded by their governments.

Q54. Percentage of time in various activities





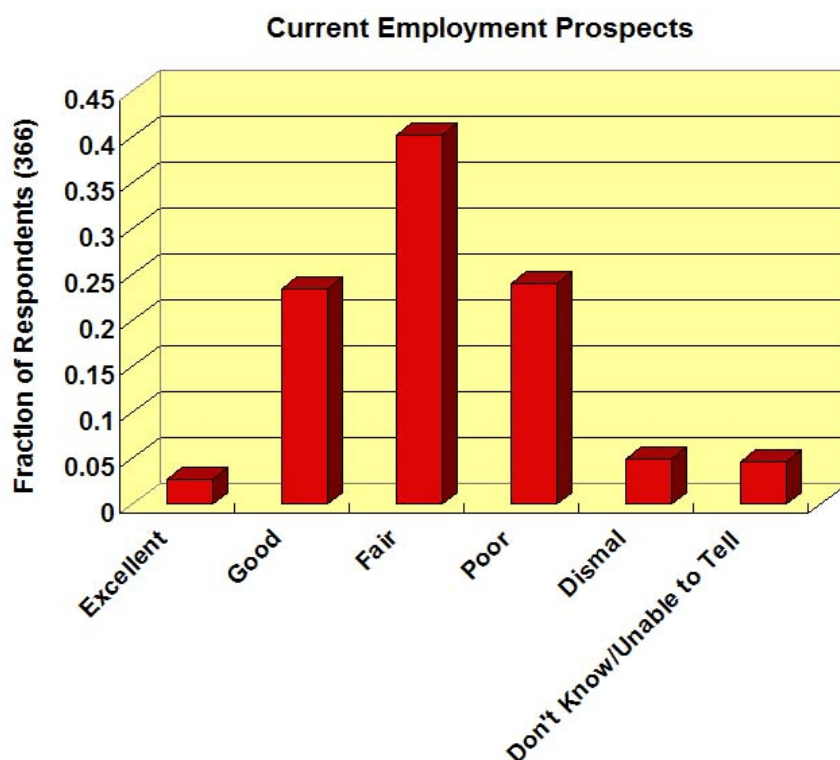
Fortunately, 90% of the respondents are working at the level they desire.

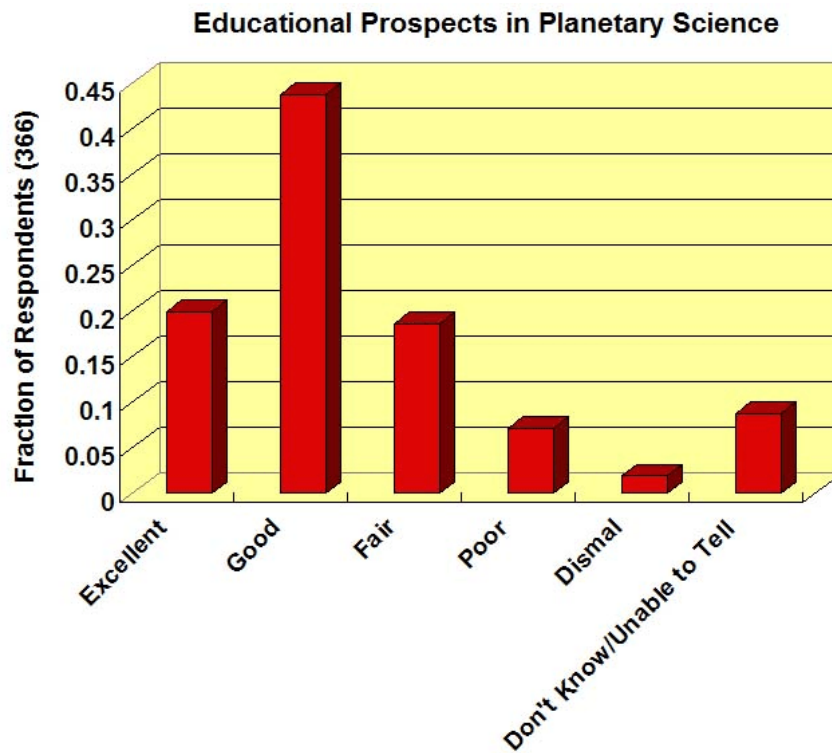


Section VII. Perceptions of the Field (Q56-63)

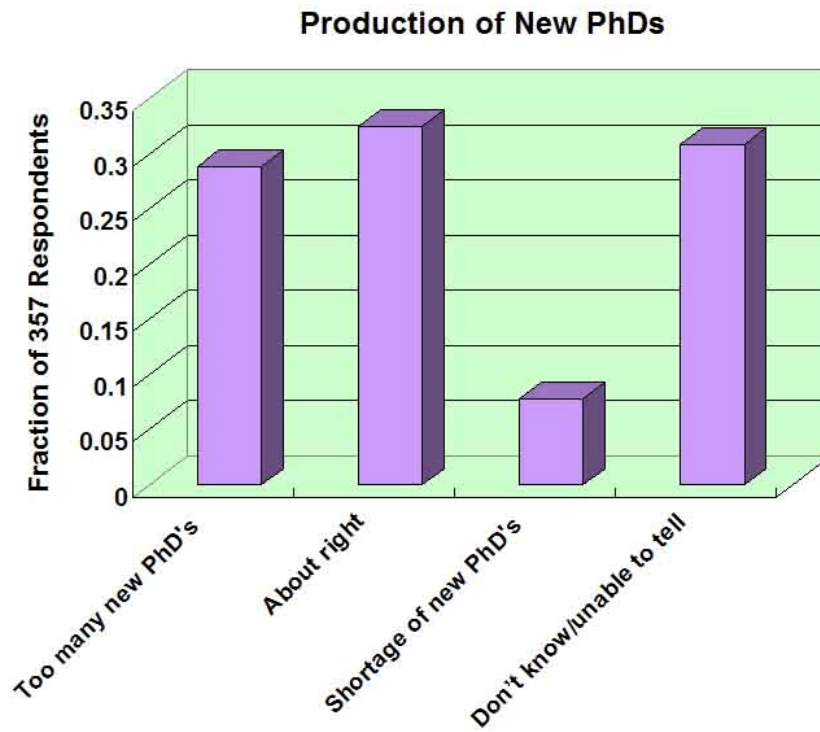
Over half of the respondents regard employment and educational opportunities as “fair,” with a slight majority of those left calling them “poor” or “dismal.” Our concerns about the rate of Ph.D. production have ebbed in the past decade, though about 30% continue to believe we produce too many. The membership was, at the time of this survey, optimistic about the future and over 60% are very satisfied with their career choice. Roughly half of us graded the future prospects of our field as “good” or “excellent,” with less than 25% regarding the situation as poor or worse. We are slightly less optimistic about the future, but 70% still rate prospects as fair or better. This optimism translates into high expectations for future scientists, with less than 20% of us actively steering students into other fields.

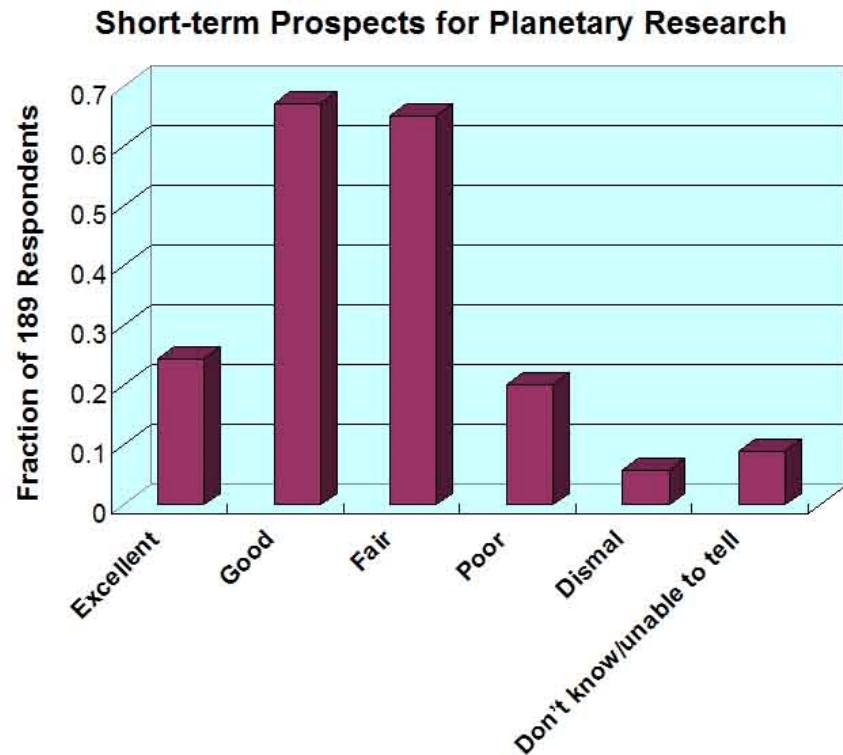
Our respondents assessment of current employment prospects is that they are not very good, with there being a fairly symmetric distribution around “fair”. However, this outlook is better than it was a decade ago when most respondents thought the job prospects were “poor.”



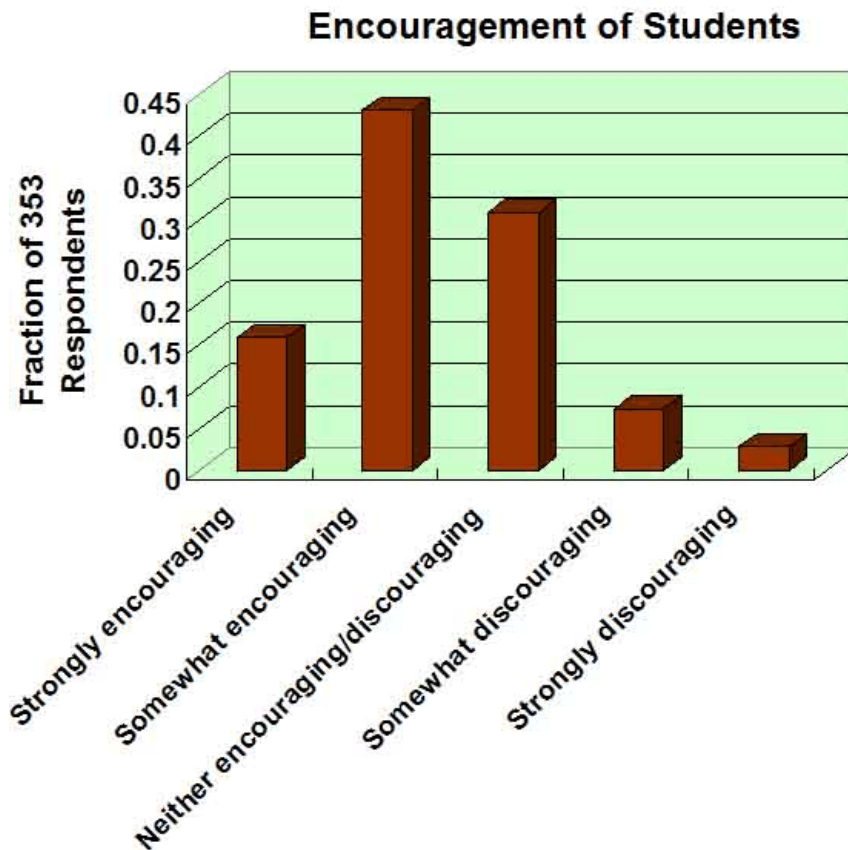


The production rate of Ph.D.'s is viewed more positively now than it was a decade ago, when a strong majority (>70%) felt that we were producing too many Ph.D.'s.

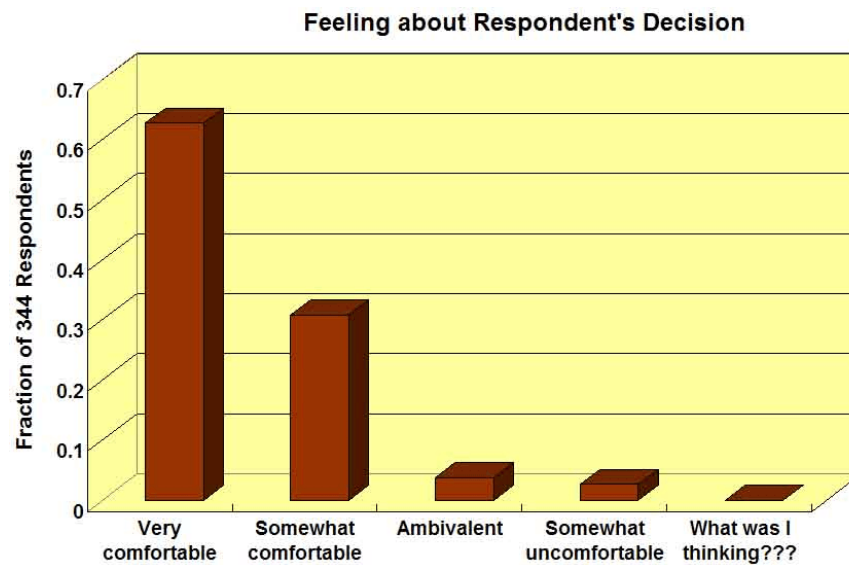




DPS scientists today are more positive in their encouragement of students that they were 10 years ago when the overwhelming majority were either neutral or negative.



This question probed how people felt about their decision to enter planetary science. This trend is similar to that of a decade ago when most respondents said they would not change their career choice if they could do it again.

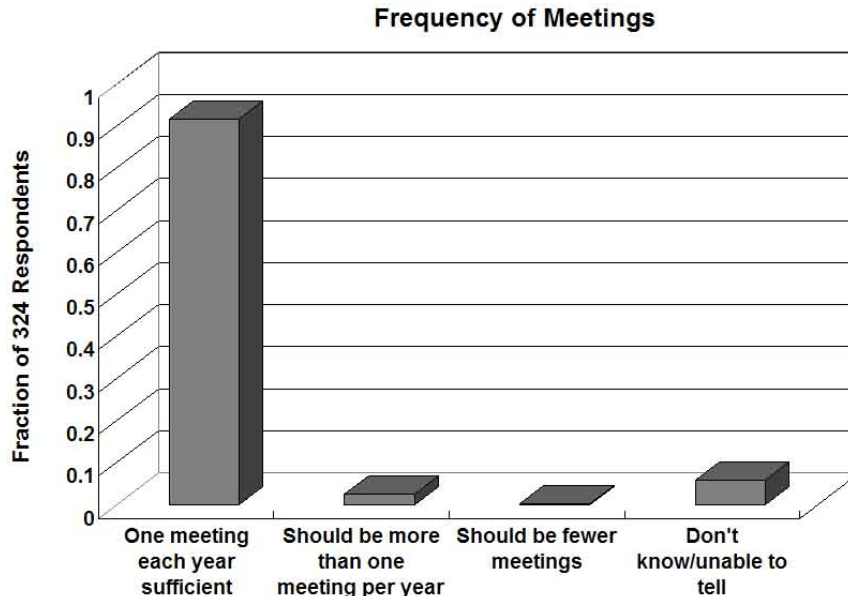


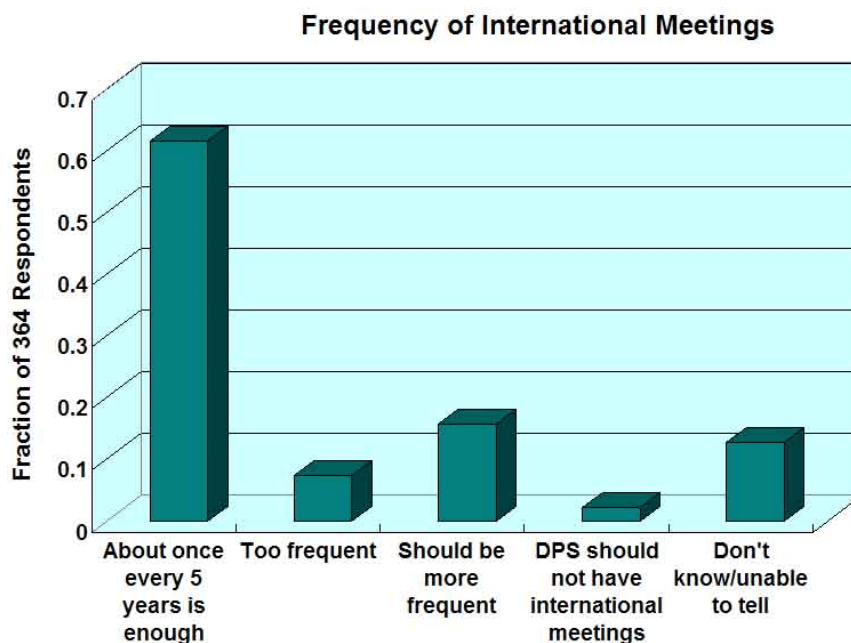
Q63. This is a write-in question seeking comments on the status of Planetary Science. Responses are given in the Appendix B.

Section VIII. DPS Role and Responsibilities (Q64-67)

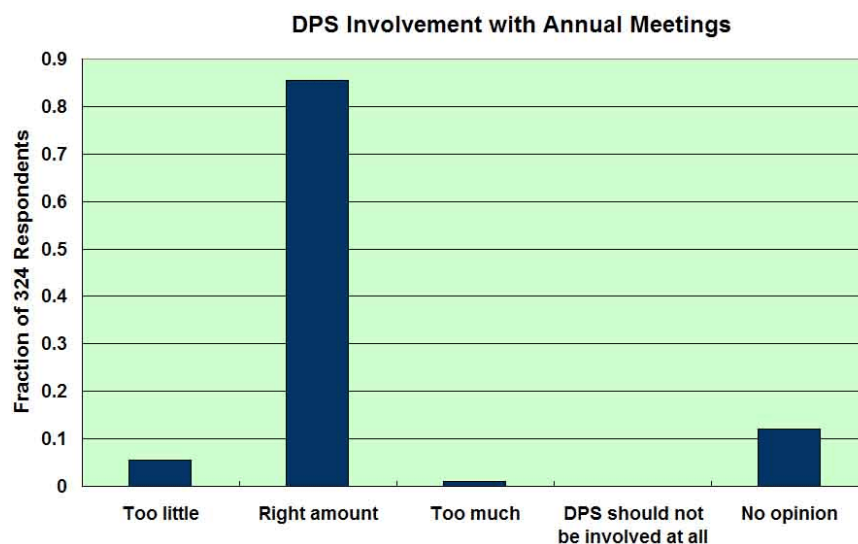
This section addressed how the membership felt about various DPS activities. Overall, the majority of respondents felt that the DPS was doing things about right on most subjects. Issues such as DPS involvement in lifestyle or minority rights drew a large fraction of “No Opinion”, while doing more on Outreach evoked the strongest support. While most respondents felt that the DPS had the right level of involvement in government policy or monitoring programs at NASA/NSF, there is a significant minority (around 20-25%) that believes that we should do more. And this survey was taken in the Fall, 2005.

Most respondents felt that our meeting frequency was about right. There is a positive shift in favor of international meetings over the past 10 years (nearly 11% said no international meetings in 1995, while only 3% held that view today). Over 60% of the respondents in both surveys felt that once every 5 years was the right spacing for international meetings.

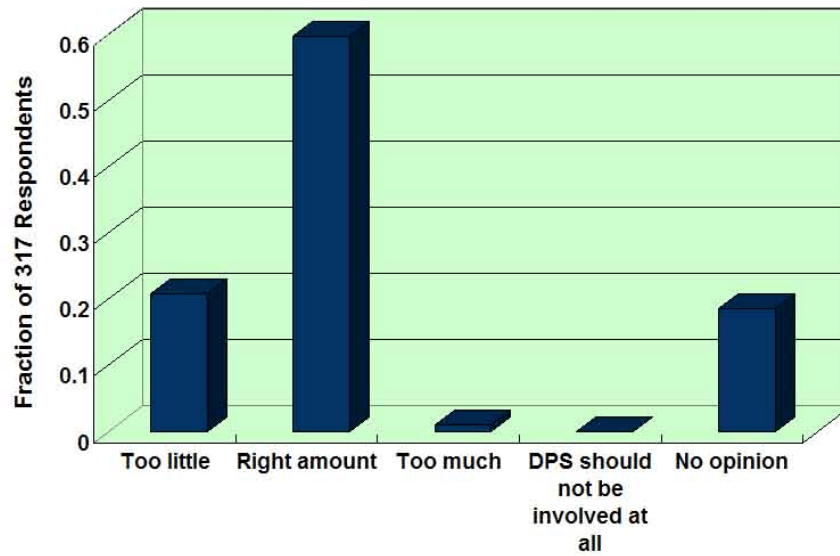




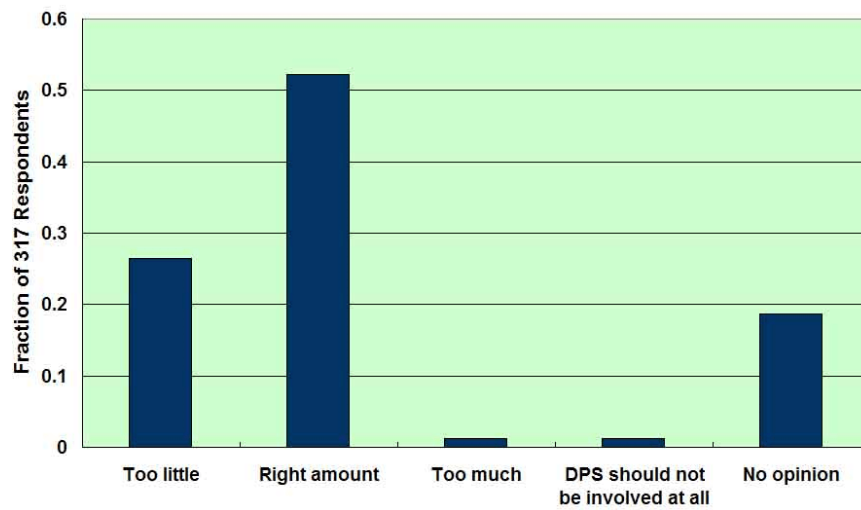
Q66. This question dealt with the degree of involvement of DPS in the various areas. Public outreach was the topic that had the highest percentage (33%) that felt that the DPS should be doing more. Involvement in government policy (27%), job services (22%), education (20%) and NASA/NSF program monitor (20%) were topics where a significant minority felt that the DPS should be doing more.

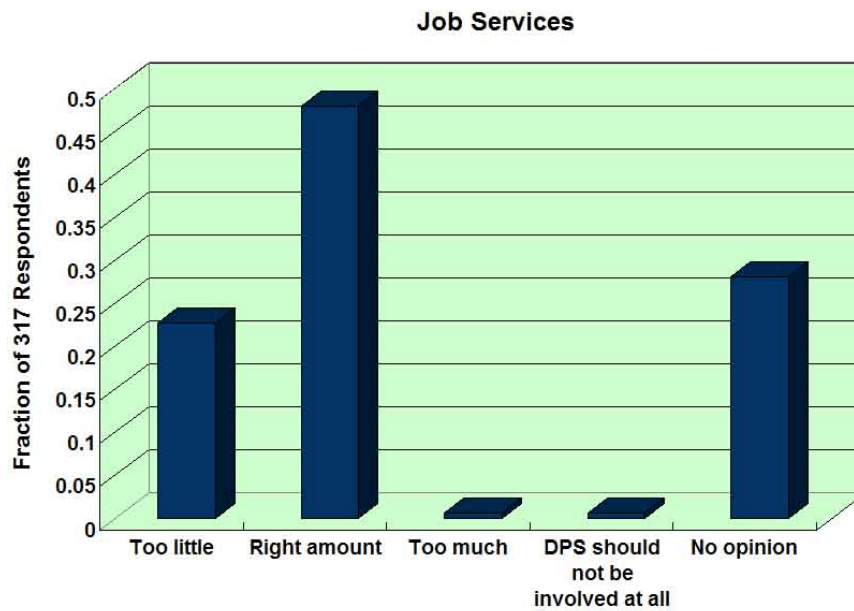
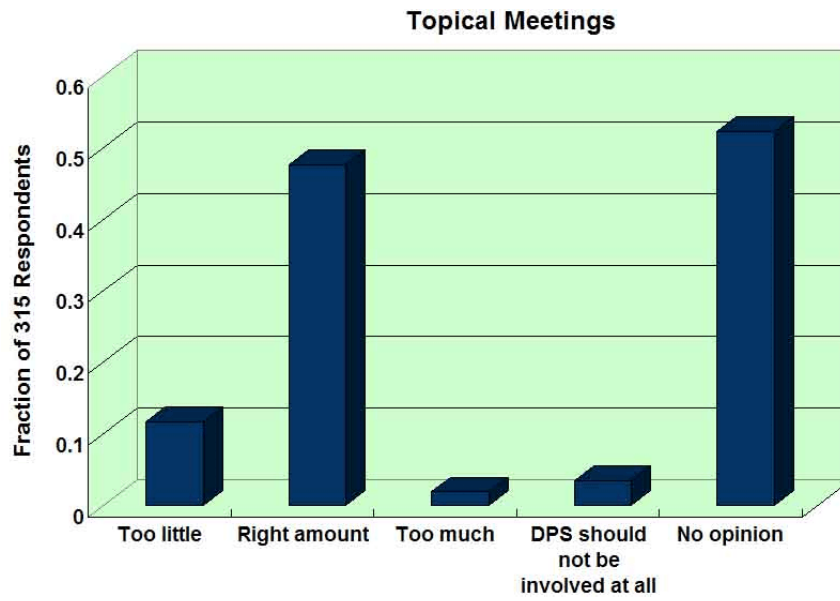


Coordination/monitoring NASA/NSF Planetary Science Program

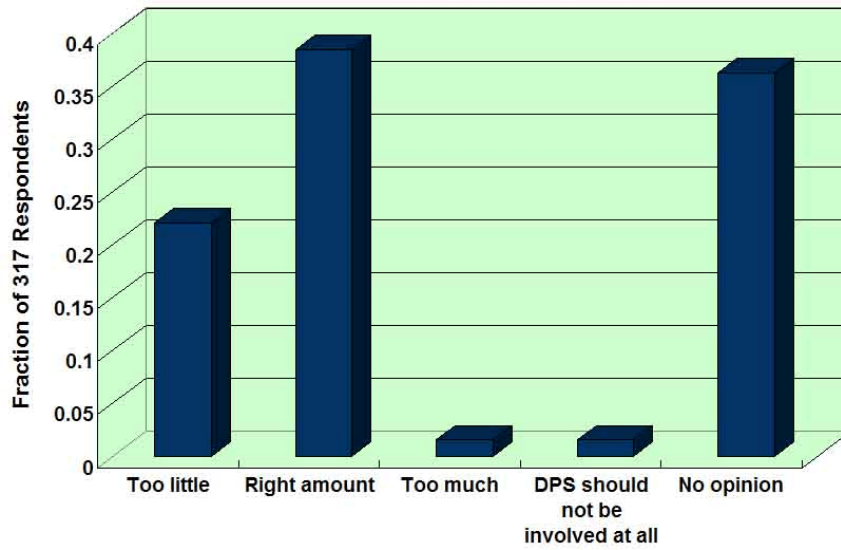


Government Policy

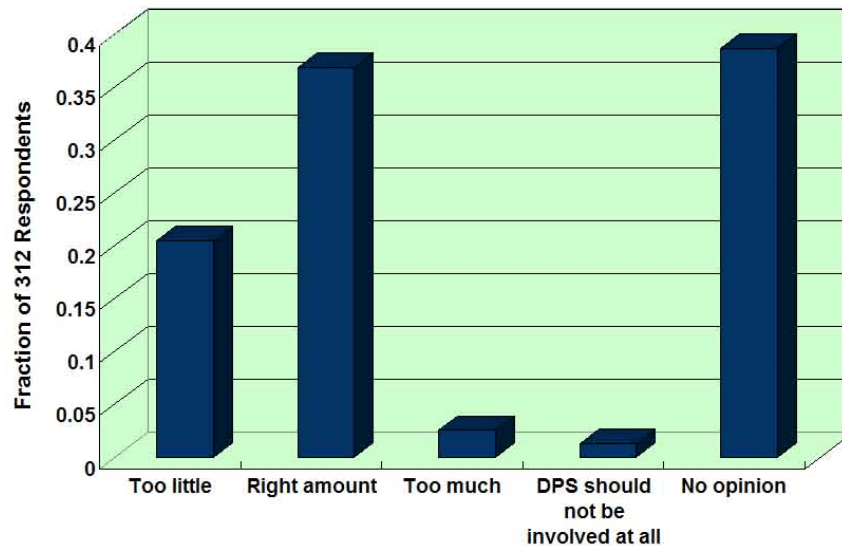


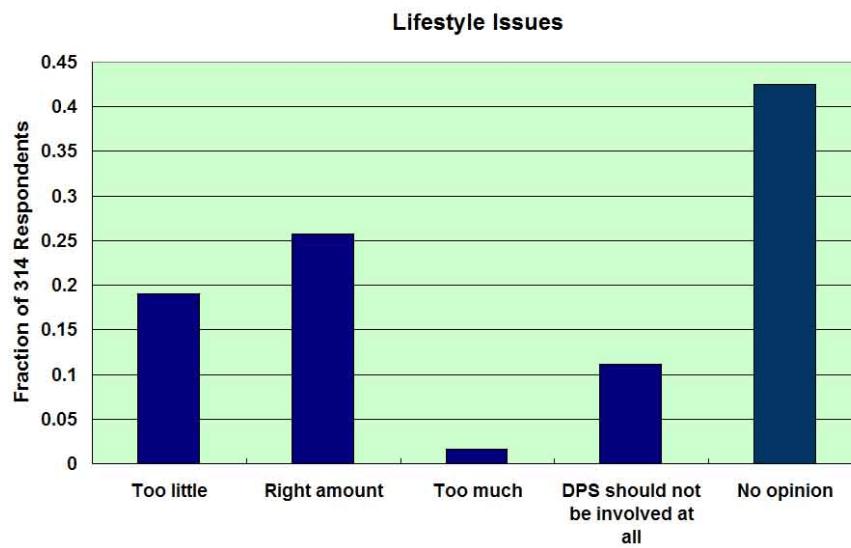
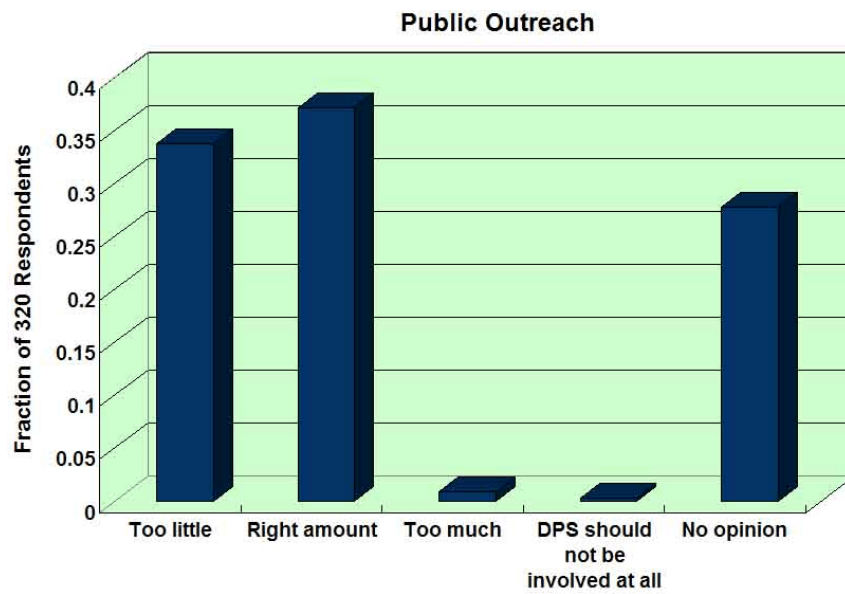


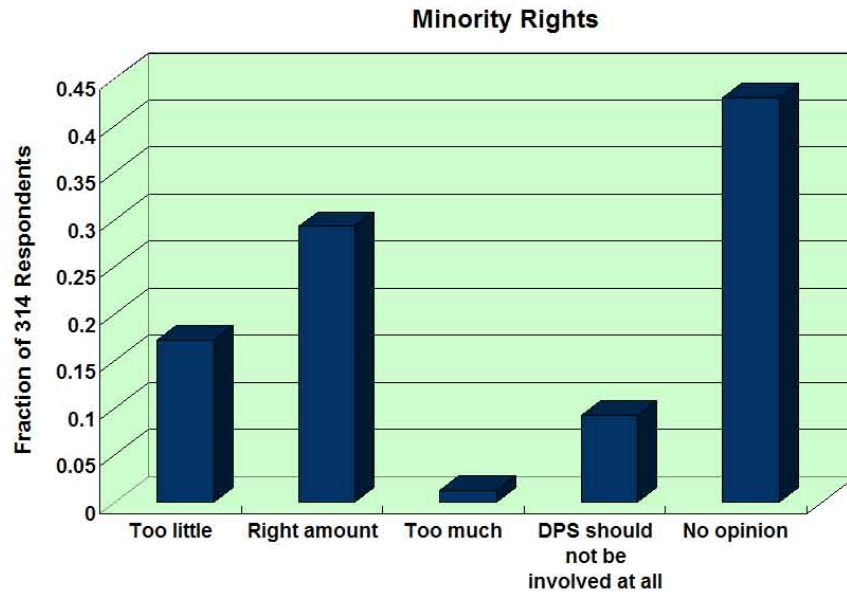
**Education and Training:
University and Postdoc**



Education and Training: K-12







Q67. This is a write-in question as what should be the TOP priority of the DPS over the next 5 years. Again, the responses are tabulated in the Appendix B.

Acknowledgments: We thank Susan Niebur for assistance with data preparation and Elaine Owens for invaluable help in producing the final report.

APPENDIX A

DPS 2005 Membership Survey

APPENDIX B

Detailed Responses to Individual Questions

Big Picture Comments

In terms of technical achievements and intellectual content, we are living in a golden age of planetary science. Sociologically, the discoveries of exoplanets and the study of substellar objects have brought planetary science and mainstream astronomy much closer together, which is a very positive thing. Planetary science and geocentric environmental studies have much to offer each other: an improved symbiosis will benefit society as a whole and will help maintain a basis of support for more esoteric research. In the struggle to improve the situation of public funding of research, remember that government agencies in a democracy are us not them: we share the responsibility for their faults and for trying to reform them.

Planetary Science is still very exciting and we have not exhausted new discoveries at all. We need to do a better job in selling Planetary Science and educate the public better. Right now with the funding problems, Planetary Science is declining too fast.

Intellectually vibrant, demographically stable, highly competitive.

Planetary Science today is perhaps the most inspiring and exhilarating intellectual endeavor of humanity – it is genuinely multi-disciplinary, provides challenging problems with accessible tools for quick gratification, and is probably limited only by our imagination. New discoveries about our own solar system and about systems elsewhere in the Galaxy are occurring at a rapid pace. Society at large is very supportive and interested in our work. It is a new golden age for planetary science.

Planetary Scientists are a lucky bunch of people.

Planetary science is in the process of reattaching itself and re-legitimizing itself in the larger field of astronomy/astrophysics. The importance of this development cannot be overstated.

Planetary Science is the only field in Space Sciences that directly affects human life on earth. Learning about the big, wide Universe is great, but if an asteroid is going to impact earth in the next decade there is little someone can do except run. It is about time people realize the practical importance of planetary sciences and support it with an open mind. The first step towards this effort would be to create graduate programs across the country that meet the specific needs of planetary sciences community. Learning about stellar evolution is great but you can hardly apply it to study Mars. Its time to get to the middle ground and devise a program that encourages young planetary scientists to engage in healthy scientific debates.

It is an extraordinary privilege to be able to make a living doing planetary science. A side effect of this exceptionally wonderful career path is a very high rate of attrition along the path from undergraduate to career planetary scientist. That the public is currently willing to fund our work is a privilege, not a right. We owe it them to produce new discoveries, educational opportunities, and inspiration.

Q63. Comments on the status of planetary science

The biggest problem is the lack of broadly-based stable support through enough tenure-track positions in universities/colleges and career positions in government laboratories. This negatively affects the work environment (the main thrust of this survey) but also undermines the scientific basis upon which

NASA's planetary exploration program is actually built. NASA does not seem to want to recognize that it has been supporting the broad discipline of planetary science through its R&A programs, such as they are, having essentially created the field 40 years ago. NSF's planetary program is inconsequential. When one looks at all the exciting discoveries, it seems that somehow the system plows ahead. But it could be much better.

Science as a whole has pretty poor prospects in the US in the near term. What the US decides for the long term remains to be seen.

Despite the current hard times, we have many missions in progress. There will continue to be good positions for the best people.

More workers than ever are attempting to feed families and continue precarious careers as full-time soft-money researchers. This contributes to instability and insecurity to a large segment of our field. This problem seems to be due to a long-term mismatch between an excess of Ph.D.'s produced relative to limited faculty position turnover.

Healthy, improving, exciting - lots of opportunities. Yes, there are concerns and worries about NASA and funding - but that's always been the case.

I fear that the future of planetary science is bleak if the current initiative to put a human on Mars continues.

I (and everyone in my class) was told that permanent, hard-money jobs in planetary science were scarce and that we should think about alternate careers in education, industry, etc. All of my classmates took jobs outside of traditional research. I am hanging on through sheer stubbornness and a fierce desire to not be a statistic (female scientist dropping out). I have numerous obstacles in my employment path but also a lot of encouragement from higher-ups. I continue to pursue planetary science because I'm excited by the science, I love my research, and I enjoy the community. I think it's unfair that at 35, the community thinks it's ok that I don't yet have a permanent job because I'm still young. Where else in the world is this true?!

Planetary science is not a national priority, with no real prospect of being so in the near future. Anyone entering the field must do so without expectation of outside appreciation or remuneration commensurate with a given level of talent if directed in some other field. Reward must come from within.

The present system is counterproductive to the advancement of science.

The field is healthier than when I entered it. The field is now well accepted at major and minor universities. Missions of some sort seem very probable into the indefinite future, though there's no telling what kinds of missions. The field is well integrated with terrestrial science, astrobiology, astrophysics, and what was once a US-only field is becoming global. One major challenge I foresee is the increasing cost and lead time for flagship missions, and correspondingly reduced number. Small missions, ground-based observing, theory and analysis are essential.

It's a fascinating field, but prospects are limited.

The lack of minority representatives is OBVIOUS in our field. The head of the committees is mostly composed of white, >50 yrs old, man. Where is the diversity? Where are the minorities? I think that most of them already had gave up or are about to do so because they are tired of facing the same group of people who know each other for years (mostly because they studied in the same universities, such as Bolder, Arizona, and Cornell) and locked access to the committees and decision centers to others. Planetary science needs to diversify and NASA should make sure that some of us are not accumulating responsibilities and titles.

The number of missions and research opportunities are increasing, but the number of scientists seems in steady-state, so we are all far too overworked. We need to get excellent students into the field soon! Also, it is absurd that typical research grant amounts today seem about what they were 10 years ago, despite inflation, meaning that each grant is worth a lot less, and more grants are needed to support a research program. In reality we all work harder for free, and this cannot be sustained.

The field is top heavy and is (and has been for a very long time) producing too many Ph.D.'s for the market.

There are plenty of temporary positions available but no permanent positions. New graduates can easily find postdocs, but postdocs cannot easily find further employment (other than doing another postdoc).

Very exciting at the moment because of the large number of active space missions, e.g., Cassini, Mercury Messenger. Excellent professional bodies like DPS.

I think the field is approaching or is at a plateau in the amount of funding and new missions. If this continues, then there will clearly be problems in supporting new people entering the field. Since NASA is focused on going to the Moon and Mars, research opportunities will open up in these areas. NASA has always been mission oriented, so this is not something new.

Although it's easy to be cynical, funding for both missions and R&A have been on the upswing. Most fresh PhD's appear to be fully employed (myself included). It's not an easy field, but there are not mass layoffs, nor are grant programs usually cut. Planetary science appears to be doing better than astrophysics (cuts at STScI, LTSA, Astrophysics R&A program) or solar astronomy. I am not certain of my future -- perhaps it's random that we're doing well while other fields are being cut -- but I don't predict leaving the field due to lack of funding, either.

Funding is not adequate to exploit the data being returned by planetary missions, limiting the rate of progress in understanding planetary environments, processes and history.

Impossible to survive without political acumen.

Funding simply has not kept up with the increasing costs of doing research. And I don't see any change in the political climate in the near future. I am seriously considering leaving the country and seeking my fortunes elsewhere, likely Europe. They seem to have a more forward-looking view of the world whereas the US has its head stuck firmly in the sand.

Most of the money for planetary science is spent for missions. The remaining money for data analysis, interpretation, modeling, ground-based observations etc. is smaller and competition for grants is

significantly stronger than those in other fields, e.g., studies of the Earth's magnetosphere or atmosphere. That is, percentages of granted proposals may be similar for Planetary Astronomy and Living With A Star programs. However, the former is a unique program for ground-based observations of planets while proposals to the latter may be submitted with minor changes to five other programs. Because of the strong competition for money I cannot recommend students to choose planetary science and do not work with students.

The difficulty in getting proposals funded, and getting the funding, has hurt the planetary science field. These frustrating uncertainties are driving young people away from Planetary Science.

The field is great for those lucky few who can get faculty jobs. NASA civil servant jobs used to be a close second, but now those jobs are getting flushed down the toilet with full-cost accounting and bureaucracy. The situation is not good for those people on soft money. The field as a whole is relatively healthy at the moment, with lots of new missions and excitement from the public, but NASA is badly broken and the future is uncertain. More "real" (hard-money) non-faculty jobs in research (not just mission support) would help. I'm hopeful for the future, but some recent trends make me nervous (e.g., NASA removing the firewall between missions and science).

Planetary science is an exciting career, however the field currently appears to be saturated by researchers and the funding levels do not appear to keep pace with the cost of living. Funding is also unpredictable.

Planetary science as a field of study needs to clean house. Right now it does not encourage young talented people to stay in the field. Six to eight years after receiving a degree is too long to wait for a faculty appointment especially for those who wish to support a family. Believe it or not there are greater priorities in life than planetary science. The field is also too snobby. Why should scientists be the only folks allowed to explore space? The field needs to get over its own ego and political agenda.

Excellent area for study at undergraduate and graduate levels. Excellent opportunities for gaining valuable experience as a postdoc by changing to a different sub-discipline or specialty. Long-term employment prospects for a full-time position are poor.

Money isn't everything. I could probably have earned more money in some other field, but that doesn't mean I regret choosing planetary science!

The status is that there is no status. Things are changing faster than I can type. Keeping an active soft money program is like trying to hit a moving target. Grant and funding delays only make this worse.

Very interesting field to work on, but unfortunately not well supported with funding etc.

It is always driven by the NASA budget situation. Some parts do fine, others fall apart. It is tough to plan careers when missions come and go and sometimes fail. So it is best to be a generalist and able to move among areas and react to new opportunity.

As a frontier area of research, the employment situation in planetary sciences is more volatile than some of the "quieter" fields. Employment in planetary science should be very good, but the constant

privatization and reorganization of NASA is driving many of the most talented prospective students away. Pity that because the field needs them.

The uncertainty in funding prospects over time scales greater than five years makes it difficult to determine how healthy the field will be. This makes it difficult to advise young people regarding their plans for advanced degrees in the field because this is about the same time scale required to complete such a degree. These uncertainties also make it more difficult to pursue a long-term research program than to propose an ever-changing variety of small projects. This isn't necessarily a bad thing, but it makes prospecting the future of the field difficult, especially when combined with the added uncertainties of planetary missions (both from funding/development and mission success standpoints).

It's great for those who really love the research and exploration, and are not greatly concerned about money.

If the current direction of the NASA administration continues and the number of Ph.D.'s grows as it should then the financial stability of the field is in grave danger. If the number of Ph.D.'s entering the field remains at the current pace with no continued growth then we do not have to worry about the financial stability of the field, although the diversity of field will be diminished if we continue to encourage our field to grow, unless there is some intervention, we will find that in the future we don't have the financial stability to sustain the number of eager and brilliant minds our field is producing.

I have trouble getting more than one good applicant for post-doc positions, strongly suggesting that the job market is far from flooded or that job seekers are being very narrow in applying for jobs. If I weren't happy in the field, I would have left the field, so questions about whether I am unhappy seem rather meaningless.

Not enough bodies to analyze the data/do the work, but not clear that there is money to pay for more bodies. I worry that the probability of success of grant proposals and number of grants needed to support a program is falling sufficiently low as to significantly increase the effort we need to spend in writing and reviewing proposals, at the expense of productive activity. ITAR is an enormous obstacle to the flow of information (even within the USA) to the detriment of many projects.

It's a great field to be in, but it's also very tough to get a foothold for younger scientists. I suggest that if they can be happier doing something else, do it. Only if they can't envision not doing planetary do I encourage them.

With uncertainties associated with the Moon-Mars initiative, shuttle return to flight and the need to replace it as well as budget pressures due to war and a limping economy, the prospects for planetary science are getting scary.

I am worried about the availability of funding for research. While I feel fortunate to have a 9 month salary, I am in a position where I need to fund 3 months + buy teaching down to 1 class per quarter if I expect to be able to afford to live in California and have enough time to output enough research to stay reasonably active in my field. I worry that this will be a difficult task with programs so short on funds.

Like many scientists, I equate my work with a calling. It is something that I find profoundly interesting and I would almost be willing to do it without pay. I have been given the luxury of pursuing questions that for the most part have no specific value to society, and being paid for it. The problem with being a scientist is that so many other things get in the way, in particular bureaucracy, poor management, incompetent scientists (how many crummy papers have I reviewed for Icarus?), etc. Staying supported is a never-ending process and I do not feel I have the luxury to ever take significant time off from my work. Also, it is difficult to find talented post-docs to aid me in my work. There just aren't enough of them out there.

If you broaden the scope of planetary science to include support for exploration and technology, I think prospects are good until the fiscal meltdown of the US Government in 5-10 years. Possibly by then more sustainable fiscal policies will be in place, so I encourage hope in young people entering the field. I would also encourage interest in fields that have terrestrial applications as well as planetary science/exploration applications, such as economic geology and energy production and storage.

Planetary science continues to be attractive to those who are really interested and motivated to do it. This is independent of job opportunities being either better or worse than in the past. It is a field for those who love doing it, not for those looking for a lucrative career, or a pathway to some other goal (prestige, political clout, etc.). It is disturbing that the most talented researchers are increasingly supported by soft money. It also continues to be true that balancing a research career and family is impossible when the field is flooded with people who are willing to sacrifice one or the other. However, I believe this is a fact of life that is unlikely to change, and women are more affected by this fact.

I feel that planetary science is a valuable field of study, but that job opportunities for new scientists will be few and far between. The current government administration has made it clear that it does not value scientific study. Given the current political trend it will be difficult for new scientists to find adequate work in planetary science and will most likely have to seek employment in industry or private enterprise. The funding situation will most likely not improve in the near future if the current political influences and organizations remain in control of the American government.

It might have made more sense to specify in the survey whether you were asking about US or international planetary science as a field. I think the long term situation will see the US contribution steadily dropping in importance, with increasing contributions from the EU, Japan, and perhaps china and south America. I project this trend based on changing US federal funding priorities, reduced educational opportunities due to rising costs of secondary education, and increasing national debt.

Like any competitive field, more people enter than can be sustained at the top. Some natural, though not pleasant, attrition is to be expected. My response to question #58 is tempered by this: there are too many people entering the field to get jobs, but this is the way things should be. The high profile of NASA planetary missions makes the funding profile of planetary science volatile for political reasons. This is also unpleasant. However, the prospect of doing science in environments unavailable to the laboratory (e.g. low vacuum) and with instrumentation not practical in other astrophysical studies (e.g. detailed remote sensing or in situ measurements of planetary systems) is what makes planetary science compelling.

The most encouraging sign in the field is the creative way that scientists have learned to support themselves and their research independently of NASA funding. Nonetheless, NASA funding still drives the field and is a barometer of its health. As long as we are viewed favorably by a wide cross-section of the political public we will survive...

The short-term future looks good with lots of exciting missions returning data. However, the momentum has to be maintained if we are to continue as an active community.

Worried about current political atmosphere and possible implications on future funding. Worried that my career could never get started due to a temporary/long-term funding shortage.

There are not enough permanent jobs for new PhD's. It seems like there are many institutions and research specialties where faculty with poor or uninteresting research records are supported at the expense of hiring new PhD's.

As with any field that largely depends on government funding, its fortunes will wax and wane depending on the political climate, but I am very optimistic that planetary science will continue to be a vigorous area of research for the foreseeable future.

Honestly- I think the planetary field is safer for new Ph.D.'s than astronomy. At least the Discovery missions are getting some funding while other pure research programs funded by NASA are being slashed. I do however think that we are between a rock and a hard place as NASA is expecting too much for too little money, especially from those in mission support (I should know; I just quit a mission support job not too long ago).

If you think that you cannot be happy in life with pursuing planetary science, then do so. If other careers are equally appealing, take a long and hard look at them before pursuing planetary science. Good luck!

I am borderline in regards to question 58. While I think that the job prospects are ok, I don't think there is enough funding to go around.

NASA Comments

What can I say? NASA is in complete disarray and it is very difficult to know what to do to be prepared for whatever comes next.

Bureaucracy, reporting requirements, reviewing of proposals & papers, unpredictability of funding, constantly changing rules and procedures, Balkanization of programs (requiring writing ever more proposals to chase diminishing or misrepresented funding opportunities) etc. is making this field almost impossible for a senior researcher (me) and many others to participate in. Non-selection of Discovery proposals, seasonal changes in NASA policies/priorities, inadequacy of alternative (e.g. NSF) funding sources. The "cheaper" part of cheaper-faster-better (which cuts out scientist salaries), and societal changes (unreviewed pre-prints in the web) all hurt.

Planetary science is an exciting and valuable field of study and a national resource, but serious funding problems have existed, causing an unstable, inefficient, and weakening research environment in the USA. NASA R&A basic funding has been too low by a factor of 2-4 for more than a decade. The NASA proposal evaluation and funding process has been very slow for a number of programs in the last 5 years. The lack of quality reviews has consistently been an unaddressed problem by NASA and NSF. A general lack of scientific understanding and vision in managing research funding programs has been evident at NASA and NSF. These are correctable problems but require new directed and sustained commitments by NASA and NSF.

The exploration initiative, as currently conceived, could cripple planetary science for a generation.

There appear to be insufficient funds available to support the existing researchers in planetary science at levels commonly associated with individual NASA research program grants. Grant award amount must increase to reduce the burden on the entire community for writing, reviewing, and managing proposals.

We can argue about the methodology and scientific value of the President's Moon/Mars "Vision," but the net trickle-down effect for planetary science researchers and students--across all fields of planetary science -- is likely to be positive, at least for the immediate future. Let's hope "science" and "basic research" remain important parts of this new Vision...

Ultimately the problem is that things are so dependent upon NASA and factors out of our control--ISS/Shuttle funding overruns can potentially have large negative impacts. But the amount and quality of data coming in from spacecraft and telescopes is really exciting and I think money is the limiting factor rather than the number of interesting problems to work on.

Planetary science as an exploration frontier has great prospects but the current direction in NASA is unsatisfactory.

It's unfortunate that the great success of current/recent missions (Cassini/MER/Stardust, etc.) is not a promise of future support from NASA. I'm worried that the Exploration Initiative and the struggling human spaceflight program will consume resources for the robotic program -- which has provided NASA with incredible amounts of positive exposure to the American public and the world. NASA

should continue to fully support Discovery, New Frontiers, Mars Scouts, and Flagship missions, as well as provide post-mission data analysis funds to fully realize its investment in those missions.

If we ever want to encourage talented young people and expand our discipline, then it all comes down to money. While the Mars programs have seen significant growth in the last 5 years, it is still not enough. DPS should push NASA into doubling the size of MDAP and MFRP in the next 5 years. Also, PG&G should be doubled in that time frame, too. NASA should also establish a new permanent program for studying icy satellites and another one for studying airless bodies. NASA needs a program to move an instrument from development to on-the-shelf technology.

I am concerned about the stability of funding for planetary science. I am afraid that the President's recent directives to NASA to pursue manned space missions to Mars will cause more money to be diverted from planetary astronomy research and into the manned space program. I have already heard of several instances where funding has been withdrawn or grants never awarded and though some of it has been returned, this uncertainty is very discouraging. I am a graduate student and this is making me strongly consider leaving the field, something that I would have though unimaginable 2-3 years ago.

We are the child of NASA and of politics - they made us and they can unmake us. The choice between a broad, scientifically valid, program of scientific research and exploration, and a narrow, technologically focused, lunar mission, was made in the ballot box in November 2004, and the consequences will be significant for planetary science.

NASA is the primary supporter of our field. With the manned program in such a mess and sucking up almost all funding, the future employment prospects for our field are very uncertain - mission timelines being stretched out, budget cutbacks of already approved programs falling most heavily on science, R&A budgets being scaled back without an overall plan. For anyone on soft money (and this includes my status for 30 years) it is very difficult to launch broadly-based or long-term programs. At JPL in particular, it was and is difficult to build up a research group - the funding dries up about the time the group has been assembled...

Planetary science remains an exciting and invigorating field which enjoys wide popular support. It is not clear whether there are any real opportunities outside the realm of the President's Vision statement involving lunar and Martian research. The future of outer-planet exploration, for example, consists of extremely small and highly focused missions, such as Pluto and JUNO, running on tiny budgets. There is also a vast amount of data from missions which are not being mined because of limited funding. I have often criticized NASA's 4F policy regarding missions: fund, fabricate, fly and forget. We often find some of the most intriguing results in the details which take months or years to fathom appropriately.

I think that planetary science is undergoing hard times at the moment with the changes in NASA. The new NASA administrator has improved conditions somewhat. I am hopeful that a new administration will put more emphasis on science and help astronomy/planetary science in the medium term.

The health of the field depends heavily on the amount of money diverted to manned exploration. A significant shift toward expensive manned projects may benefit lunar and perhaps martian exploration,

but will come at the expense of gutting all other areas of planetary science as well as other areas of astrophysics.

The future is not as uncertain as many believe. NASA programs likely will continue.

It all depends on NASA being successful and how often we need to divert funds to things like the vision plan.

I am deeply concerned about the current Moon/Mars exploration emphasis of NASA. This will detract from potential NASA science. One example is the reduction of NASA funds for PI class missions (Discovery?/Explorer?).

In the very short term (say 2-5) years, NASA's emphasis on manned missions to the Moon and Mars will create research needs in those areas and thus opportunities for planetary scientists. Later (say 5-20 years from now), the cost of these programs will divert funding from planetary science. In the longer term (over 20 years), if these manned programs are successful and off-earth bases are established, public interest and thus funding in planetary science may be increased. Also, considering the close relation of the geosciences to planetary science, heightened environmental and resource problems, and increasing public awareness of them, may also enhance opportunities for planetary scientists (e.g., in comparative planetology).

MDAP and MFR are currently dysfunctional as are most of NASA's funding programs. We need to have confidence of sustained (and increasing) funding for planetary science if we have any hope of analyzing the data we are spending billions of dollars on to collect. I am afraid that manned exploration will become the death tax on doing real planetary science.

Research is as exciting as ever. Current administration & NASA leaders don't understand what it takes to run a successful program. I expect a continued gradual decline planetary research in the coming years.

Education Comments

Aside from the ongoing effort at NASA to reduce support for basic science and exploration, its only remotely successful enterprise in the past 35 years, the major problem facing planetary science is its wholesale eviction from the ranks of university astronomy and physics department faculties. The number of secure positions for planetary has declined dramatically, which has greatly stressed the resources of NASA (and to a lesser extent NSF) by putting the burden of senior researcher salaries fully onto R & A/mission program budgets. In addition, those who *have* been hired into teaching positions exist in many cases in small isolated groups or in non-traditional departments such as atmospheric science, geology, or chemistry. The net effect of this is that there are now very few institutions that can effectively teach planetary science, no easy way for interested students to find programs in undergraduate/graduate planetary science, and too little support available (after senior researchers are paid) to fund new students and post-docs.

Planetary Science is always the group that gets cut at the Universities. They want the money you can bring in from various grants available only to planetary science, but you are treated in most departments like a second-class citizen. Cosmologists assume you are a planetary scientist because you aren't as smart as they are or capable of doing cosmology. They don't understand that it is a choice to pursue an area of astronomy that you love. More and more universities are focusing on extra-galactic groups, cosmology, large scale structure, they don't want planetary science groups. They don't see research value in that field. You can't get a tenured faculty position, only research staff.

The planetary science field is getting bigger and bigger and it is hard for one to see what a next researcher is really doing. Computers are very helpful for planetary sciences, but because of that ability of basic physics of young researchers seems to be getting poorer.

Greatest difficulty in a University context is supporting the multi-disciplinary nature.

There need to be more departments which have both astronomy and planetary science it seems to me that the pool for planetary scientists and astronomers is roughly the combined.

I teach only undergraduates and expose them to as real a research environment as I can. Several have gone on to graduate work and I treasure the ongoing relationship I have with these young scientists, but many see what research is like and decide there are easier ways to make a living. Far from thinking of these as "failures", I enjoy their success in other fields, even though I don't see them as often. I encourage my colleagues to work for quality over quantity in their educational efforts.

Many talented students feel that the amount of time is too long and degree of difficulty too high in pursuing a career in Planetary Science, relative to the anticipated rewards and benefits. They see the problem as not one that requires too much work (they are not lazy) but one where the job security is too tenuous and material rewards too small.

Both short and long-term funding uncertainties and employment opportunities are some of the largest problems perceived by students. Many exceptional students switch to other fields rather than continue in planetary science where so many positions are soft money.

Other Comments

I work some in planetary and earth science, but mostly in gravitational wave astronomy.

Growing, but too slowly in UK.

All of the statements in the above questionnaire are meant to refer to conditions in Israel, where I am familiar with the situation.

You continually referred to "grants," which, so far as I am concerned have no real deliverables. I deal primarily with hardware contracts for which there are deliverables. Generally the nature of grants and contracts is very different in terms of who can be employed (few student opportunities), how the proposals are written and how much they cost (e.g., \$500,000 is not unusual for proposal production costs), the stresses of meeting hardware deadlines, etc. You need to at least have put one question in to separate the grant chasers from the hardware chasers.

Hi. I am Simon Mitton (Chair LOC DPS 2005 Cambridge) I am a very different animal to those the survey will see in the field. I have responded to this survey as best I can. My institution is a Cambridge college. It is important to note that the DPS structure and mission means that DPS is really great an enabling entrepreneurial and self-employed authors / writers / tv script writers (I scripted 26 programs on space science in 1999 - 2001) to benefit first hand from being welcomed as equal colleagues by the professional community. This is in marked contrast to scientific societies outside the astronomy family (the American Chemical Society seems to have a saber-toothed tiger as the gate-keeper for media).

Much more funding needed.

Planetary science should begin to honestly evaluate the work of Immanuel Velikovsky, especially with regard to the growing body of evidence that bacteria live in the upper atmosphere of Venus. This research, in my opinion, will impact on emerging diseases on earth. See: <http://www.ebicom.net/~rsfl/vel/iamds.htm> Somebody should get bold enough to wean us of the idea of runaway-greenhouse-effects as an explanation for the high atmospheric temperature of the lower Venusian atmosphere. Venus, as a new planet, is a much more interesting place.

As a trained planetary scientist/astronomer, I am appalled at how much power managers/engineers who know nothing about the field can exert over people in my position. I have been blacklisted from working on flight projects by upstart morons who know nothing about the scientific goals of the missions they work on. They threaten me with firing if I serve on a NASA review panel ("It's not in your job description."). They pull in >100 K per year, whether or not a particular mission succeeds or fails, and we get stuck working as their virtual slaves. It's a case of the horse leading the cart, and it explains in great measure why we have had so many failures in the unmanned NASA program these past 5 years.

DPS Comments

We need to increase the support of students to attend meetings such as DPS and LPSC.

I worry that DPS is not adequately focusing on the rapid rise of detection/characterization of extrasolar planets. This field is dominated by non-DPS astronomers who would both enhance & benefit from a DPS meeting. But if the DPS focuses too closely on only our solar system the organization runs the risk of becoming something of a dinosaur. The extraolar planets session in Cambridge was packed, standing room only. But within the extrasolar planets community the most important meetings are topical, special meetings. The DPS is not seen as a premier place to present results. I encourage the DPS to actively seek to become the forum for extrasolar planetary science. This would serve both communities well.

Q67. What should be the TOP priority of the DPS over the next 5 years?

DPS should address more directly the serious NASA and NSF funding problems noted in Question 63 that cause an unstable, inefficient, and weakening research environment for planetary science.

Lobbying Congress and the Administration to fund space science.

Protecting R&A funding from being poached by manned spaceflight. I love that if there's NASA skullduggery afoot, DPS is always there prepared to do battle.

Seek to represent the field in the most broad way possible, as you are doing in this survey, and not by the few members who might be particularly vocal on specific topics.

Ensuring that the highest priority science outlined in the Decadal Survey gets implemented (either as part of, or in spite of, the "Vision").

Sell out to Hollywood and PC game manufacturers. Copyright "planetary" and collect royalties from Star Trek reruns. All kidding aside, some people involved in the Voyager missions used to point out that the whole mission cost was negligible compared to what the average family spends on entertainment, with the great appeal of the "unknown" and the "mystery" of space there must be a way to tap into that for the benefit of research.

The DPS is most useful in simply having its annual meeting. Despite many other important issues (e.g., helping to train the next generation of scientists), facilitating the exchange of scientific ideas has to remain the top priority of the DPS.

In addition to all the usual things that DPS does and does well (e.g., the DPS meeting etc.), I think the next 5 years will require an unusually large amount of lobbying of NASA and Congress by the DPS. The DPS needs to ensure that NASA and Congress understand the crucial importance of fundamental research in NASA's mission. This is particularly important given the recent chaos at NASA (removing the research/mission firewall, threatening to cancel missions like Voyager, trying to cancel OPR R&A program, and the smaller-scale chaos of grant-money delays to individual researchers). These developments suggest that NASA does not understand that science and understanding must be what drives space exploration.

The DPS should continue to encourage and enable scientific interchange between its members and the training of the next generation of scientists.

To make sure that an ongoing *program* of planetary exploration is funded by NASA and the NSF Continuing to monitor NASA and US government activities related to planetary sciences and providing a unified voice in expressing concerns and providing positive feedback.

Find the right balance between DPS meeting content and those of the AGU, LPSC, etc., in order to maintain both attendance and breadth of coverage. Perhaps the DPS will evolve to be the place for the generalist. That is OK if there are enough such people.

Lobby strongly for Discovery and Scout programs, and adequate funding for them.

Helping to provide a stable funding base for Planetary Scientists.

Make sure that NASA provides a steady level of funding for planetary science missions and that it not all go to pay for Exploration or Space Shuttle problems.

Representing planetary science professionals and providing independent input regarding NSF/NASA programs in planetary science.

Working with NASA to provide more consistent funding over time. Perhaps the ESA model of continuous, fixed funding over time would work better. Of course, Congress would probably not sit still for this, and the pitfall is that it could easily forgo increases for inflation over time, reducing the actual value and participants.

Organizing the annual meeting.

Fixing the NASA grants management process.

Reestablish planetary science as a priority within NASA.

Increase public awareness of the excitement and importance of planetary astronomy and solar system exploration. Provide stable funding for planetary research.

No reduction in funding and that promised funds are received in a timely manner.

Assisting NASA to make well-informed choices when it comes to planetary exploration, including supporting the existing infra-structure of planetary scientists in this country.

Supporting manned missions to Moon and Mars despite JPL self-interested opposition.

1) Critical evaluation of future human resource requirements in the field (performed by independent entity) 2) Advocacy for larger per-grant awards to reduce burden on community & funding agencies 3) 3 parallel sessions @ annual mtg.

Keep up the good work, try to fix funding problems.

Advocate for continued funding of research programs and missions. Fix the proposal system so that notifications are made and awards are sent to institutions in a timely matter.

Policing the implementation of the solar system decadal survey and undertaking the ground work necessary to support the activities of the next solar system decadal survey committee.

Accomplishing the goals set in the last decadal review of Astronomy and Astrophysics. Getting younger people into the field.

Redirecting NASA to put more resources into science instead of sending humans to the moon. To provide a forum for the planetary astronomy community to discuss and work together on research topics. The DPS should also provide information on activities at the funding research agencies.

Lobbying to improve government policy and coordination and monitoring of Planetary Science programs with NASA and NSF.

Advocating planetary science with the government.

DPS structure inhibits continuity - consistent meetings & following thru political action. DPS Chair serving just 1 yr dysfunctional. Having local organizers run mtgs reinventing wheel ridiculous. (Camb. mtg logistics disastrous.) Change by-laws.

Speaking out on behalf of the planetary science community on major issues and problems in a timely manner. And continuing the annual meeting.

We need to stabilize the funding situation. We should be much more active in D.C., working with the AAS to ensure those making laws and budgets are aware of the excitement in what we do. Too often legislators are our former "C" students...

Excellence in planetary science and exploration.

Trying to get NASA back on track as a scientific and engineering organization rather and keep the present administration from turning it into just another political instrument of the military and industrial complex.

Advocating for science to the public and governments.

Reestablish 'firewall' at NASA so space science funding cannot be raided by other NASA programs.

Encourage teaching of evolution in public schools.

Representing the planetary scientists of the USA (and elsewhere as appropriate), helping to stabilize the funding situation, and ensuring that planetary science has a continued vitality even with NASA uncertainty.

#1 for me *for DPS* is to encourage talented students (college & K-12) to enter the field. #1 for planetary science is to communicate our discoveries to the public.

Promoting viable scientific alternatives to manned exploration of Mars.

Push NASA to reform R&A funding to enable a sustainable career for planetary science researchers with a reasonable number of grants.

Advocating continued need for unmanned exploration to further scientific discovery. Secondary: Improving grant system at NASA.

Although I am neither an US citizen nor living in the US, I believe the top priority of the DPS should be to get/maintain influence on US government decisions about the future of planetary science. It may be a good idea for DPS members to vote about central issues so that the DPS community speaks with one voice.

Keep the funding coming...

Ensuring the future of planetary science and spacecraft missions through influencing congress where possible - DPS is doing this well now and should continue its efforts.

I feel that the role of obtaining relevant laboratory data to interpret and understand observations should be greatly increases. This will greatly improve the value of the missions and allow the mission objectives to be modified in the light of the greatest understanding.

The top priority for the DPS should be maintaining a high-level profile with government legislative offices to voice the concerns of its membership regarding research and planetary mission funding levels and directions.

Provide an exciting forum for the latest results in planetary science. While lobbying can be useful, I am concerned that it not represent positions with which many or even some members disagree.

Keeping on top of the funding situation at NASA. Fixing the current problems with award notification/sending out funds, lobbying for more funding for basic research.

Keep NASA interested in scientific research.

DPS's lobbying efforts have largely been done through NASA. It seems the issues are far more general than that and that contact needs to be done more with the White House in general -- and unfortunately -- with Congress. DPS has tried for too long to maintain a position of being a good NASA/planetary citizen (working within the system) but the controlling decisions are made outside NASA. DPS needs to push for a better balance between new missions and science support within the missions that are flown. We would be better off with fewer missions that each concentrate more on science support -- both in planning and in mission data analysis.

Get NASA to re-focus on one of its more successful activities: Solar System exploration via spacecraft, orbital & groundbased astronomy, and fundamental research..

Support a vigorous program of robotic planetary exploration.

Annual meetings.

Pressure NASA to clean up its grant system! It is a disgrace. Well-defined annual grant cycles, homogeneous procedures across programs, and a real commitment to support the scientific community rather than continually jerking us around.

Generating career long funding possibilities.

Lobbying and shaping government policy.

Taking charge in flight projects. If we cannot do the task in the allocated budget, DON'T DO IT! Grossly overworking a select few, then firing them between projects is not a viable way conducting business.

Helping to fix the abysmal funding situation, both the delays in notification and in receiving funding.

Public outreach to foster a more friendly environment for planetary sciences and researchers.

Bring the study of extrasolar planets into its mandate.

Emphasis to the US administration and NASA that robotic space missions return far more than other types.

The DPS is doing an excellent job of balancing a large number of different priorities. No shift of emphasis is needed.

Promote government and private funding for planetary science.

The quality of annual meetings.

Promote science - research..

Increase the time and activities devoted to the young researchers, push the fresh PhD to spend a post-doc period outside USA.

The organization of the International Planetary Monitoring Service.

New missions.

Promote planetary sciences.

Trying to influence US federal government in such ways that NASA funding will be increased to meet the needs of human and robotic space exploration as well as basic science.

Integrating planetary science into the new vision.

Education of younger members (at the entering Ph.D. level or even before) in the realities of making a living in this field. I think too few new Ph.D.'s really understand what they are getting into in terms of supporting themselves & making a name.

Lobby to maintain an adequate level of funding to keep the science healthy, and reinstitute the research "firewall" so that money is not funneled off to build LEO space junk.

Making sure members in all sub-disciplines are funded and have jobs.

Unfortunately, it is probably lobbying to make sure that federal support for planetary science and research isn't eroded to the point of seriously injuring the field.

Promote solid scientific research.

Diversify in age, diversify in gender and diversify in minorities - open the door of the committees to very young scientists (<35 years old) - Solve the issue of volatile funding and lack of clear consensus in NASA space exploration program.

NASA has already started on a process of immense upheaval that will probably last the next 5 years. The DPS should make every effort to ensure that a robust and broad-based planetary exploration program continues at NASA.

Lobby for outer solar system missions. The inner planets (which is my area) are being excessively studied at the expense of other research areas.

Ensuring that NASA does not gut all planetary science and astrophysics research.

Any services provided by the DPS should reflect the (nowadays) international nature of its membership. It should aim to facilitate, or even subsidize, more international co-operation between US and non-US groups.

Making sure sufficient research funds are channeled into planetary science to meet the goals set forth in the decadal survey.

The top priority is to ensure NASA's commitment to planetary exploration through: competitively and directed robotic missions data analysis programs.

Planetary science education and public outreach.

In addition to regular meetings, make sure NASA keeps funding basic planetary science. 1) Facilitating communication within the community, primarily through the annual meeting. 2) Increasing public support for planetary science through E&PO. 3) Monitoring government funding and administration of planetary science, and advocating for improvement in same. 4) Supporting the establishment of young scientists in their careers.

Fighting NASA budget cuts.

Exploration of Europa, Titan, Mars.

DPS should push NASA into doubling the size of MDAP, MFRP and PG&G in the next 5 years. NASA should also establish a new permanent program for studying icy satellites and another one for studying airless bodies.

Ensuring that funding is maintained and stable so that young planetary astronomers are willing to remain in the field. If the funding situation does not improve I feel there will be a dearth of young planetary astronomers, as we will pursue careers elsewhere.

Preparing the US to maintain a leadership role in space exploration in the face of upcoming stiff competition.

Education, scholastic and general public. Advocacy for ground-based research. Not all research funds should be tied up in a limited number of space-based projects.

Funding the basic research, government policy, and public outreach (which in turn can drive government policy and base research funding).

Govt policy, role of basic science in NASA funding profiles.

Educating the public, congress, etc. on the value of science and math education, not just for DPS-related science, but for our culture as a whole. Try to assess job opportunities and funding and relate encouragement of young people to the job and funds availability. Work with NASA and NSF to improve grant review, notification, and disbursement of funds.

Trying to preserve some balance in NASA's exploration program, which will be increasingly near-term focused, lunar-focused, technology-focused. Perhaps more ties with NSF.

Work with House and Senate to defeat President G W Bush's plan to send astronauts back to the Moon and on to Mars. Robotic instruments, devices, and missions are far more effective. End support of Space Station (pork barrel funding). Limit the use of astronauts in space, abolish Space Shuttle, as NASA chief has just proposed.

Increasing the number of missions and stabilizing grant funding with longer grants.

Keep up the good work. Aim for balanced NASA program (human and automated).

1) Continuing to provide an opportunity for a relatively small multidisciplinary gathering of scientists where the scientists can form linkages across disciplines and research topics. 2) Supporting education and outreach in planetary science at all levels of formal and informal education.

Greater international attendance at Meetings.

Ensure that the science portion of the NASA budget is allocated based on open competition and peer review rather than political mandates to create or maintain jobs at certain institutions. A more ambitious goal is to advocate this same process for Exploration.

It is incumbent upon the DPS to sell **DIRECTLY TO CONGRESS** the value and excitement of planetary science and exploration. The budgetary pressures continue to grow, and only a well-articulated and publicly supported program has any chance of survival. Coordination with public interest groups such as the Planetary Society will be key in this effort.

Broaden its outlook to more fully embrace studies of extrasolar planets & planet formation. Continuing to press NASA for a healthy robotic exploration program and stable research funding, including firewall between the manned and scientific programs. Don't let them ignore the decadal review.

To work with the funding agencies to establish **stable** funding for individual/small group grants the field, and to persuade them stick to those commitments. Even if this means holding back some funds

for unexpected shortfalls from Congress, the uncertainty is a major factor in limiting the productivity of established researchers, and the attractiveness of the field to young researchers. For space missions, and support for them, establishing stable funding is probably too much to ask for. But the programs that issue investigator grants should be operated to allow a fair competition from year to year.

Informing the public about the continuing, exciting science being done, and using whatever leverage that popular support can provide us to try increasing the number of interplanetary and earth-based exploration missions and funding opportunities available through NASA and the NSF.

Protecting planetary science from a transformed NASA that is on a mission of exploration, to the detriment of everything else. A shuttle replacement will be costly and can't be allowed to impact science. Programs like Discovery and New Frontiers must be continued with healthy increases to cover inflation and creeping NASA requirements. The R&A funding must continue to grow, particularly in key basic areas such as Planetary Astronomy, Planetary Geology and Geophysics, and Planetary Atmospheres.

Making sure that unmanned exploration does not get derailed by the costs of the new manned vehicle.

Making sure NASA/NSF/etc. adequately support funding for R&D and make sure they understand and support the Decadal Report.

Getting NASA to perform in a timely manner -- to value the time and effort of the planetary science community in writing and reviewing grants -- and to realize that the support of basic research today is fundamental to growing the science questions for spaceflight in the future.

Increasing the participation of under-represented minorities in planetary science.

Continue to conduct outstanding meetings. Second priority: monitor NASA grant activities.

Figuring out NASA's agenda and fitting into it. Follow the money.

I believe the DPS should continue to promote good science as its top priority. Beyond supporting meetings and encouraging the interchange of ideas, it needs to continue to coordinate group lobbying to ensure that science funding is an appropriate priority for our government. I believe the DPS and AAS are doing a good job at this and hope they will continue their efforts.

Keeping an eye on NASA and the Administration so that they can't gut planetary easily.

Ensuring the continuation of science missions (multiple small and occasional large) AND increasing the % of funding for analysis of data from past and on-going missions.

Get more funding.

Keeping NASA planetary science support (missions, funding, etc.) from being cannibalized by the crewed space program.

This is a hard question to answer. The maintaining of the field is important and so DPS's role in the area of policy is very important. However, education and public outreach is very important. Our education system is in a crisis situation and since Planetary Science benefits from federal funds, I think we should be doing more to use the popularity of space science to promote a greater role in education by our membership.

Preserving research programs and doing what it can to support stability in the field.

The TOP priority is to hold an excellent annual meeting with adequate time and space for scientific exchange and interaction with other planetary scientists.

NASA/NSF and other funding for individual astronomers and post-docs/graduate students.
NASA/NSF and other funding for large projects.

Keeping the field alive in the US.

Listening to the membership. Running good meetings. Providing a forum for professional issues.

Excellent meetings - work to ensure appropriate space & facilities Fairness/Wiseness in supporting membership: working with NASA on grant support problems, lobbying on Discovery cost caps, etc. Leadership for education in Planetary Science - separate from Astronomy Education. Plan for change as the US DPS becomes just one player in the increasingly international field. Maintain breadth? Find a niche? Plan for change as ExtraSolar Planets come into their own. We have effectively relinquished this field to astrophysicists - reclaim it!

Be a strong advocate for excellent science. In other words, don't be always looking back at the good old days.

Guiding the direction of future planetary science research and providing a strong forum for its dissemination amongst the community.

Make sure science doesn't get thrown to the wayside by the president's vision for space exploration (PVSE). strategies:

- * E/PO communicating interesting scientific results, emphasizing how there's no way manned space flight could have produced these results.

- * lobbying to support pure science.

- * secretly support a Michael Meyers style investigation showing how the PVSE is a front for funding defense contractors. also highlight how scientists will lose out as funds are redirected from research to manned space flight support. don't write these points off as too confrontational. we are dealing with an administration which is advocating intelligent design curricula and still disputing the evidence for global warming.

I think the DPS is doing a pretty good job on most fronts. Government lobbying and activism continues to be a necessary evil. However, I live in Puerto Rico and have no Congressional

representation. Getting problems with the grants programs and mission structure fixed should remain a high priority. The annual meeting is getting too big to remain as a double (not triple) session, primarily oral talk forum. I think we have to face this and develop alternatives to the barrage of 5-minute talks which serve little purpose.

Being a watchdog on the NASA grants programs.

Ensure that adequate research funds are made available to young scientists. Lobby for fewer but bigger (and longer!) grants.

Decadal survey work in concert with national priorities. Rather than preparing the decadal surveys in a vacuum to then be surprised when national priorities change due to political pressure, we should work more closely with political leaders to become co-informed of priorities.

We spend the US tax payer's dollars, with politicians elected as buyer representatives. These are the people we need to interface with efficiently to keep high-level priorities on a consistent and fruitful track.

The meetings.

Encouraging the government to fund a wide range of programs, without concentrating too much in one area (such as Mars).

To enhance the capability of immediate release of planetary science data obtained from NASA sponsored missions through the advancement of computer information system technology and spacecraft design improvements. To help bring about the merging of Planetary Science with Exo- and Astrobiology, to increase the emphasis on finding and characterizing earthlike planets, and to increase the number of planetary science missions designed to directly detect primitive organisms on worlds within the Solar System (emphasizing Mars, Europa, Titan, and the upper atmospheric layers of Venus).

Watchdog of government affairs pertaining to Planetary Science. Alerting members of actions to be taken to preserve/enhance Planetary Science funding/programs by NASA.

Obtain increase in funding (to support research NOT hardware) for this field and/or decrease number of Ph.D.'s being produced.

Convincing the public that there is value in planetary studies should be the first priority.

Education and public outreach with the goal of combating the poor level of science understanding among students and the public in general, particularly in the U.S.

Maintain its current excellent job!

Ensuring that a reasonable fraction of whatever grandiose schemes are hatched in Washington is spent on science. Combating 'non-scientific' thinking at all levels of government and in the public media. This involves public education and the exposure to the excitement of planetary science.

Ease up communication in oral talks and Poster form (enough time and space to read them) at the upcoming meetings.

Act as a voice of the international planetary science community in lobbying agencies.

To communicate the importance of planetary science to the general public and to our public servants. The important points to emphasize are (1) the enormous technological achievements, (2) the even more significant intellectual and cultural impact of our growing knowledge of planetary systems, and (3) the practical value of planetary science for all of us in our role as custodians of planet Earth.

Ensure productive annual meetings without triple sessions and have more meetings abroad in non-US and non-European countries.

The top priority of the DPS in the next 5 years should be to make strong connections with government officials. The current American representatives do not have the required scientific background to make sound decisions when it comes to budget decisions. The DPS can provide a valued service to help educate officials and representatives so that better decisions can be made when it comes to such things as funding for planetary missions, research grants for NASA and NSF, or university education monies. I think we need to be much more active in this area.

Continued funding to analyze data and train new scientists.

Defend NASA science funding from budget cuts or reallocation to exploration.

Maintaining cohesion within the planetary community - encouraging participation.

Sustained funding for analyzing the data we already have, as well as support of new scout missions.

Increase funding levels in planetary sciences and speed up the proposal review process time.

Fixing problems relating to funding and the proposal process, including both spacecraft and R&A programs. Although I've been only slightly affected so far, many people I know have wasted significant amounts of time and have missed opportunities when dealing with grant-related delays.

Fighting for our chunk of money – it will be eaten away at from one side by the manned space program and from another by large astronomy projects like JWST and possibly TPF.

Continuing to serve as a mechanism for ensuring that good planetary science is done and presented - that includes ensuring that funding agencies act responsibly toward scientist (especially soft-money scientists) in the field, and scientists have avenues to disperse their research such as at the meetings. You leave no space for other comments, so: I am changing jobs in a couple of months, and my answers would be significantly different if asked then.

providing input to govt policy on solar system exploration and additional coordination and monitoring of NASA/NSF planetary science programs to make sure R&A funding stays at a healthy level.

Please see previous short answer response regarding extrasolar planets.

Create security for entering astronomers.

To work with Federal policy makers to ensure that the value of planetary science to this country and to the world is properly appreciated. Our field depends up government funding and the DPS should take a leadership role in making the case that planetary science is excellent value for taxpayers.