Policy & Chair Responsibilities

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Outline

- Evaluate Departmental Mission and Vision Statements vis-à-vis Diversity
- Identify diversity related Issues

  - from student perspective

  - from faculty perspective
- Prioritize suggested remedies
- Identify the key Players
- Develop and Implement a Plan
- Integrate activities with others
- Some practices that appear to work

Evaluation of Mission and Vision Statements

- Does Diversity appear in them?
- If so, how? If not, why not?
- What about at the university level?
- Does the University value diversity?
- Is there resonance between statements at the University and Departmental Levels?

Vision/Mission

- Build concensus on goals

  short term

  long term
- Identify elements that will facilitate reaching these goals
- **Integrate diversity into departmental vision**

Identify diversity related Issues

- Global level
- National level
- University level
- Departmental level

Global and national level are easier to identify as there are surveys and statistics available. Self evaluation is harder but necessary.

Why the need for diversity in Physics?

A look at statistics collected by

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Statistical Research Center
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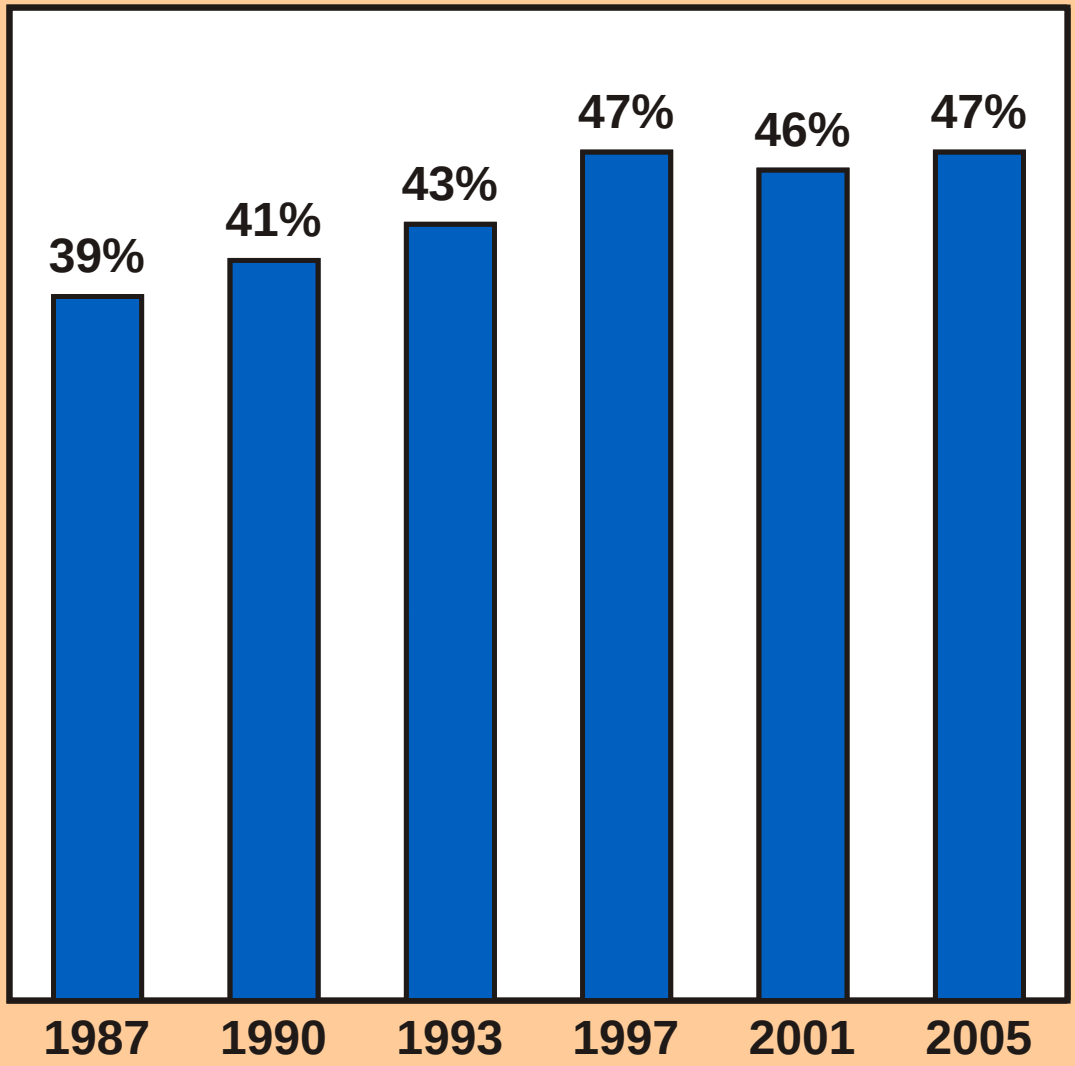
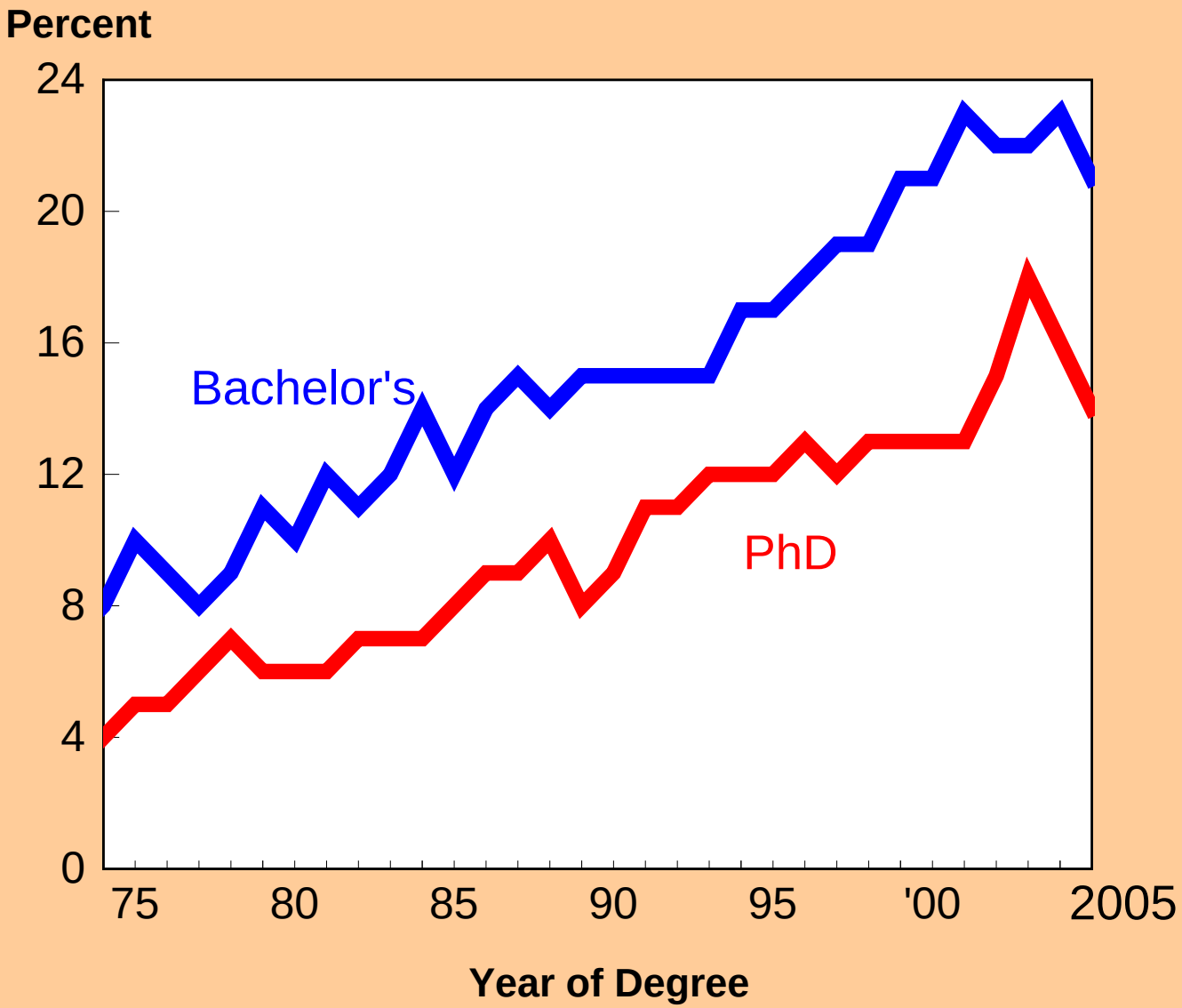
Girls as a percentage of high school physics students



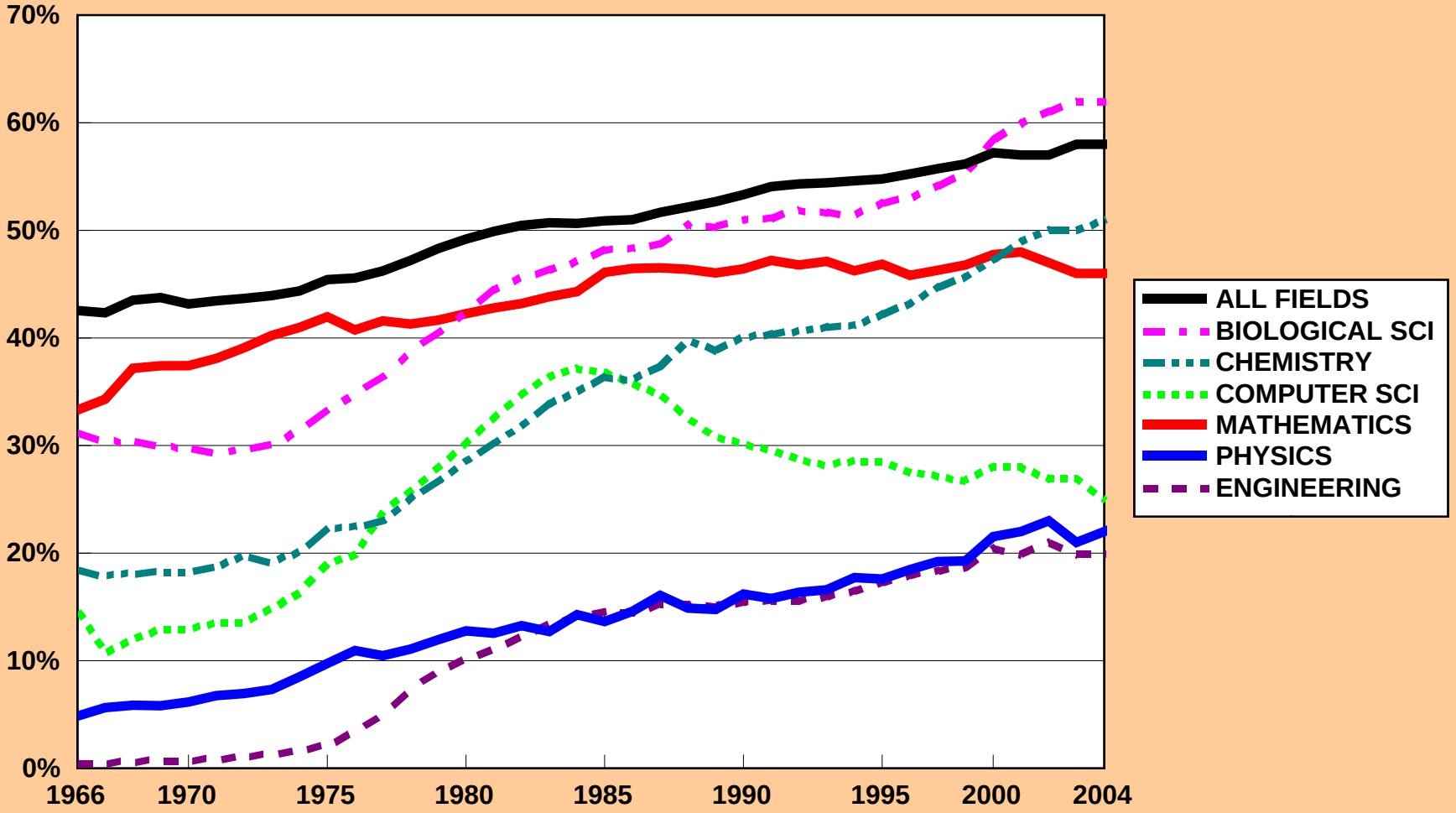
Source: AIP High School Physics Teacher Surveys

Percent of physics bachelor's and PhDs earned by women, 1975 to 2005.



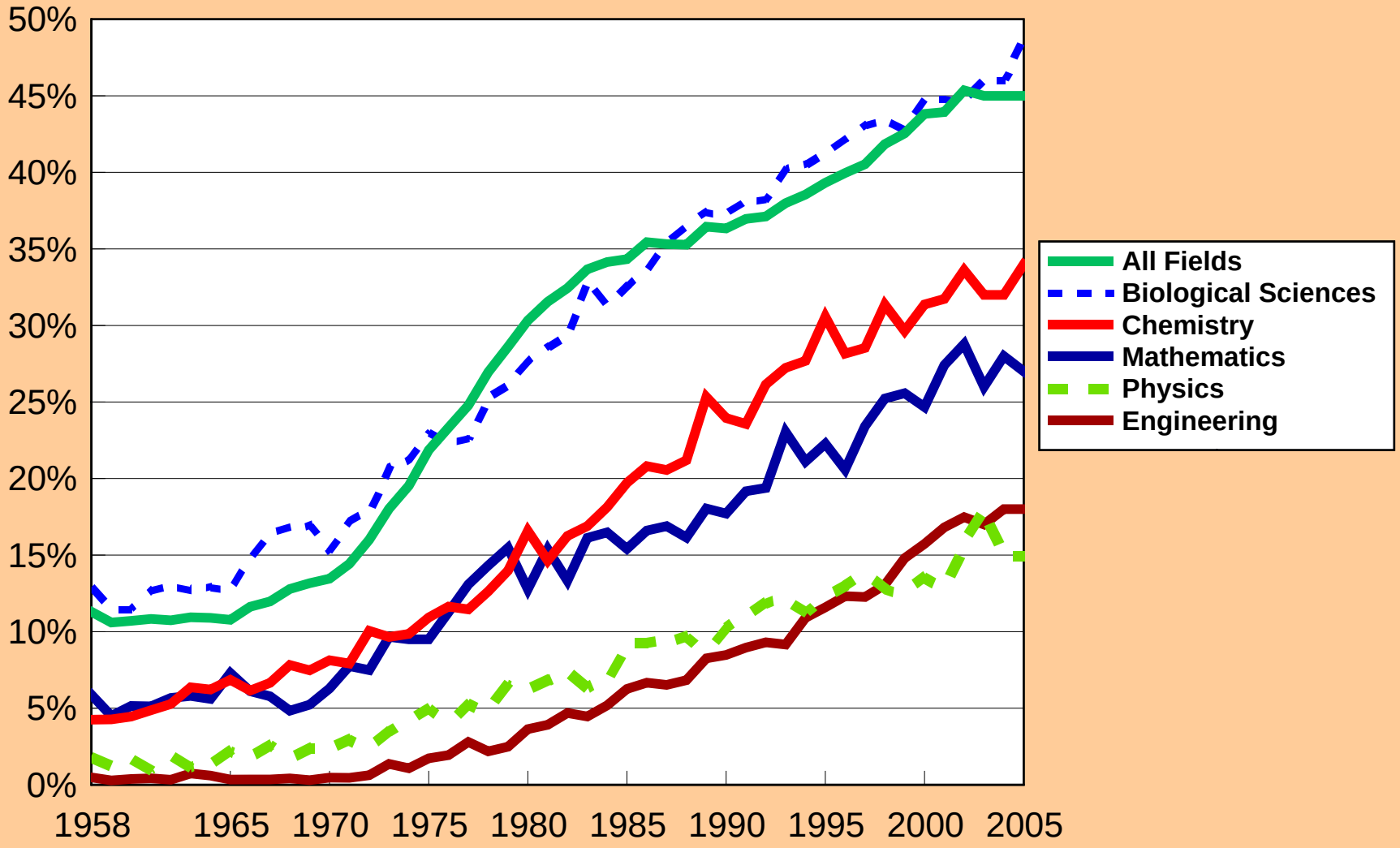
AIP Statistical Research Center: Enrollments and Degrees Survey.

Percent of Bachelor's Degrees Earned by Women in Selected Fields, 1966-2004.



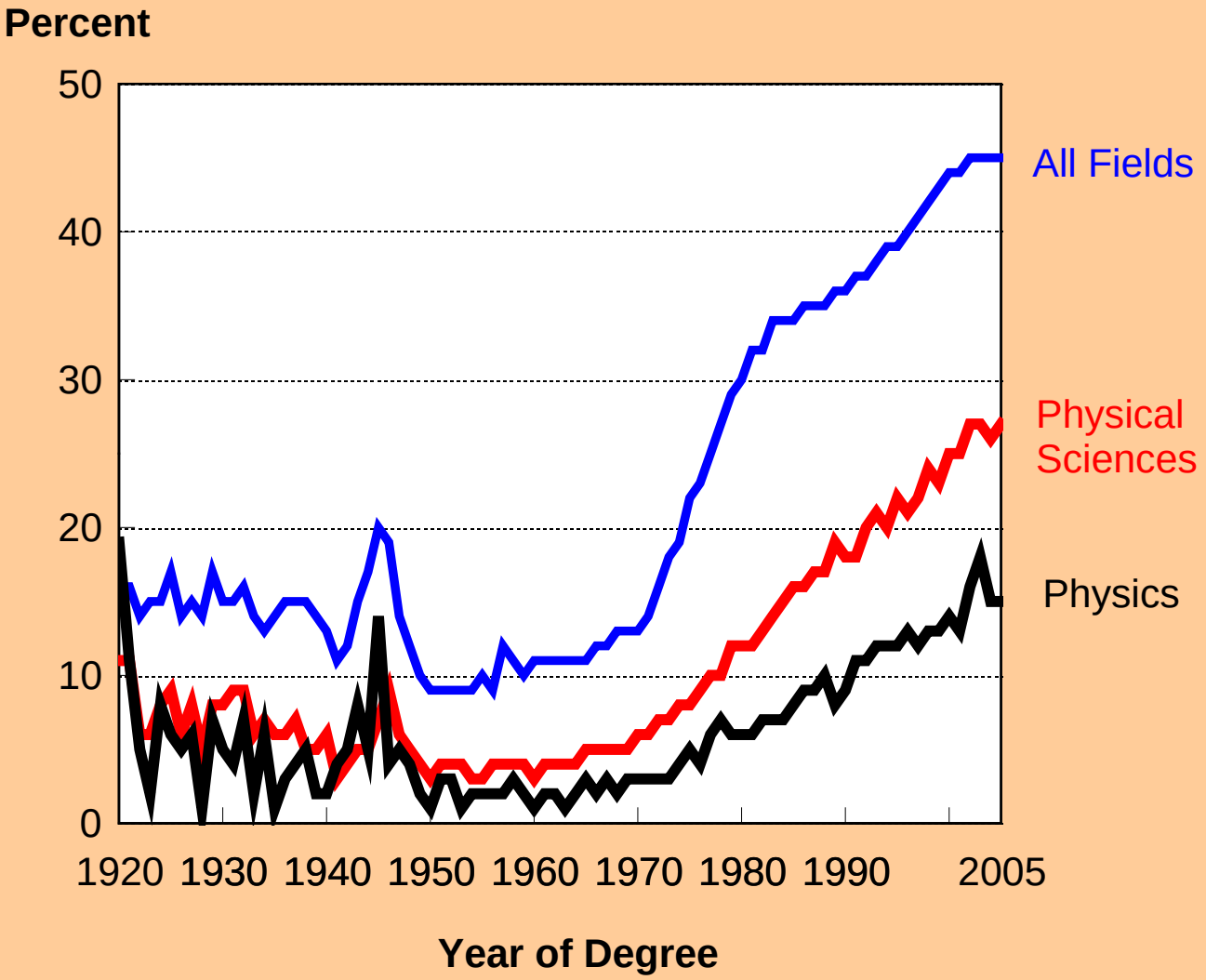
Source: National Center for Education Statistics. Data for Academic Year 1999 were not available.
Compiled by AIP Statistical Research Center.

Percent of PhDs earned by women in selected fields, 1958-2005



National Science Foundation. Data compiled by AIP Statistical Research Center.

Percent of PhDs awarded to women in selected fields, 1920-2005.



National Research Council, National Opinion Research Center , and National Science Foundation. Data compiled by AIP Statistical Research Center.

Teachers and Faculty (2005-2006)

31% of high school physics teachers are women.

17% of astronomy faculty are women.

13% of physics faculty are women.

11% of physics department chairs are women.

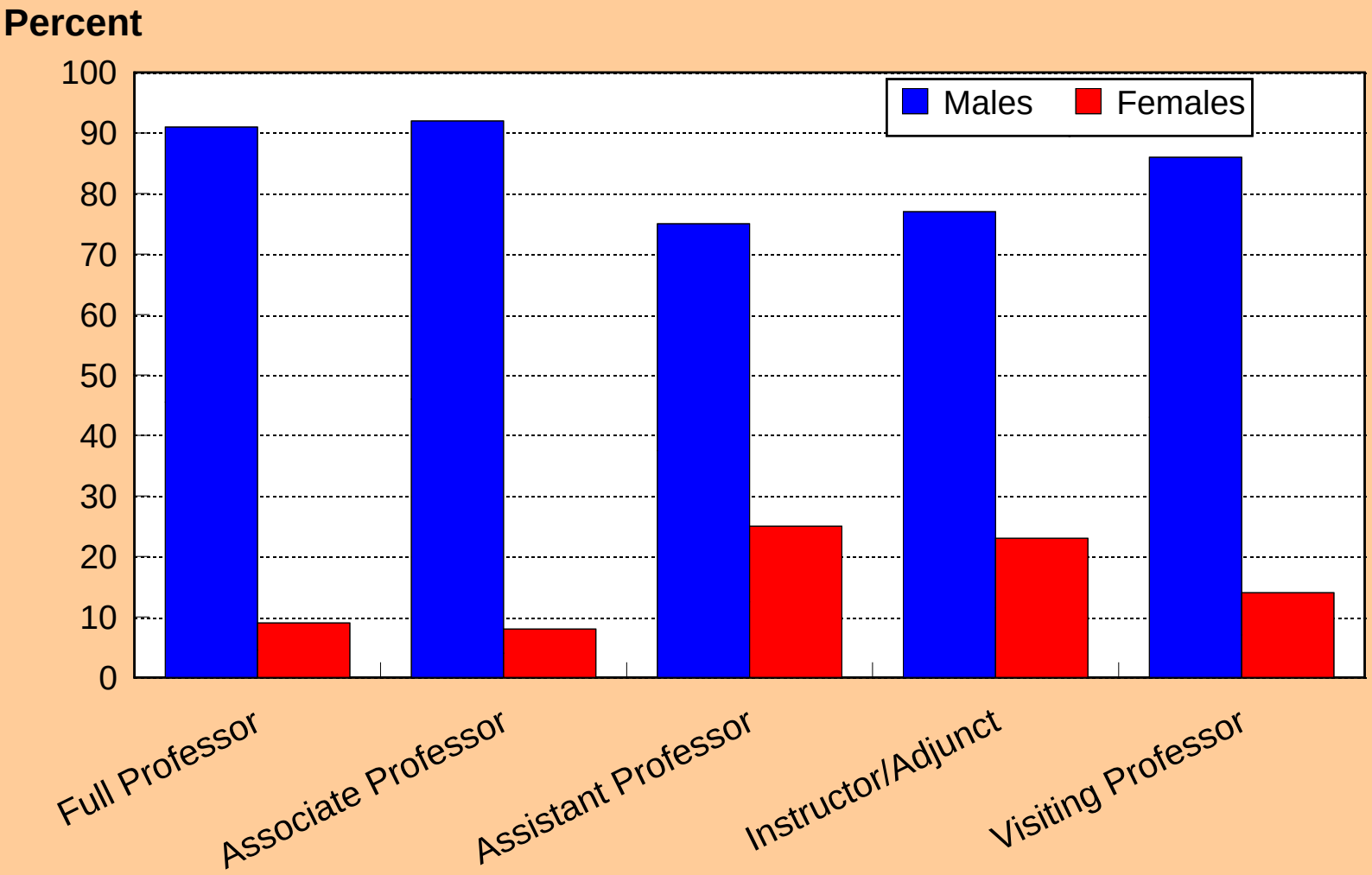
Source: AIP Statistical Research Center.

Percent of faculty positions in physics held by women.

	1998	2002	2006
Academic Rank			
Full Professor	3	5	6
Associate Prof.	10	11	14
Assistant Prof.	17	16	17
Instructor/Adjunct	N/A	16	19
Other ranks	13	15	12
Type of Department			
PhD	6	7	10
Master's	9	13	16
Bachelor's	11	14	19
OVERALL	**8**	**10**	**13**

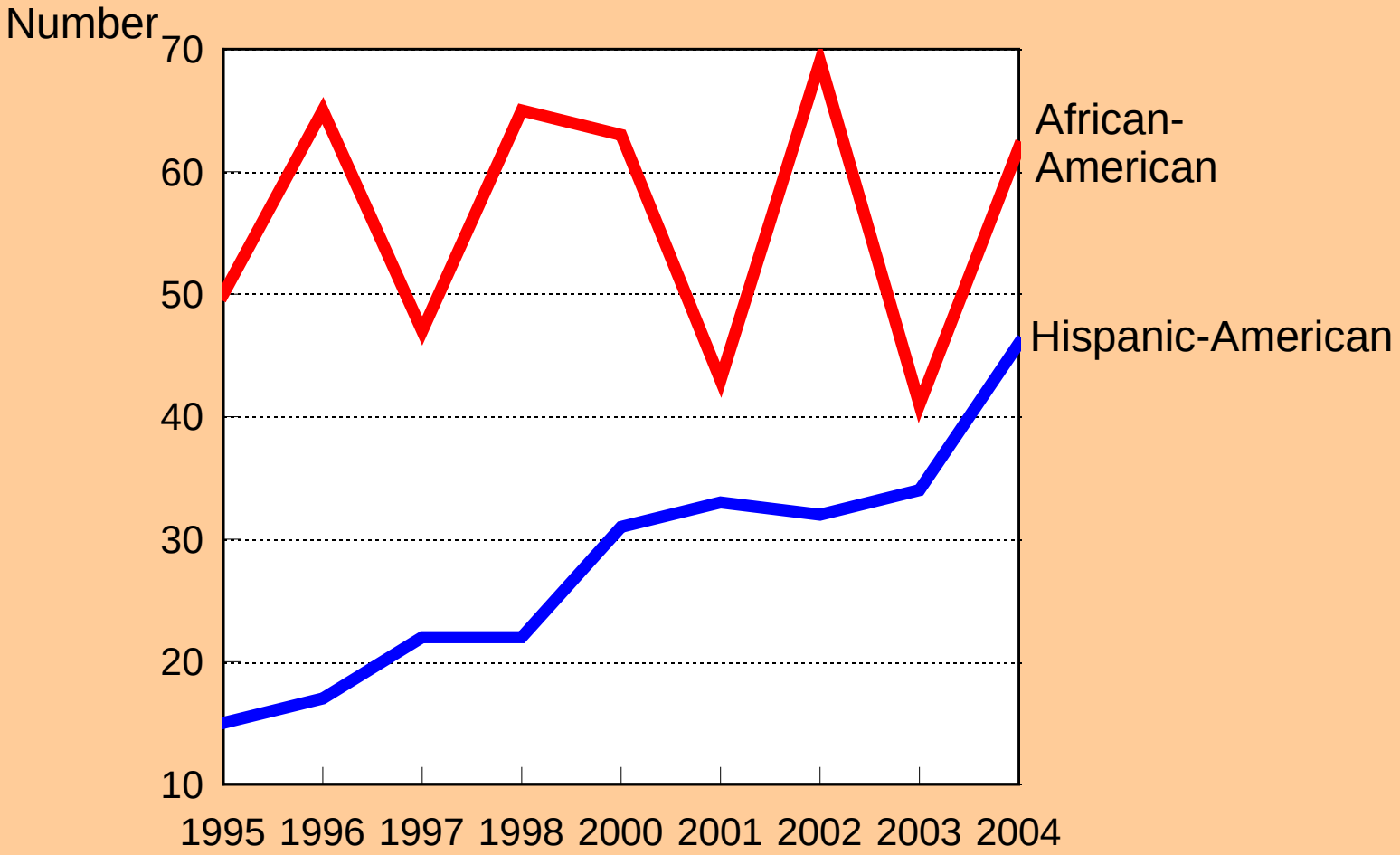
AIP Statistical Research Center, 2006 Academic Workforce Survey.

Current positions of new physics faculty by gender, 2006



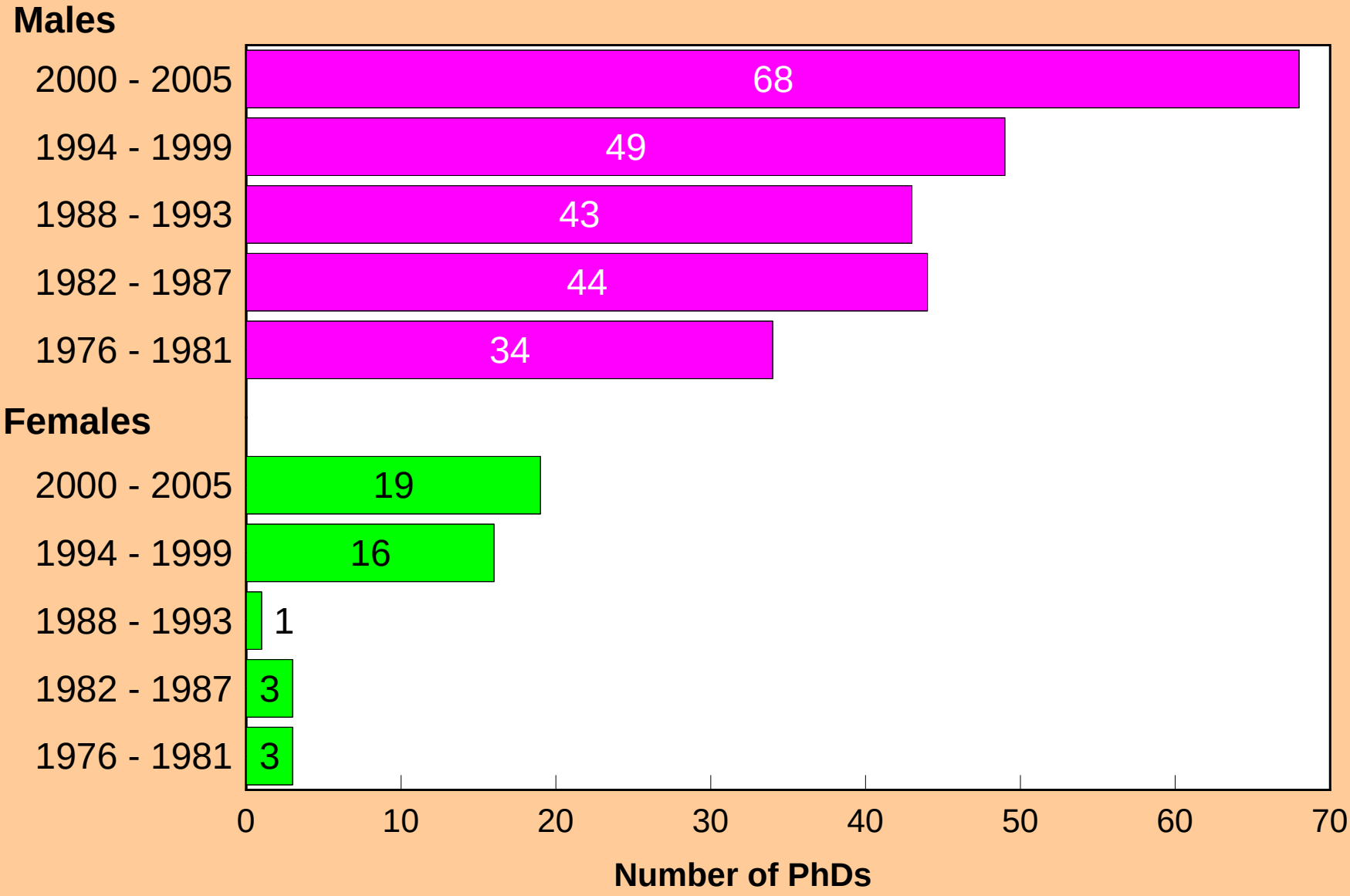
AIP Statistical Research Center, 2006 Academic Workforce Survey.

Hispanic and African-American women receiving physics bachelor's degrees



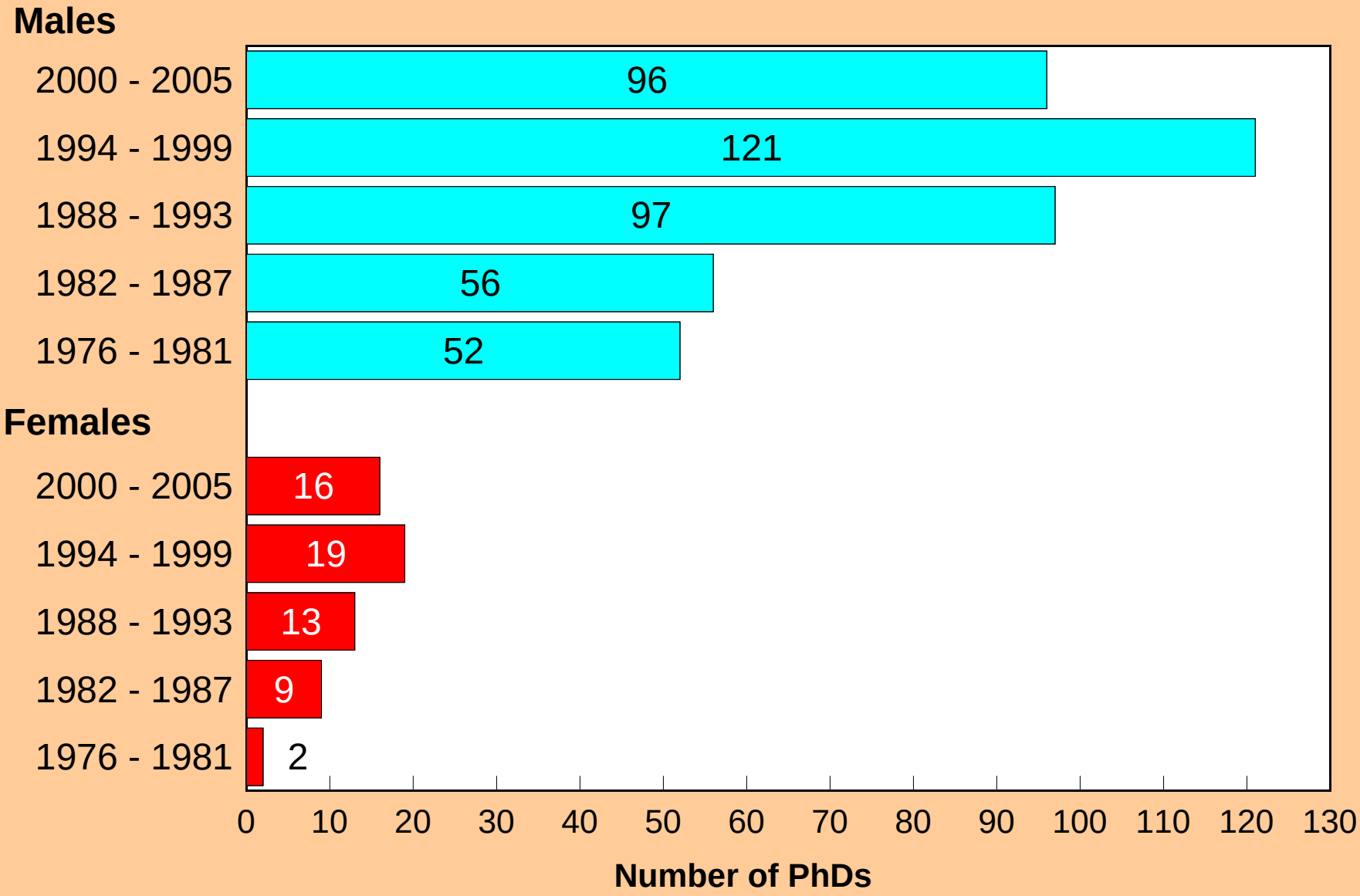
National Center for Education Statistics. Data for academic year 1999 not available.
Compiled by AIP Statistical Research Center.

Number of Physics PhDs earned by African American Males and Females, 1976-2005.



Source: AIP Statistical Research Center analyzed data collected by the National Science Foundation.

Number of Physics PhDs earned by Hispanic American Males and Females, 1976-2005.



Source: AIP Statistical Research Center analyzed data collected by the National Science Foundation.

Some Rationale for Gender Differences in STEM areas :

- Male oriented departments
- Paucity of mentoring, for girls/women
- Issues with pedagogy
- Lack of role models for some
- Unclear future prospects
- Balancing career and family
- Individuality vs collective thinking
- Chilly climate freezes entry

Do differences wither away for senior women in academia?

- Some insights from a recent survey of senior female faculty members in Physics

  This was arranged through the Committee on the Status of Women in Physics. Professor Kathy Levin, U of Chicago and TSR carried it out with the help of Rachel Ivy of American Institute for Physics.
- Excerpts from Beyond Bias: Survey by NAS Committee

The Study of Senior Women in Physics

- The survey for senior women physicists was designed to assess the needs of tenured female faculty. The survey was distributed to participants in the *2005 APS Professional Skills Development Workshop for Women Physicists* and to women Fellows of APS. They were asked to complete the survey anonymously and to forward it to other faculty members in the United States.
- The survey was developed by Kathy Levin, Professor of Physics at the University of Chicago; and Talat S. Rahman, University Distinguished Professor of Physics at Kansas State University. Input on the development of the survey was provided by the American Physical Society's Committee for the Status of Women in Physics.
- The survey was emailed to participants on February 22, 2006. A follow-up email was sent two weeks later on March 8, 2006. The data were collected by the Statistical Research Center of the American Institute of Physics from February 22, 2006 to May 4, 2006, using an exclusively web-based questionnaire.

Position and Status

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Ninety-seven participants completed the survey. Almost all of the respondents are tenured and most are full professors.

Rank		Status	
Full Professor	85%	Tenured	98%
Associate Professor	11%	Emeritus	2%
Other	3%		

Year of PhD and Promotion

- Respondents received tenure in an average of ten years after earning their PhD.
- Respondents who reported being full professors were promoted to their current position in an average of fourteen years after receiving their PhD.
- Full professors, who responded to this survey, were promoted to their current position in an average of four years after earning tenure.
- The median year for earning a PhD is 1984 for these respondents.

Citations

Most respondents, about 70%, reported having more than 100 citations associated with their most highly cited paper.

National Awards

- About 30% of respondents reported not earning any national awards.
- 37% of respondents reported earning one or two national awards.
- 35% of respondents reported earning three or more national awards.

Teaching Awards

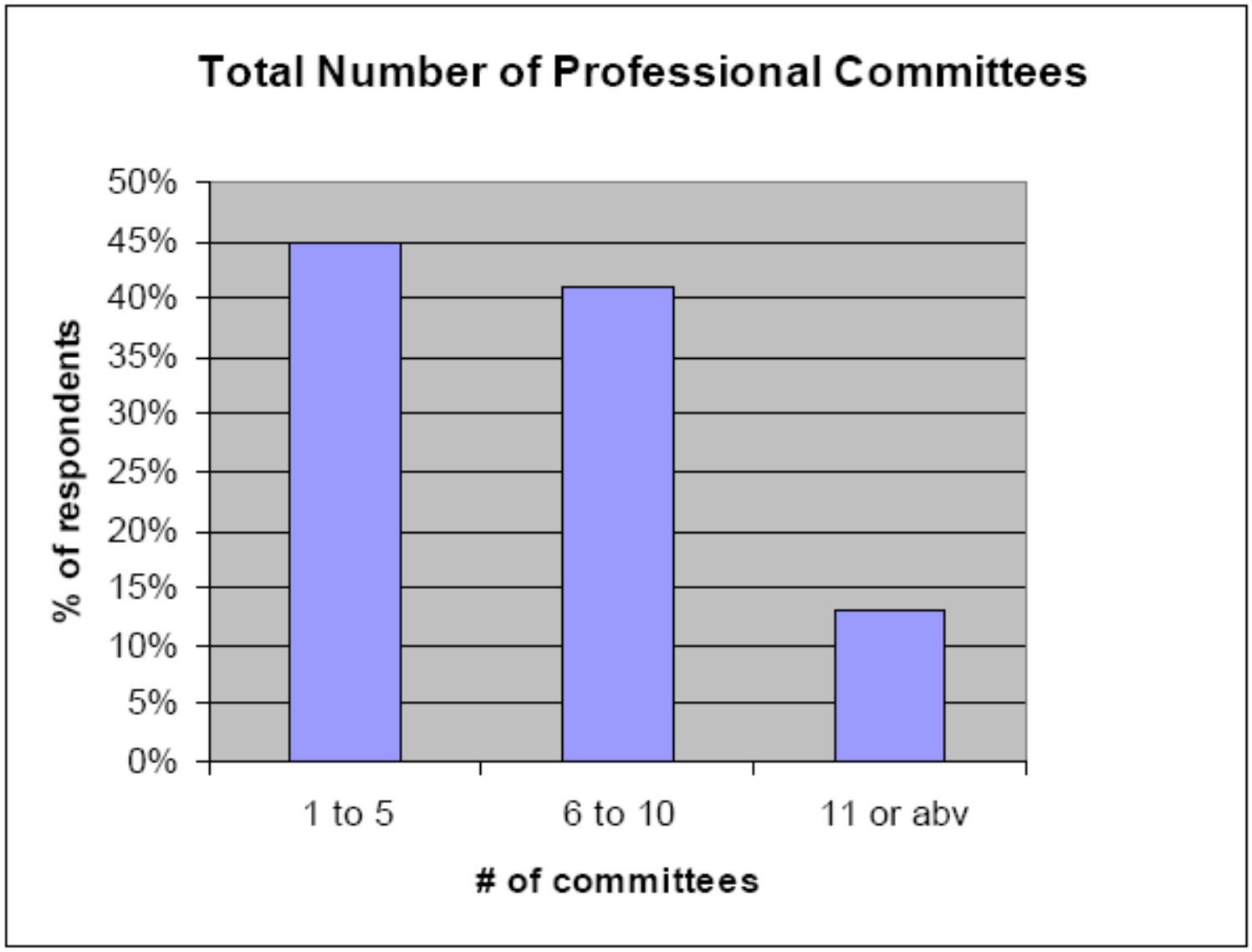
- About 65% of respondents reported not earning any teaching awards.
- About 20% of respondents reported earning one teaching award.
- About 10% of respondents reported earning two teaching awards.
- Only about 5% of respondents reported earning three or more teaching awards

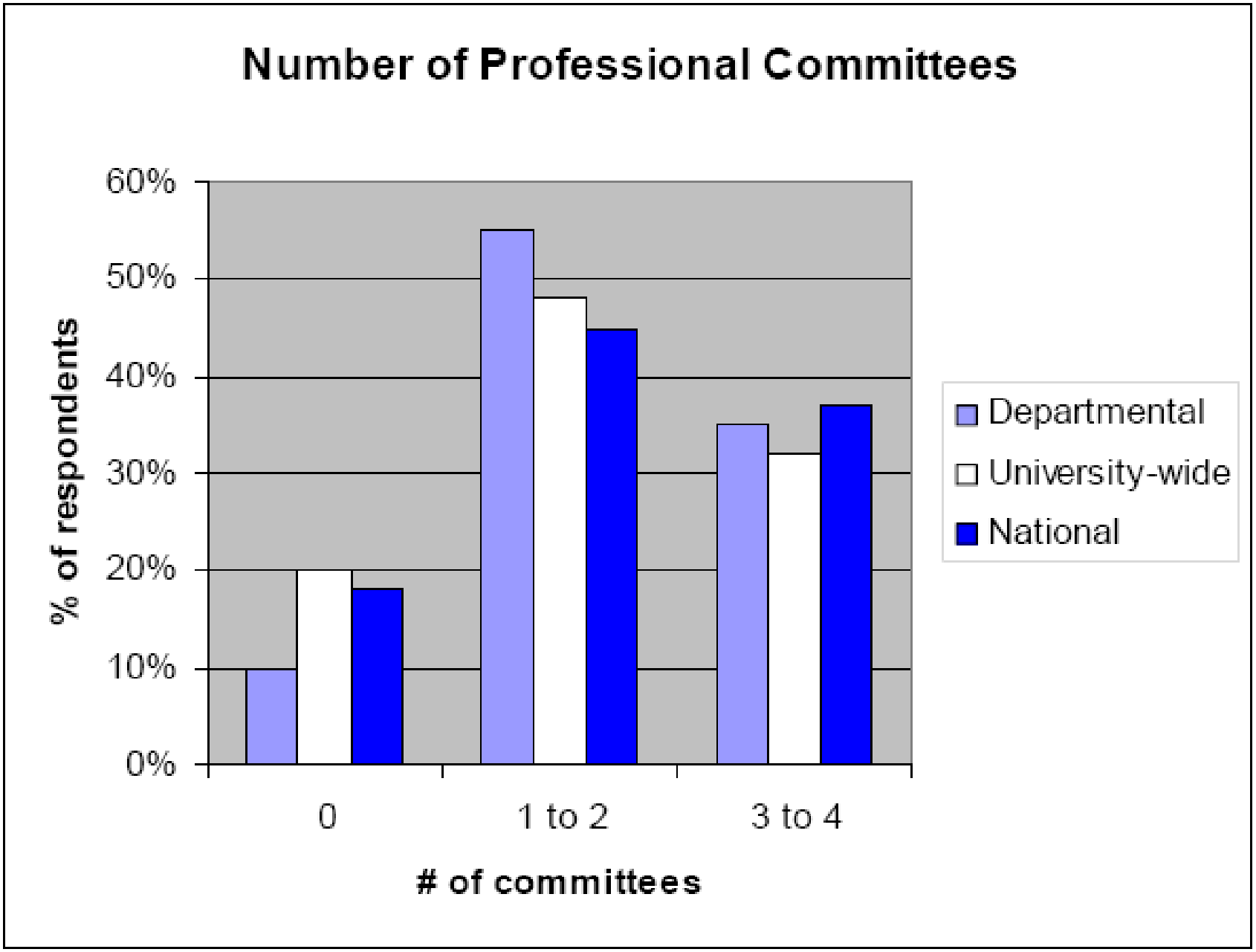
Funding

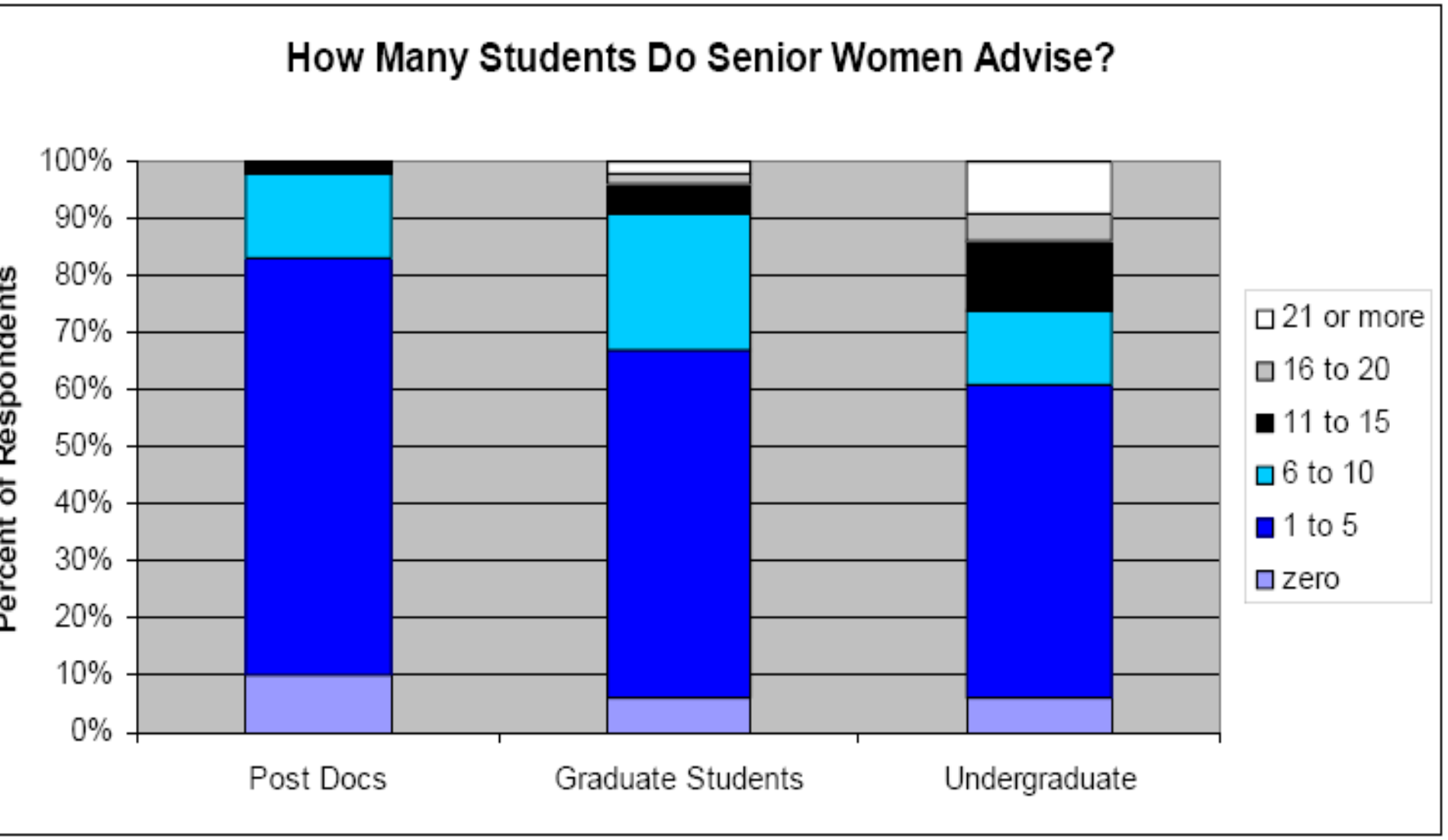
- About 15% of respondents reported not receiving funds from any funding agency.
- 65% of respondents reported receiving funds from one (36%) or two (29%) funding agencies.

Advising

- During the last five years, most respondents reported that they advised between one and five students in each classification (post docs, graduate students, and undergraduate students).
- More than 50% of respondents reported advising approximately one to five students in each classification.
- For each classification, about 10% of respondents or less reported not advising any students.
- 26% of respondents reported advising more than ten undergraduate students over the past five years. Fewer than 10% of respondents reported advising more than 10 post docs or graduate students.

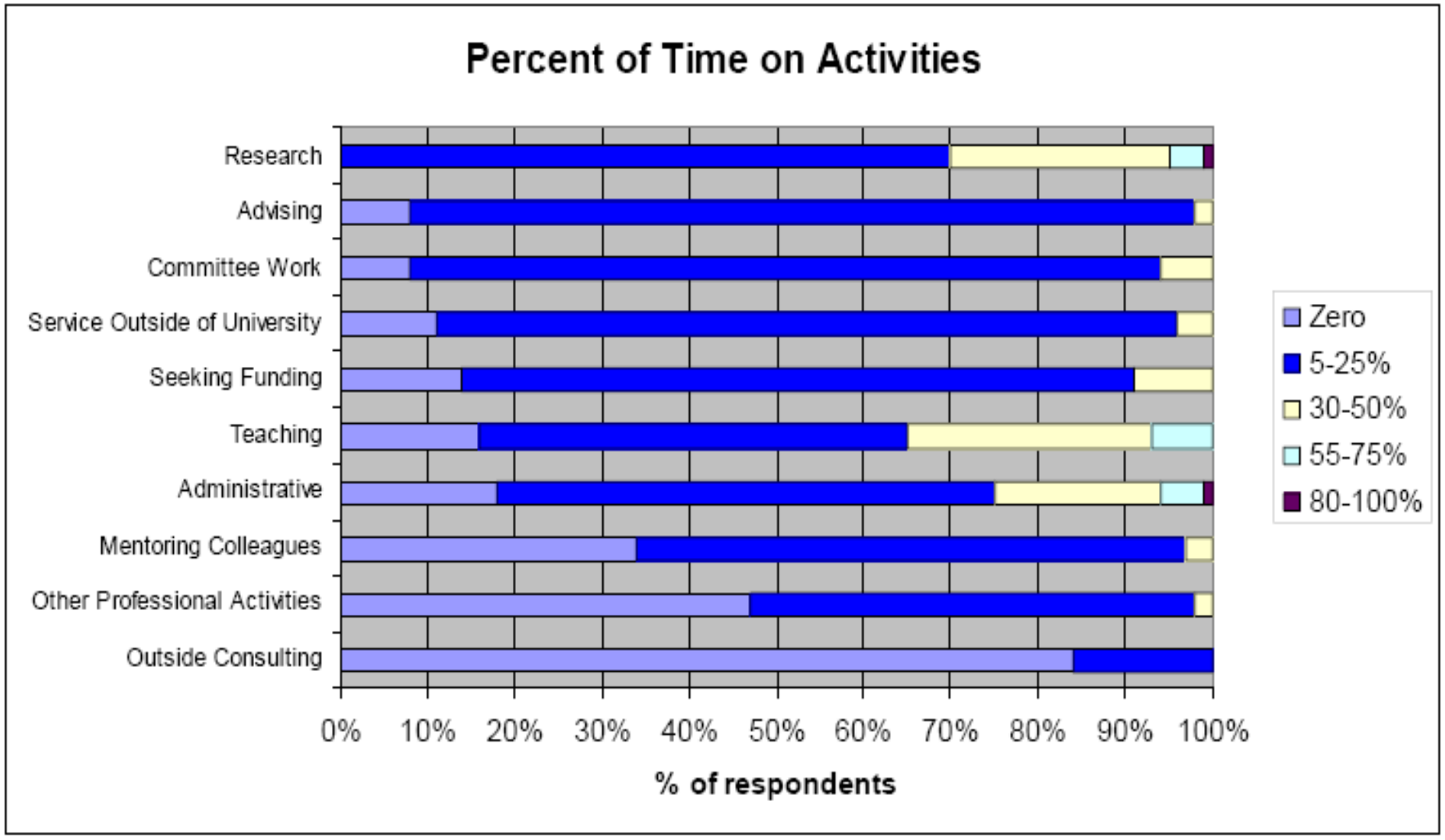

Total Number of Professional Committees
% of respondents
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
1 to 5
6 to 10
11 or abv
# of committees


Number of Professional Committees
60%
50%
40%
30%
20%
10%
0%
% of respondents
0
1 to 2
3 to 4
# of committees
Departmental
University-wide
National


How Many Students Do Senior Women Advise?
Percent of Respondents
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Post Docs
Graduate Students
Undergraduate
21 or more
16 to 20
11 to 15
6 to 10
1 to 5
zero

How Senior Women Spend Their Time

- Most spend more than 30% of their time on research, teaching, and administrative work.
- Thirty percent of respondents reported spending more than 30% of their time on research. A small amount, less than 5%, reported spending more than 50% of their time on research.
- About 35% of respondents reported spending more than 30% of their time teaching.
- 25% of respondents reported spending more than 30% of their time doing administrative work.
- Less than 10% of respondents reported spending more than 30% of their time on other activities.

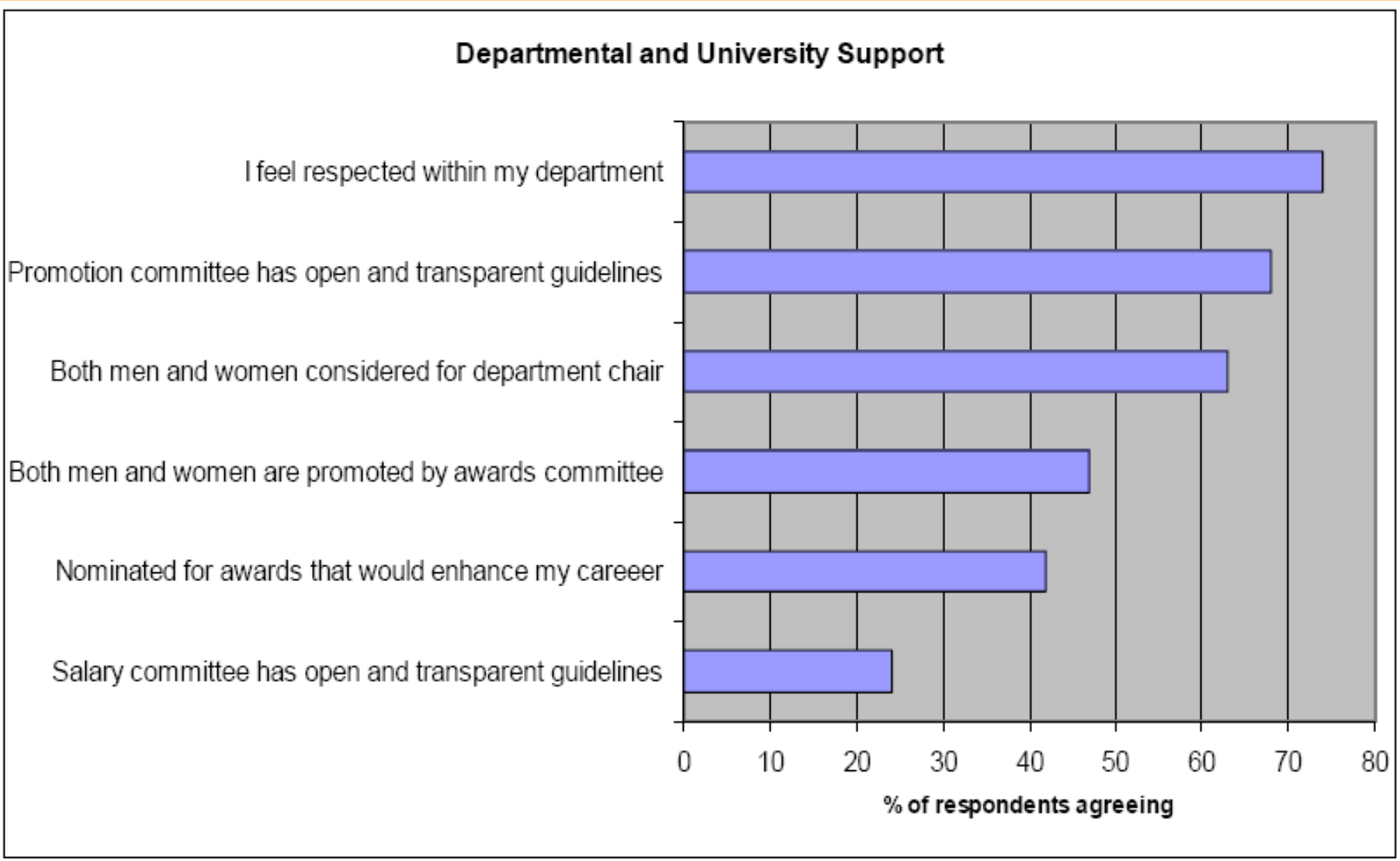

Percent of Time on Activities
Research
Advising
Committee Work
Service Outside of University
Seeking Funding
Teaching
Administrative
Mentoring Colleagues
Other Professional Activities
Outside Consulting
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
% of respondents
Zero
5-25%
30-50%
55-75%
80-100%

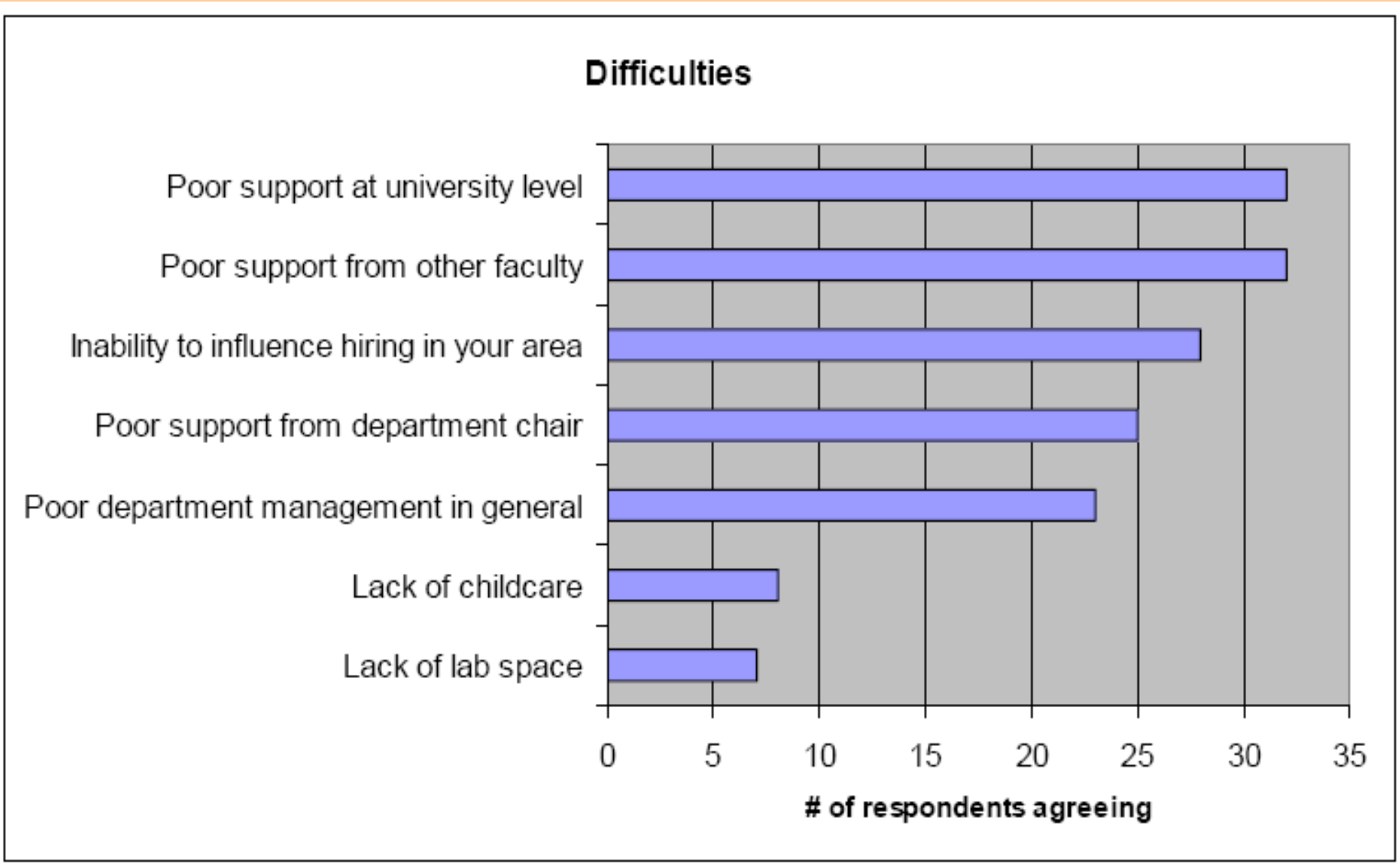
Career Satisfaction

- Overall, respondents seem to be satisfied with the opportunities available to them at their universities.
- About 60% of the respondents or more reported that space allotment, grant support, their number of talks, and salary are commensurate with their performance.
- *Less than 40% of respondents agreed that laboratory support was commensurate with their performance.* About one-third said that the question did not apply to them.

University and Departmental Support

- Most respondents seem satisfied with the support that they are getting from their universities and departments.
- More than 60% of respondents reported that they feel respected in their department, that they are aware of promotion guidelines, and that they believe both men and women are considered for department chair.
- *About 45% of respondents reported that both men and women are promoted by awards committees and that they are nominated for awards that would enhance their career.*
- *Only about 25% of respondents reported that the salary committee has open and apparent guidelines.* About one-fourth said that the question did not apply to them.


Departmental and University Support
I feel respected within my department
Promotion committee has open and transparent guidelines
Both men and women considered for department chair
Both men and women are promoted by awards committee
Nominated for awards that would enhance my careeer
Salary committee has open and transparent guidelines
0
10
20
30
40
50
60
70
80
% of respondents agreeing


Difficulties
Poor support at university level
Poor support from other faculty
Inability to influence hiring in your area
Poor support from department chair
Poor department management in general
Lack of childcare
Lack of lab space
0
5
10
15
20
25
30
35
# of respondents agreeing

Open-Ended Responses to:

- What factors have contributed most to your success in physics?
- What Aspirations do you have for Teaching, Research, and Leadership?
- What factors, if any, do you think are Barriers for your Attainment of these Goals?
- Additional Comments

What Factors Have Contributed Most to Your Success in Physics?

- Persistence, doing a good job, knowing people.
- good problems, good students, good collaborators
- Hard work and determination

- Physics acumen, clear thinker, taste in physics, good intuition regarding interesting experiments, leadership abilities, good organizational ability, and ability to get along with my colleagues.

- My love to be original and creative in research, my strong commitment to high quality research, and some supports from my senior colleagues elsewhere

- Great colleagues, collaborators, and mentors. Support from spouse to pursue my career.

- What a difficult question! I often think I am very lucky to have ended up where I am (tenured full professor at top university). But then I think, well, why not? I'm smart, I've worked hard, I had some good ideas, I'm articulate. One time I forced myself to write down my contributions to the field, and it ended up being a pretty impressive list. But it's very hard for me to think that way, maybe because there is so little external validation. I tend to get compliments on my leadership ability, or speaking skills, but rarely on my research, so it's easy to feel deficient. So, to answer your question: some native talent, hard work, a spouse who fully shares the child-rearing responsibilities.

- The ability to survive on my own
- I have had enormous support from my male mentors, all of whom are not at my institution. I have had just a handful of female mentors and they are all deans (and not physicists).
- support from faculty members as a student, mentoring by senior faculty, persistence bordering on stubbornness
- Stubbornness! Refusal to let others influence career decisions. Good mentors
- [Removed]. For my career overall, most of my progress has been due to persistence as much as preparation
- I have been able to overcome difficult obstacles in my work environment-well prepared for this after growing up with 5 brothers.
- scientists outside my department/ university who value my work

- Persistence. Keeping a finger on the pulse of current research. Taking advantage of other avenues of funding- I have received considerable funding for teaching-related activities, and recognition for it within the University and state.
- aggressiveness, good luck and hard work, good mentoring received in the past, good connections in and outside of my subfield now
- Many years as a childless untenured professor in an [removed] institution with low teaching and committee responsibilities, combined with supportive mentors and participation in a spectacularly productive experiment.
- I like what I do, I was in a very supportive Department, I have a supportive husband, I had a supportive home environment before I was married, I had very good child support personnel at home and I worked with very enlightened people in all my physics activities.
- Ability to meet people with confidence.

What Aspirations do you have for Teaching, Research, and Leadership?

1. I have the highest aspirations for my career. I want my research to have a major impact on my field, and I want to be recognized for it. I would like to be elected a member of the National Academy of Science. I would also like my university to update its physics teaching, to attract and interest more students. On the leadership front, I am doing well, but would like to be considered not simply because I am a woman (which is probably how I got my foot in many doors). I would like to be respected for what I have done and what I am.
2. I have been working on [removed] science since mid 80s. Problems and approaches I chose to learn as a student/postdoc are all 'hot subjects' today. My goal is to educate a generation of young physicists who can think and compute, and more importantly, being able to find new things. My research goal for the next 5-10 years is to bridge the gap [description of research removed]. Regarding leadership, I am a good group leader in my own research group, supervising [number removed] students/postdocs. Maybe someday, I would want to have influence on national science policy making process.
3. I would like to inspire female students to participate more in Physics. I would like to see funding agencies create programs that help these women in much larger numbers to move forward in their careers. I have worked on committees to promote salary equity. At our institution women in Science and Technology have a 25% salary gap.

What factors, if any, do you think are barriers for your attainment of these goals?

1. In large part, the fact that I don't want to work 60 hours a week or travel as much as I used to. I have a young child and I want to spend my evenings and weekends with him and my husband. In addition, the sociology of the field I work in is changing and I am not really happy about the changes. I am much more interested in university matters and undergraduate students than I ever expected to be, and I am doing a good job with the things I'm involved with and enjoyed them and feel as if I am making a difference, but these activities are not valued as much as research production is.
2. Hard to say. Compared to my physicist peers, I am not as pushy or self-promotional. It is hard to do the chest-beating thing (and it's less acceptable from women anyway). I think my career has always lagged behind where it might have been - you never know why. I suspect being female is part of it. It cuts both ways: it may get your foot in the door, but even before (and after) that, it lowers people's expectations and evaluations of your work.

1. These are my goals because the long term climate in my department has prevented me from having goals that depend on others. I can achieve my two goals on my own. I could do better physics if other faculty in my department would interact with me. My collaborators are all physicists outside of my department.
2. My department and my colleagues in the department are not supportive. I am from [remove] and older than [removed] all [the] males in my department (for family reasons, I became a tenure track assistant professor at the age of [older than someone who went straight through pipeline]).
3. Some awards and honors on my resume would help to accomplish my long term objectives in leadership. I am a very solid physicist, but never paid much attention to get myself nominated for anything. [Time frame removed] I somehow realized for the first time that 'honor' is a good thing to have and talked to colleagues and former mentors. So, I was elected as an APS fellow. Even if I never get anything, I personally do not mind much since I am very happy with what I am working on. However, getting awards will help me to have more influence on students (especially on female students). My department/college should do something for me, but they don't. I think they are already very overwhelmed with other issues. BTW, I came to US as a foreign student which contributes to my no-award status. I am a US citizen now.

- The barriers I faced have eased considerably. I am now accepted, recognized, and even awarded, but over my lifetime the biggest barrier was the kind of low expectation still encountered in some places, as with the soon-to-be ex-president of Harvard.

- I am harassed and discriminated against by some members of my department and some university administrators. It takes a significant amount of my time to construct ways to work around this.

- Poor maintenance of lab space. I am ignored when I voice concerns in this area. Poor staff support.

- My considerations are different than for many women, probably. I made the shift to [subfield removed], and my colleagues are not sure how to evaluate me.

- I think that a woman has to spend more time promoting her work than men do in physics, and there are many people who will try to get in her way. I haven't had the time to really pursue this aspect of my career, but I plan to in the next few years.

- The local atmosphere inside my department is damaging to women. Men here don't let me speak up at faculty meetings, don't value my insights on prospective hires, undermine my recruitment of students into my research group (which has a financial cost, because students in our department get their first year paid for by the department. When I recruit students from other departments, I pay from day 1). My raise was undermined by a colleague who performs at a lower level than I do, but he seems to have won his case that because he is _older_ he should make more. Yet we have younger men here that make more than him. And I perform better in terms of funds raised, publications / year, citations, and invited talks. My department won't put me up for external awards and certainly not internal ones. Scientists outside my university have successfully nominated me for some small ones. Is there something I'm leaving out?

- I get routinely asked to be on all sorts of committees, both at the local and international level. This may be partly due to my gender and partly to the fact that I have done fairly well in the past when serving on such committees. Other factors that hinder my ability to put more time in my research are family commitments. This also makes it very difficult for me to organize an extended sabbatical leave or to accept invitations I receive to visit other institutions for periods of a week or two.

- Bias towards female leaders. Lack of research space...for the first [about 20] years of my career, I have had only one third the lab space of that of my 10 colleagues in the same subdiscipline
- I am a woman

Additional Comments

1. It is hard to check boxes, since usually answers have qualifying circumstances. In my department, past leadership was damaging over quite a while it will take time to recover even with new leadership. A different comment: Usually cognitions of many kinds are somewhat skewed towards big name institutions.
2. I recently moved to a new university with the rank of Professor and am treated very well here as the above responses indicate. Had this survey been done while I was at my previous university, I would have answered many of the questions in 8-14 much more negatively. The details of the department you're in can make a huge difference in how you're treated -- and better treatment makes it so much easier to be productive.
3. It is important for departments to hire women in the same subfields of physics, so that they are not as isolated. Some departments do have 1, 2 or even 3 senior women but very rarely are they in the same subfield, and able to act together on the decisions concerning a knowledge of the science.
4. Physics is still a "men's world". We can not change it over night, or by creating a few female artificial 'super stars'. We need a lot of good and solid woman scientists (e.g., [names removed] were my role models when I was a postdoc at [university removed] although we did not much interaction at al)

1. Interesting facts on how women in science are treated at my university are: (1) While more than 25 percent of all male full professors in the sciences hold distinguished chairs, zero of the female full professors hold distinguished chairs. (2) when an associate professor is considered for promotion to full professor, a female has 1/2 the chance a male has for successful promotion. These statistics are acknowledged by the university. In addition, the Provost of my university has a history of protecting sexual harassers. This has caused the university to lose a number of female scientists, both faculty and students.
2. I received much better support from a previous department before I changed universities to the current one. My current department is highly ranked and clearly they hired me under pressure to find a female, as I'm the only one. I negotiated my promotion to full professor at the time I hired on, and the department has done little for me since I've joined. In fact, in several areas, especially student recruitment, I've been undermined for instance by being left off specialized brochures (in my subfield) that are used for recruiting and promotional purposes. Also, some of my students were excluded from recruitment activities for incoming students to our department, such as dinners, outings, literally turned away when they showed up to help.
3. My university gives most research resources and salary raises as part of retention packages. This has a very bad effect on salary and resource levels for female faculty who have non-mobile spouses.

1. I think recognition is the biggest problem for senior women faculty. It seems the only way to gain recognition is through the administrative route. I have no desire to be department chair or associate dean, even though I have been asked repeatedly by the dean and others. I am considered to be among the top performers in my department, but no one ever bothered to nominate me for a teaching award or research award or for anything. The other male colleagues are put up for different awards and the department makes a big fuss over them. I am well-liked and respected in the department. But it just translates into more work for me. I feel like I am constantly being asked to bail out the department's problems without any reward. There is a real tendency for the community to ignore or trivialize the accomplishments of female faculty. It is very demoralizing.

- I think being female has led to more difficulties in the latter half of my career, than it did in the beginning.
- It will be good to have a strategy to have female nominated for university and national prizes.
- This survey is a good idea I am interested in knowing the outcome.
- Keep up the good work. I really appreciate what you are doing.

Moral of the Story

As Chair work to change

- Departmental Climate
- Diversify in all sense of the word
- Diversify teaching pedagogy
- Diversify research paradigms
- Promote, recognize, award excellence

Prioritize suggested remedies

- Focus on remedies that are easy to implement
- Keep an eye on long term goals
- Look for opportunities for long term goals
- Seek help from higher administration for implementation and recognition of good practices
- Build rewards into the evaluation system

Cheap Remedies

- Organize brown bag lunch
- Invite key outside speakers for seminar and organized interactions with students, faculty, and staff
- Listen to constituents for insights
- Encourage diversity in pedagogy
- Empower office staff to help bring change
- Work with other efforts at the University

Plan for Enhancing Diversity in STEM Departments

- Why is it necessary?
- Who wins who loses?
- Examples of schemes that have worked
- Evaluate local strengths and weaknesses
- Empower Diversity Committee to develop a reasonable Plan
- Facilitate implementation of the Plan
- Provide resources where necessary

Integrate Diversity related Activities

- Check and coordinate with other STEM departments
- Initiatives may already exist at the University: take advantage of them
- Integrate diversity into all aspects of educational & research environment and approach

Some Good Practices

- Get input from audience
- Summary of activities planned at UCF

  - Physics is inherently diverse in many ways (not gender): build on this diversity

  - engage female graduate students in mentoring middle school girls (initiative from students)

  - empower staff/students to help change climate

  - one step towards “female friendly” Physics department: Lactation Room in the new Physical Sciences building

  - Discussion on pedagogical changes

Self Evaluation

- Retention of women in Physics courses
- Rate of success of female graduate students and their retention
- Retention of female faculty
- Increase in the number of female applicants to the program.