Association of American Universities

Graduate and Postdoctoral Education Committee

Postdoctoral Education Survey Summary of Results

October 2005

AAU Committee on Graduate and Postdoctoral Education

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Executive Summary

In March 2005, the AAU Graduate and Postdoctoral Education Committee undertook a survey of AAU members on the condition of postdoctoral education. The primary purposes of the survey were to examine the current state of postdoctoral education at AAU universities and the extent to which the recommendations in the 1998 AAU report on postdoctoral education issues had been implemented. The survey focused on gathering information on six broad aspects of postdoctoral education, including:

- the institutional definition of a postdoc;
- demographics of the postdoc population in 2004;
- postdoc compensation, benefits, funding, and appointment policies;
- administration of postdoctoral education; and
- the current status of postdoctoral education and the potential for improvement.

Thirty-nine of 62 (63 percent) AAU universities responded to the survey: 25 public and 14 private institutions.[1] The following briefly summarizes the survey findings.

Postdoc Definition

Eighty percent of institutions responded that they have an institution-wide definition of a postdoc. Most of the definitions are very similar. Most definitions adhere at least to some extent to the definition recommended by AAU in its 1998 report: a postdoctoral student [postdoc] is a recent doctoral graduate, in a temporary position, engaged in full-time research under the supervision of a faculty member, in preparation for an academic career. Most institutions, 62 percent, classify postdocs in their own category, apart from faculty, students, and staff. Standard appointment terms for postdocs vary more widely by institution, but most use terms of either one or three years. Most institutions, 74 percent, limit the time a person may serve as a postdoc. The most common term limit is five years and the longest is seven years.

Postdoc Demographics in 2004

In 2004, the vast majority of postdocs were in scientific fields (82 percent), and more often in the life sciences (54 percent) than in the physical sciences, mathematics, and engineering (28 percent). Institutions reported an *average* of 252 postdocs in the life sciences and 131 in the physical sciences, mathematics and engineering – but only 15 in the social sciences and five in the humanities.

Institutions reported an average of 272 international postdocs, with China and Western Europe as the leading sending regions, respectively. India, Japan, and other Asian nations were also high on the list of countries sending international postdocs. Africa, Australia, New Zealand, and South and Central America sent far fewer postdocs. Foreign nationals comprised 65 percent and U.S. citizens comprised 35 percent of the total number of postdocs reported by institutions that provided data about foreign postdocs at their institutions.

[1] The profile of postdoctoral education at AAU institutions that did not respond to the survey appears to be similar to that of responding institutions based on data about postdoctoral education offices, policies, and associations as compiled by the National Postdoctoral Association (www.nationalpostdoc.org/for_postdocs/PDOPDADatabase).

Men comprised 64 percent and women 36 percent of the total postdoc population at all responding institutions. Most postdocs, 81 percent, at the responding institutions were either white (46 percent) or Asian (35 percent). Black and Hispanic students each made up about 3 percent of the postdoc population.

Postdoc Compensation, Benefits, Funding, and Policies Governing Postdoctoral Appointments

Most institutions, 67 percent, specify a minimum stipend level for postdocs. At 36 percent of institutions, the individual departments or academic units set stipend levels. At 38 percent of institutions, stipends are set by a combination of internal academic or administrative units and external funding schedules. Only 21 percent of institutions set all minimum stipends at an institution-wide level. NIH supports the most postdoctoral positions, funding 40 percent of reported postdocs, followed by individual institutions (11 percent), NSF (eight percent), and private foundations and organizations (eight percent).

A large majority, 87 percent, of institutions have policies which specify a minimum set of benefits that are offered to postdocs. All responding institutions (39) offer postdocs at least health insurance, and all but three institutions (92 percent) offer vacation and sick leave. Dental insurance (90 percent), parental leave (77 percent), and life insurance (77 percent) were the next most frequently offered benefits. All but three institutions (92 percent) offer health insurance to the families of postdocs, and all but five (87 percent) offer dental insurance. Other benefits are far less commonly offered to families.

With respect to institution-wide guidelines or policies covering benefits and other aspects of postdoctoral life, the most common pertain to: vacation and sick leave (80 percent of respondents); postdoctoral appointments and/or appointment letters (74 percent); grievance procedures (72 percent); minimum stipends and benefits (70 percent); intellectual property rights (56 percent); conflicts of interest (56 percent); and misconduct (54 percent). Only 28 percent of responding institutions have policies pertaining to the deferral of postdoctoral appointments – for example, deferring the appointment in order to finish a dissertation or for family or personal reasons. Thirty-nine percent of institutions offer on-campus housing to postdocs.

Administration of Postdoctoral Matters

A majority, 56 percent, of responding institutions have a central office or position that administers postdoctoral matters. Most commonly (in 10 of 22 cases) the position or office reports to a dean or associate dean either alone or in conjunction with others. Others report to provosts, vice presidents, vice provosts, vice chancellors, and in one case, to both the provost and president. Fifty-one percent of respondents have formal institution-wide procedures in place for reviewing policies governing postdoctoral matters. Only five institutions (13 percent) do not review such policies at all, and three of these respondents indicated that they will probably do so soon.

The vast majority, 87 percent, of institutions provide opportunities for postdocs to teach. Of these, 79 percent have formal policies governing postdocs teaching.

Few respondents – only eight of 39, or 21 percent – offer certificates of completion for postdocs. Two institutions offer letters of completion upon request. Forty-one percent of institutions offer career development services geared specifically for postdocs. While faculty are involved in the provision of such services at the vast majority (88 percent) of institutions, no institution offers incentives to faculty to participate.

Few responding institutions track postdocs after completion of their appointments. Only four respondents (10 percent) conduct a postdoc satisfaction exit survey, and only three (8 percent) respondents collect data on postdoc placement and/or other career outcomes information.

Approximately 41 percent of responding institutions have a postdoc association run by postdocs on their campus. All have been founded since 1997, except for one whose creation date was unknown by the respondent.

Current Status of Postdoctoral Education and Potential for Improvement

Most respondents (69 percent) said that postdoctoral education was working well at their institution. The most common suggestions for improving postdoctoral education pertained to: more and better career development programs; better organization of campus postdoctoral affairs; more formalized postdoctoral policies; improved salary and benefits; more postdoc exit surveys and career tracking; and more attention to community-building among postdocs to prevent them from becoming isolated in individual labs.

When asked about barriers to improving postdoctoral education, the most common response (31 percent) was lack of funding. Other common responses included: isolation of postdocs in labs; little institution-wide oversight or support; faculty culture and mentoring issues; a need for non-lab career training and education; and visa and immigration policies for international postdocs.

When asked about the most important thing that could be done about postdoctoral education on a national policy scale, responses varied widely. The most common responses included: ending federal agency policies that require non-employee status for some postdocs, which makes it difficult to offer equal benefits to all postdocs; improving visa policies to ease entry for international postdocs; clearly defining postdoctoral studies and implementing firmer policies to govern postdoctoral life, status, and compensation; and creating awareness and interest in postdoctoral issues on a national level.

Respondents also gave a wide range of answers when asked to describe a successful practice or policy affecting postdocs at their institution. Some examples are included in the full summary of results in the subsection entitled *Success Stories.*

Introduction

AAU's Committee on Postdoctoral Education noted in its 1998 report and recommendations that postdoctoral education has been a part of American higher education for over 100 years. The 1998 report highlighted the important role that postdoctoral education plays in the research enterprise of the United States and it made a series of recommendations for improving postdoctoral education. As noted in the 1998 AAU report, postdoc appointments provide recent Ph.D. recipients with an opportunity to develop further the research skills acquired in their doctoral programs or to learn new research techniques. In the process of developing their own research skills, postdocs perform a significant portion of the nation's research and augment the role of graduate faculty in providing instruction to graduate students.

In recent years, more attention has been given to postdoctoral education by the National Academies, the National Science Foundation (NSF), the National Institutes of Health (NIH), the American Association for the Advancement of Science (AAAS), and other government and nonprofit organizations. Additionally, in 2003 the National Postdoctoral Association, a new national organization of postdocs, was founded.

The attention postdoctoral education has commanded in recent years is due in significant part to the increasing number of postdocs. According to NSF, the number of postdocs at U.S. universities increased by 17 percent (40,086 to 46,807) from 1998 to 2003, the last year for which data is available.[2] Similarly, at AAU institutions, the number of postdocs has increased by 19 percent (31,155 to 56,219) during the same time period.[3] A better appreciation and understanding of the role and importance of postdocs is emerging as the postdoc population continues to grow and the federal government, the academy, and research-related organizations give greater attention to postdoctoral education.

Survey Results

In March 2005, the AAU Graduate and Postdoctoral Education Committee undertook a survey of AAU members on the condition of postdoctoral education. The primary purposes of the survey (see Appendix A) were to examine the current state of postdoctoral education at AAU universities and the extent to which the recommendations in the 1998 AAU report on postdoctoral education issues (see Appendix B) had been implemented. The survey focused on gathering information on six broad aspects of postdoctoral education, including:

- the institutional definition of a postdoc;
- demographics of the postdoc population in 2004;
- postdoc compensation, benefits, funding, and appointment policies;
- administration of postdoctoral education; and
- the current status of postdoctoral education and the potential for improvement.

Thirty-nine of 62 (63 percent) AAU universities responded to the survey: 25 public and 14 private institutions.[4] See Appendix C for the list of responding institutions.

[2] Data source: *The National Science Foundation (NSF) and National Institutes of Health (NIH) Survey of Graduate Students and Postdoctorates in Science and Engineering*, NSF Division of Science Resources Statistics.
[3] Ibid.
[4] Ibid.

Postdoc Definition

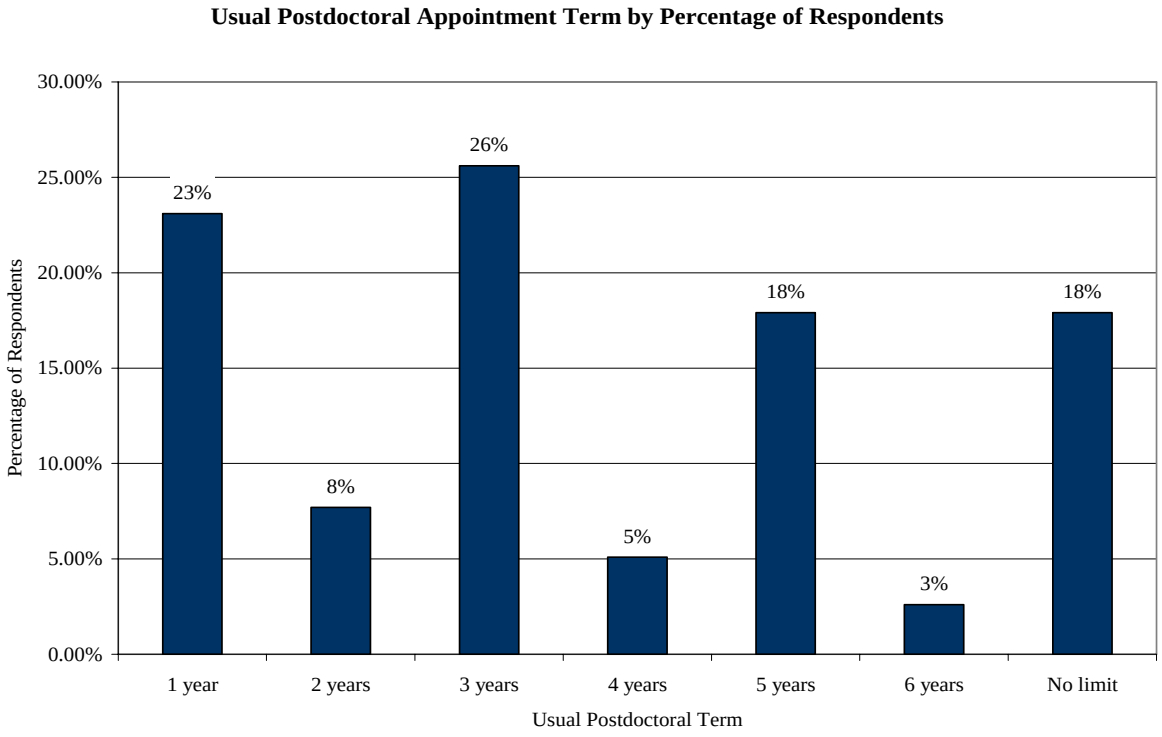
Thirty-one of 39 institutions, or 80 percent, stated that their institution had an official institution-wide definition of a postdoc. Eight, or 20 percent, said that their institution did not have such a definition. Sixty-eight percent of the institutions with a definition (21 of 31) had very similar definitions, which closely reflect the definition of a postdoctoral position recommended by the AAU's Committee on Postdoctoral Education in 1998.[5]

Respondents were asked to provide their institution's definition of a postdoc. The most common elements of such definitions included the following, which are in the 1998 AAU-recommended definition: a postdoctoral student [postdoc] is a recent doctoral graduate, in a temporary position, engaged in full-time research under the supervision of a faculty member, in preparation for an academic career. Five institutions also mentioned that postdocs have the freedom to publish the results of their research and are expected to do so.

Twenty-four institutions (62 percent) classify postdocs in their own category, separate from students, faculty and staff. Four institutions classify postdocs as staff, three as faculty, and one as students. The remaining seven institutions classify postdocs as "other." Among those institutions that classify postdocs as "other," two classify postdocs as a particular type of faculty, four classify some postdocs separately and some as staff, and one institution classifies postdocs "inconsistently, based on reporting."

There was a wide range of institutional responses to the question about the length of postdoctoral appointments on campus. The distribution of responses is illustrated in Chart I:

Chart I



[5] *Association of American Universities Committee on Postdoctoral Education Report and Recommendations,* March 31, 1998. http://www.aau.edu/reports/PostdocRpt.html.

Twenty-nine institutions (74 percent) place limits on how long an individual can be a postdoc at their institution. Ten institutions (26 percent) do not. Of the 29 institutions that limit the postdoctoral period, five limit it to three years, one to four years, 16 to five years, five to six years, and two limit it to seven years. The 1998 AAU report indicated that most institutions at that time either had no limits or regularly disregarded them. Currently, most institutions have official limits. Whether these limits are enforced is another question, and one that this survey did not address.

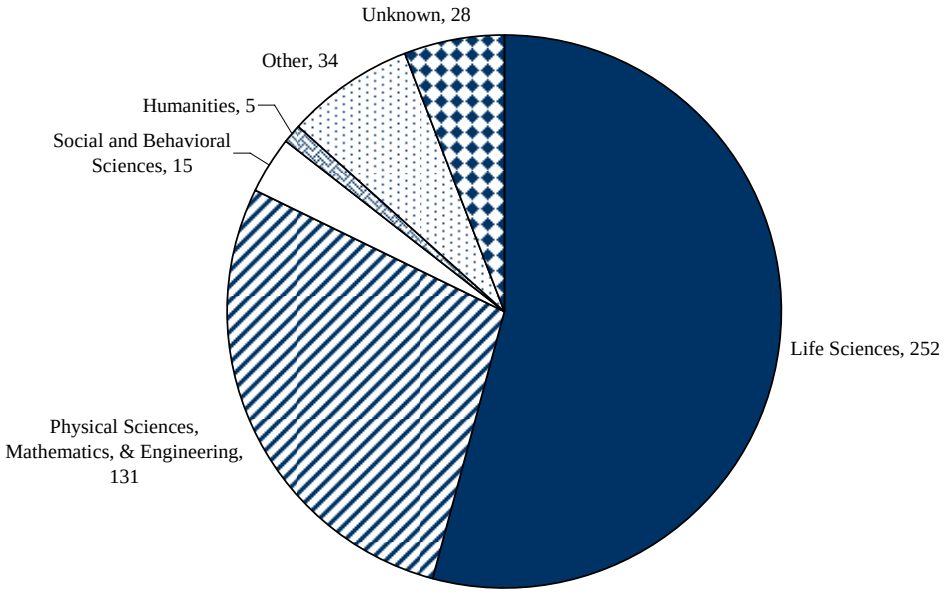
Postdoc Demographics in 2004

In 2004, the vast majority of postdocs at responding institutions were in scientific disciplines (82 percent), and more often in the life sciences (54 percent) than in the physical sciences, mathematics, and engineering (28 percent). Institutions reported few postdocs in the social and behavioral sciences (three percent) and the humanities (one percent). The disciplines of 13 percent of postdocs reported as "other" or "unknown."

Institutions reported an average of 252 postdocs in the life sciences and 131 in the physical sciences, mathematics and engineering. Institutions reported far fewer postdocs in other disciplines: an average of 15 postdocs in the social sciences, five in the humanities, 34 in "other" and 28 in "unknown." (The "unknown" average was thrown off significantly by one respondent that reported a very high number. Only four institutions reported postdocs in the "unknown" category: one institution reported one, one reported seven, one reported 13, and one reported 1,030 postdocs in "unknown" fields). See Chart II for a visual representation of the responses.

Chart II

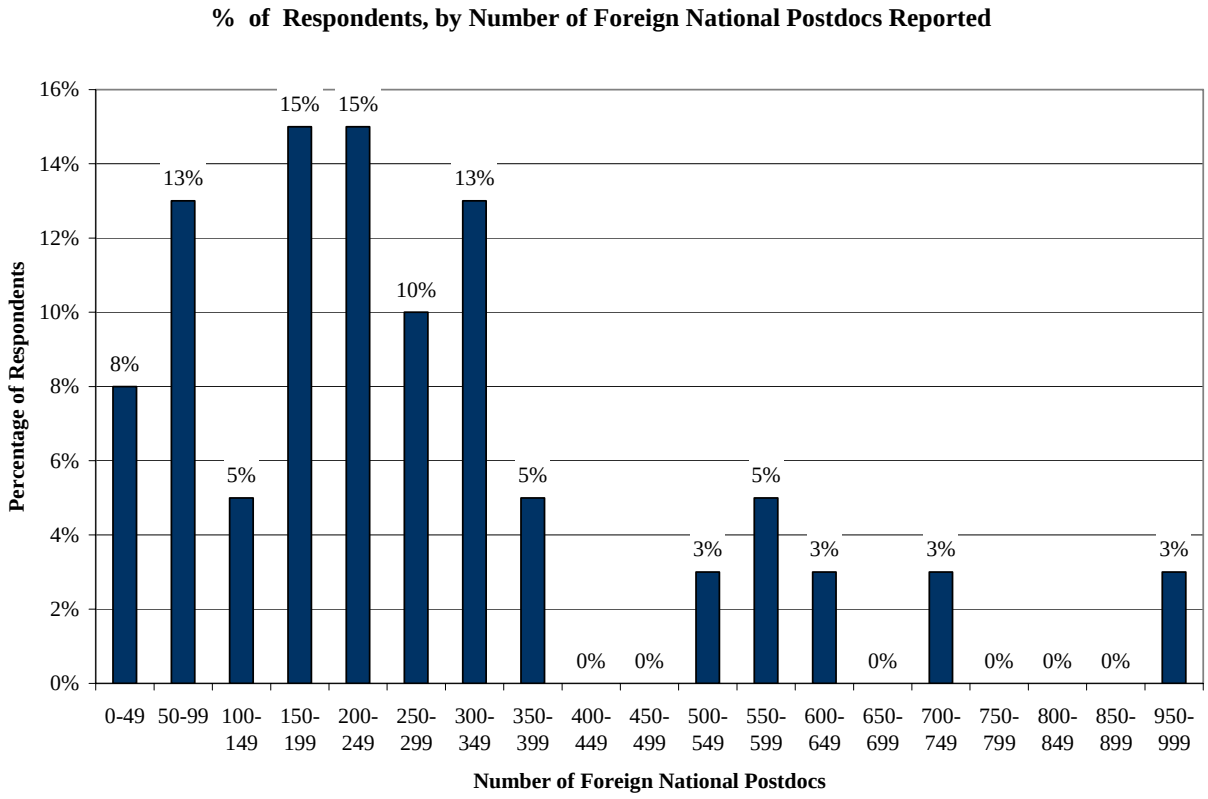
Average Number of Postdocs Per Institution, by Major Field



Thirty of 39 responding institutions provided the number of foreign nationals serving as postdocs at their institution. The total number of postdocs reported from the 30 institutions that responded to the question on foreign national postdocs was 14,289 of which 5,050 (35 percent) were U.S. citizens and 9,239 (65 percent) were foreign nationals.[6] The composition of domestic and foreign postdocs found in this survey, 35 percent/65 percent, differs somewhat with the 58 percent/42 percent composition found in the 2003 *NSF-NIH Survey of Graduate Students and Postdoctorates in Science and Engineering.*[7]

There was an average of 272 foreign national postdocs at each institution in 2004. The distribution of foreign national postdocs at the responding institutions is shown in Chart III.

Chart III



With respect to international postdocs, China and Western European nations are the leading sending countries. Institutions reported an average of 70 students from China and 61 from Western Europe nations. Other leading countries of origin include: India with an average of 25, Japan with an average of 18, and South Korea with an average of 16. Despite efforts to provide

[6] The survey did not directly ask the total number of postdocs, the total number of foreign nationals, or the total number of U.S. citizens. These totals were calculated by 1) totaling the responses to question eight of the survey on the number of male and female postdocs; 2) totaling the responses to question seven on foreign nationals from specific countries and areas; and 3) subtracting the number of foreign postdocs from the overall total of postdocs. Percentages were then calculated accordingly.

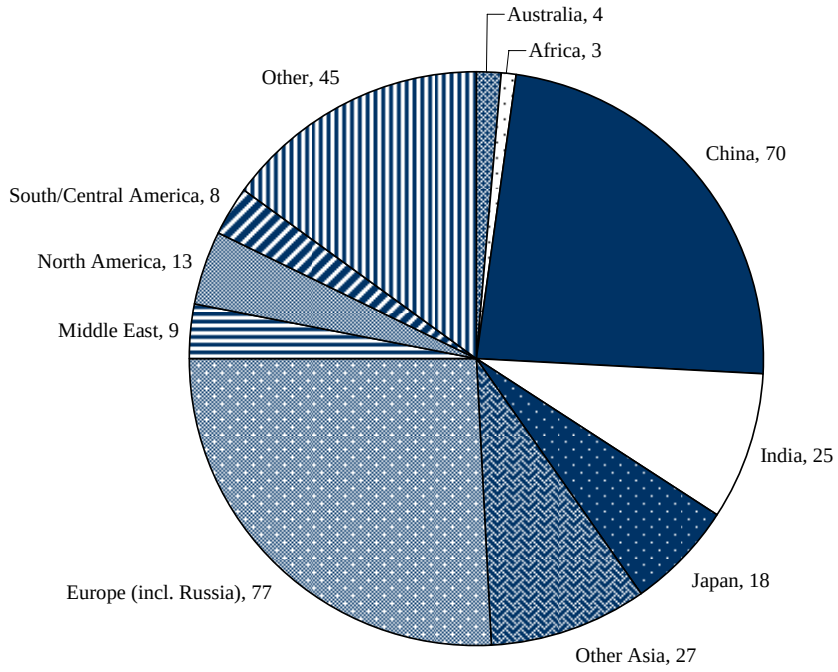
[7] Data source: *The National Science Foundation (NSF) and National Institutes of Health (NIH) Survey of Graduate Students and Postdoctorates in Science and Engineering*, NSF Division of Science Resources Statistics.

a fairly detailed breakdown of key sending countries and world regions in the survey, the category of "all other nations" had an average of 45 students per institution (this figure was skewed by two institutions that put all of their foreign postdocs in that category – without those two, the average drops to 21).

All together, institutions reported an average of 140 students from Asian nations, 77 from European nations (including Russia), 13 from other North American nations (11 from Canada, two from Mexico), one from Central America, seven from South American nations, three from African nations, nine from Middle Eastern nations, and four from Australia and New Zealand. A more detailed breakdown can be found in the *Tabulation of Results* section; a visual representation by region is shown in Chart IV.

Chart IV

Foreign Postdocs by Region of Origin, Average # Per Institution

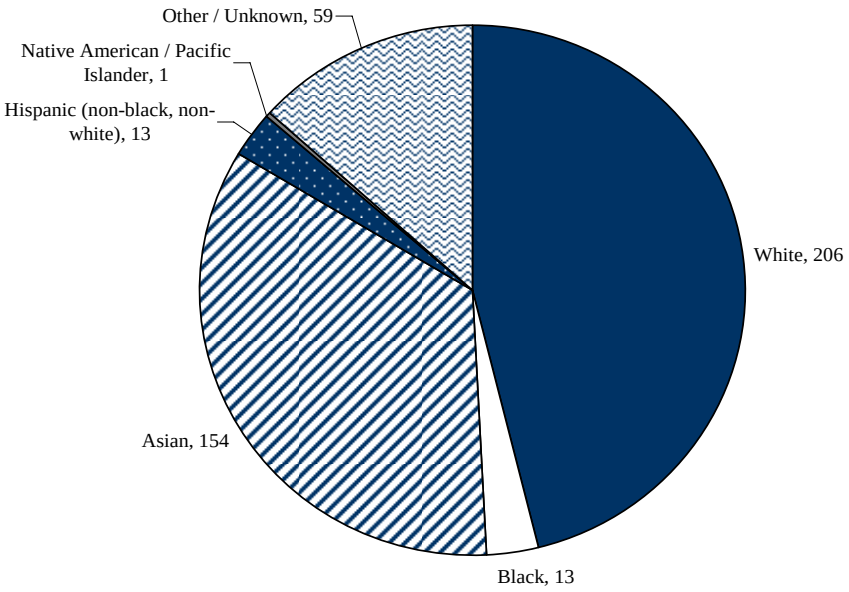


With respect to race and ethnicity, institutions reported a sizable majority of white and Asian students, jointly making up 81 percent of the total (46 percent white and 35 percent Asian). This survey found a larger percentage of Asian students than the Sigma Xi survey, which reported about 75 percent white and 16 percent Asian.[8] Black, Hispanic and Native American/Pacific Islander students together made up less than seven percent of the total postdocs reported. A more detailed distribution follows in the *Tabulation of Results* section. Chart V provides a visual representation of the data.

[8] *Doctors Without Orders: Highlights of the Sigma Xi Postdoc Survey*. Supplement to *American Scientist*¸ May-June 2005. www.sigmaxi.org/postdoc/highlights.pdf

Chart V

Average Number of Postdocs Per Institution, by Race/Ethnicity



As for gender composition, men made up 64 percent and women 36 percent of the postdoc population reported. These results are similar to those found by the Sigma Xi survey: men 65 percent and women 35 percent of non-U.S. citizen postdocs.[9] The Sigma Xi survey also sorted results by citizenship and found that among U.S. citizens, female postdocs slightly outnumbered males – 51 percent to 49 percent.[10] The AAU survey results were not sorted by citizenship and gender.

Postdoc Compensation, Benefits, Funding, and Appointment Policies

In general, AAU universities appear to have made significant strides since 1998 in developing and implementing institution-wide policies governing postdoctoral appointments, compensation and benefits, and other aspects of postdoctoral education. The 1998 AAU report noted, "few institutions report having campus-wide compensation policies for postdoctoral appointees" and that "few institutions have policies established specifically for postdoctoral appointments."[11] The results of the 2005 survey reveal a different picture.

Twenty-six of 39 (67 percent) institutions specify a minimum stipend level for postdocs. Few institutions – only 21 percent – have an institution-wide policy on the setting of postdoc stipend levels. In the case of 14 institutions, individual academic units or departments set stipends. Fifteen institutions use a combination of internal and external stipend schedules (external stipend schedules are those set by outside funding agencies such as NSF and NIH). Only two

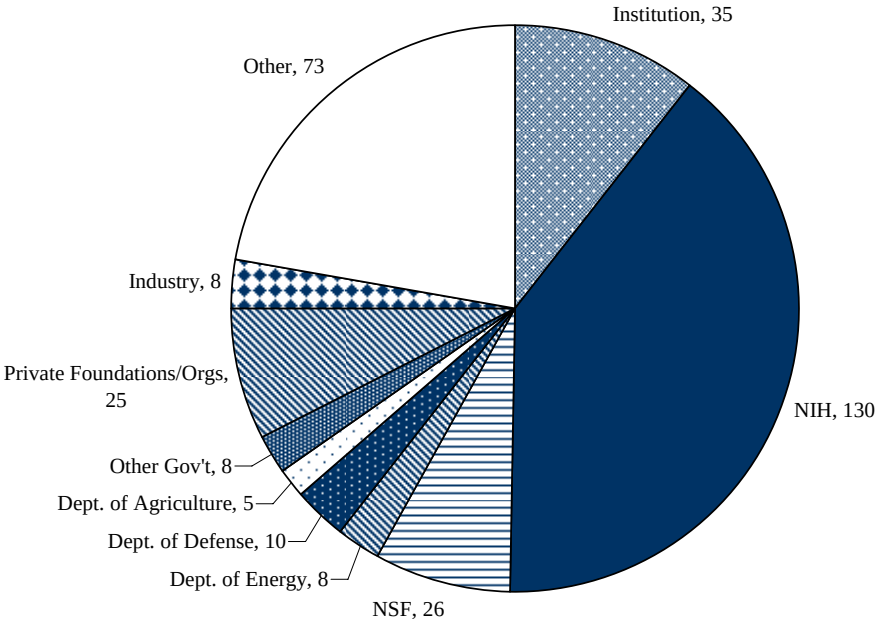
[9] S*igma Xi Postdoc Survey, Results By Citizenship*: www.sigmaxi.org/postdoc/by_citizenship/about_you_short.html
[10] Ibid
[11] *Association of American Universities Committee on Postdoctoral Education Report and Recommendations,* March 31, 1998. www.aau.edu/reports/PostdocRpt.html.

institutions rely entirely on external stipend schedules. Thirty-three institutions (85 percent) report that stipends go up as postdoctoral experience increases.

NIH is the leading source of funding support for postdocs. NIH supports 35 percent of postdocs reported by the responding institutions through research grants and another 5 percent through National Research Service Awards. NSF supports eight percent of reported postdocs. "Other" sources support 22 percent of reported postdocs, and individual institutions support 11 percent of reported postdocs. No other funding source, including private organizations (eight percent) and other government agencies, supports more than 10 percent of reported postdocs. A more detailed breakdown can be found in the *Tabulation of Results* section. Chart VI shows the distribution by funding source.

Chart VI

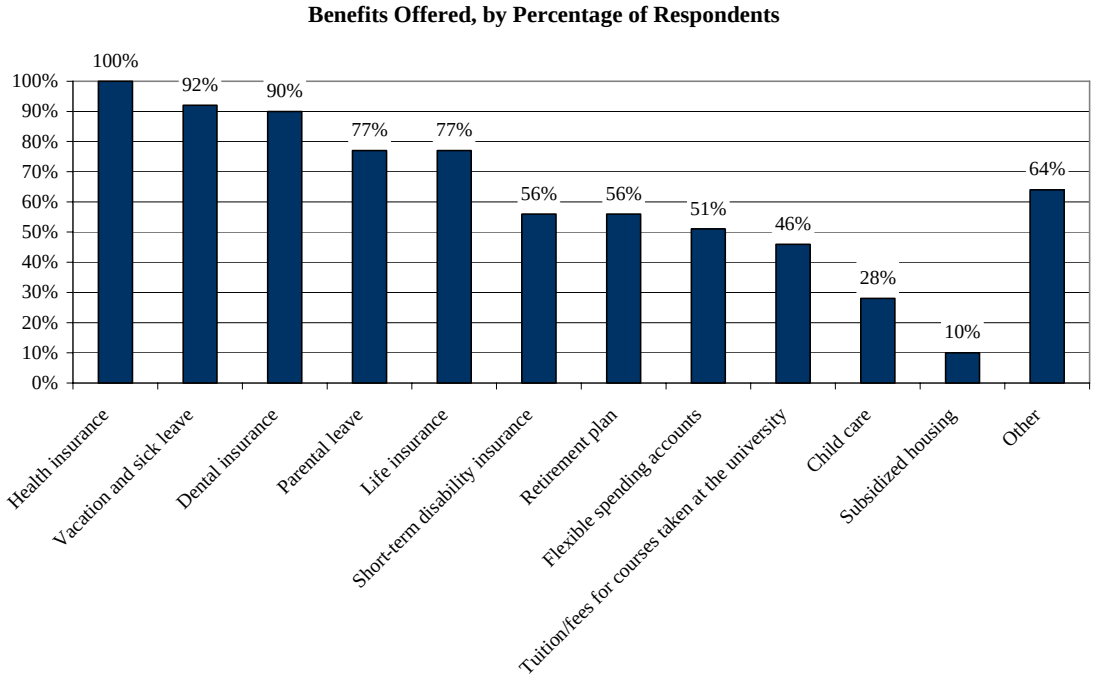
Average Number of Postdocs Per Institution by Funding Source



Thirty-four institutions (87 percent) specify a minimum set of employer-offered benefits for postdocs. All 39 responding institutions offer postdocs health insurance and 36 (92 percent) offer vacation and sick leave. Most benefits appear to be aimed at young adults without families, although the Sigma Xi survey found that 59.4 percent of postdocs they surveyed were married and 33.5 percent had children.[12] For example, AAU's survey results indicate that health and dental insurance and vacation leave are more common than retirement plans, child care, or subsidized housing (however, parental leave is relatively high on the list). Chart VII shows the percentage of institutions offering each of the aforementioned and other benefits. The number of institutions offering each can be found in the *Tabulation of Results* section.

[12] S*igma Xi Postdoc Survey, All Results*, http://www.sigmaxi.org/postdoc/all/your_life_short.html

Chart VII



"Other" benefits offered include long-term disability (offered at nine institutions), vision coverage (seven institutions), workers' compensation (four institutions), and tax-deferred accounts (two institutions). One institution each listed career development services, a college savings program, six weeks of paid family leave and a package including a computer account, and parking and library privileges.

It should be noted that when the Sigma Xi survey asked postdocs which benefits they would like to see added or improved, retirement plans topped the list at 33 percent of respondents, followed by dental insurance (32 percent) and child care (24 percent).[13] Child care is a hefty expense for postdocs – those questioned by Sigma Xi put their monthly expenses at an average of $2,097, almost twice as much as their housing expenses, at an average of $1,292.[14]

When asked if the benefits offered to postdocs were offered to ALL postdocs, regardless of the combination of benefits offered, 14 of the 39 (37 percent) institutions responded affirmatively. Twenty-five institutions (63 percent) indicated that they offered benefits to some postdocs. Of those institutions that offer benefits only to *some* postdocs, 17 of 25 (68 percent) listed employee status and/or funding source as the key determining factor for benefits. One mentioned that postdoctoral fellows are offered the option to purchase health and dental insurance because postdoctoral fellows are not classified as employees and thus not entitled to employee benefits. Four institutions required a half-time or greater schedule (one additional institution required a full-time schedule) in order for benefits to be offered. One institution indicated that it was "not permitted" to offer its health insurance plan to international postdocs; another institution said it did not offer benefits to postdocs appointed for less than six months.

[13] S*igma Xi Postdoc Survey, All Results*, http://www.sigmaxi.org/postdoc/all/benefits_services_short.html
[14] S*igma Xi Postdoc Survey, All Results*, http://www.sigmaxi.org/postdoc/all/your_life_short.html

Postdocs' family members generally are offered health insurance (36 institutions, 92 percent) and dental insurance (34 institutions, 87 percent), but are less likely to receive life insurance (13 institutions, 33 percent) or tuition and fees for institutional courses (nine institutions, 23 percent). Eight institutions (21 percent) also offer vision benefits. Only one institution offers postdocs' family members no benefits at all.

Most institutions (28 or 72 percent) have no policy on deferring postdoctoral appointments (for example, to allow them to finish a dissertation or deal with family or personal issues). This does not mean that some institutions do not defer appointments. Rather, it only means that they have no policy specifically addressing that question.

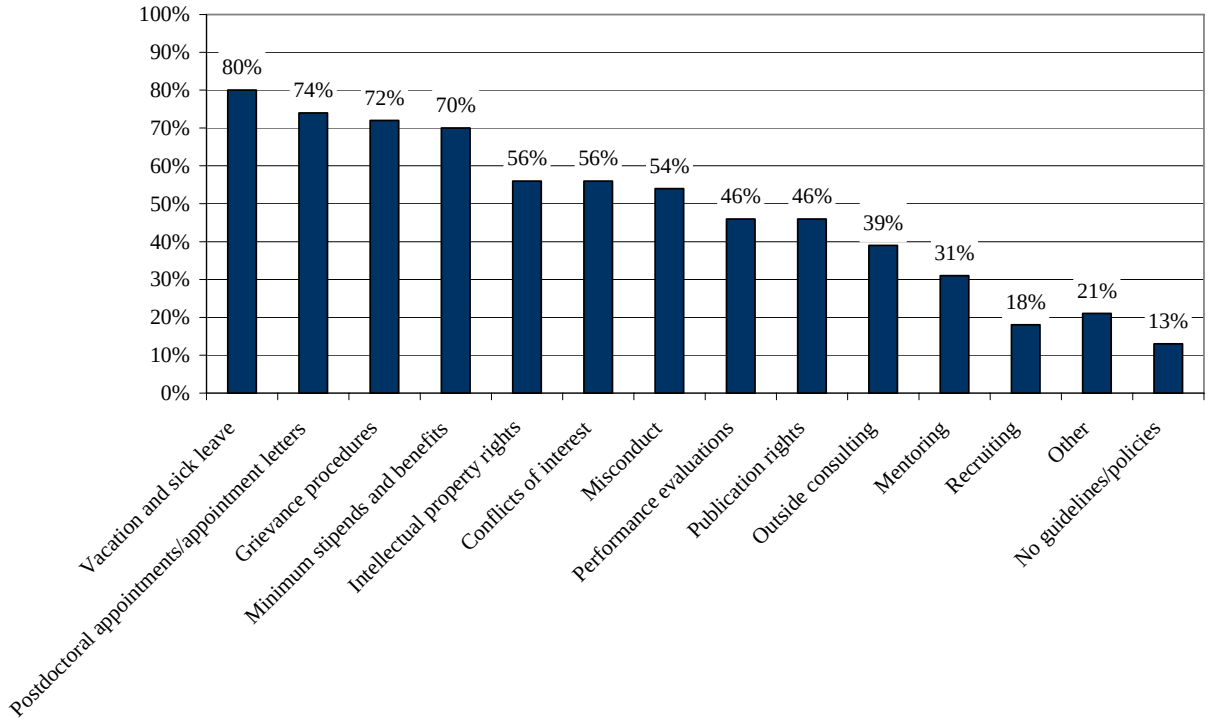
Most institutions do not offer on-campus housing for postdocs; 15 institutions (39 percent) of the respondents offer it.

Thirty-four out of 39 (87 percent) responding institutions provide opportunities for postdocs to teach. Of these, 27 institutions have a formal policy on postdocs teaching.

Thirty-three institutions (85 percent) have institution-wide guidelines or policies on postdoctoral appointments. Chart VIII shows the percentage of respondents that have policies on particular areas related to postdoctoral education. The number of respondents with each type of policy can be found in the *Tabulation of Results* section.

Chart VIII

Percentage of Institutions Holding Postdoctoral Education Policies in Various Areas



Administration of Postdoctoral Matters

Sixteen institutions, about 41 percent, have a postdoctoral association organized by postdocs. Of these, most postdoc associations were formed recently. The oldest postdocs association was established in 1997, one each in 1998 and 1999, two each in 2000 and 2001, five in 2002, and one in 2005. One institution was unsure when its postdoc association was organized. Twenty-two institutions (56 percent) have a central administrative office or position responsible for postdoctoral education. Two of these offices or positions were established in the 1980s, six in the 1990s, and 10 in the 2000s. Four respondents were unsure or did not answer. Institutional oversight of these offices or positions varies considerably. Of 12 respondents with a central postdoctoral office or position, four report to deans; four report to both a dean and vice chancellor; and four report to provosts. Two postdoctoral offices or positions report to both a vice chancellor and associate dean. For the postdoctoral offices and positions of each of the remaining six respondents, one reports to an executive vice chancellor, one reports to a vice president, one reports to a vice provost, one reports to the president and provost, one reports to the provost and vice president, and one reports to the office of graduate studies.

A slim majority of institutions have procedures for formal, institution-wide review of postdocs policies: 20 institutions (51 percent) reported having such procedures in place. Seven (18 percent) institutions review postdoctoral policies informally, and seven (18 percent) leave that responsibility to the individual department or unit, either formally or informally. Five (13 percent) institutions do not review such policies at all, though three of these report that they will likely begin such reviews in near the future.

As in 1998, few institutions provide certificates of completion to postdocs. Only eight institutions (21 percent) offer them: two institutions have done so for less than 10 years and six for between 20 and 30 years. Only two institutions provide *letters* of completion: one institution has done so for over 20 years.

The prevalence of career advising has improved somewhat since AAU's 1998 report, which stated that "virtually no institutions" offered job placement services designed specifically for postdocs.[15] Sixteen institutions (41 percent) provide career advising and development services geared specifically for postdocs. Fifteen institutions also report that faculty members are involved in the career advising of postdocs. No institution reports offering incentives to faculty members for providing career advice and development to postdocs.

Only four institutions (10 percent) conduct an exit survey of departing postdocs that asks about their satisfaction with their postdoctoral experience. Only three institutions (8 percent) collect data on placement and career outcomes information on postdoctorates.

Current Status of Postdoctoral Education and Potential for Improvement

A majority of institutions (27 of 39 or 69 percent) said postdoctoral education is going well at their campus. Three institutions reported recent significant improvement and one cited a recent campus survey reporting high satisfaction levels. One institution said career development was an area in which their institution excelled. Another commented on the collegial relationships between faculty mentors and postdocs, and a third institution looked forward to benefits provided

[15] *Association of American Universities Committee on Postdoctoral Education Report and Recommendations,* March 31, 1998. www.aau.edu/reports/PostdocRpt.html.

by a new postdoc association. Three institutions (8 percent) said that postdoctoral education is not working well, but that the institution is working to improve. Two simply listed improvements that their institution needed to make to improve the situation. One said that postdocs in the engineering college were significantly happier than those in the medical school.

When asked what their institution was doing or could do to improve postdoctoral education on their campus, institutions reported as follows:

- Six institutions cited career development and assistance in transitioning to a career;
- One institution said it was developing additional mentoring and performance review requirements for principal investigators;
- Two institutions reported better campus organization of postdoctoral affairs with more formal policies; another wanted more formal policies governing faculty oversight and mentorship; and a fourth said it was implementing a new policy section for postdocs;
- One institution suggested salary increases for postdocs; another suggested improved benefits; and another proposed increased funding in general;
- Two institutions suggested more efforts to build postdoc communities through social and educational activities;
- Two institutions cited improving training in skills such as oral and written presentation, grant preparation, and other needed management and career skills;
- Two institutions mentioned implementing exit surveys and improved tracking of postdocs into their careers; one institution indicated that it would be implementing both shortly;
- One institution said improved communication between postdocs and the Graduate Studies Office;
- One institution cited development of a formal postdoc association;
- One institution wanted a standard set of benefits and practices, regardless of funding source; and
- One institution reported that it was expanding policies concerning part-time appointments to address work-life issues.

The attention many AAU institutions are giving to postdoctoral education policies and organization fits well with the results of the Sigma Xi Postdoc survey, which found that "postdocs reporting the greatest amount of structured oversight and formal training are much more likely to say they are satisfied, to give their advisors high ratings, to experience relatively few conflicts with their advisors and to be more productive in terms of number of publications compared with those with the least oversight and training."[16] AAU recommended in 1998 the development of institutional "policies and practices for systematically incorporating postdoctoral education into its overall academic program."[17] The National Academies' Committee on Science, Engineering and Public Policy (COSEPUP) made similar recommendations in 2000, commenting, "to ensure that postdoctoral appointments are beneficial to all concerned, all parties to the appointments—the postdoc, the postdoc adviser, the host institution, and funding organizations—should have a clear and mutually-agreed-upon understanding with regard to the nature and purpose of the appointment."[18]

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[16] *Doctors Without Orders: Highlights of the Sigma Xi Postdoc Survey*. Supplement to *American Scientist*¸ May-June 2005. www.sigmaxi.org/postdoc/highlights.pdf

[17] *Association of American Universities Committee on Postdoctoral Education Report and Recommendations,* March 31, 1998. www.aau.edu/reports/PostdocRpt.html.

[18] Committee on Science, Engineering and Public Policy, *Enhancing the Postdoctoral Experience for Scientists and Engineers: A Guide for Postdoctoral Scholars, Advisers, Institutions, Funding Organizations, and Disciplinary Societies.* National Academies, 2000: http://books.nap.edu/books/0309069963/html/98.html

Improved salary, benefits, and career development would also be welcome to many postdocs. The Sigma Xi survey found that salary, benefits and career development were the areas of least satisfaction for postdocs: only 22 percent of postdocs were completely satisfied with their salary, only 25.9 percent were completely satisfied with their benefits, and only 26.8 percent completely satisfied with career development opportunities.[19] However, Sigma Xi also found that, of those postdocs who had career counseling available to them, only 25.2 percent actually used those services.[20]

A focus on postdoc structure, funding, and support also appeared in the responses to the AAU survey question that asked about barriers to improvement. These barriers were described as follows:

- Twelve institutions cited funding as a primary barrier to improvement (one commented, however, that while state funding was a problem, "there are always other potential funding sources");
- One institution mentioned NIH funding practices specifically;
- One institution cited inconsistencies between state and federal laws regarding employment status;
- Eight respondents commented on a lack of institution-wide oversight and support for postdocs;
- Four institutions commented on the isolation of postdocs in individual laboratories;
- Seven institutions cited faculty related issues: one cited a lack of time available for mentoring; another noted a faculty culture that does not emphasize mentoring as a critical activity that needs to be formalized and subjected to oversight; a third commented on a faculty culture that "does not always operate in the best interests of the postdoc;" a fourth institution cited uneven mentoring among different research groups; a fifth institution mentioned faculty resistance to the idea of postdoc performance evaluations; a sixth institution cited a lack of faculty understanding of policies concerning postdocs, particularly the idea that postdoc positions are not career-path appointments; and a seventh institution mentioned faculty reluctance to take time away from research;
- Three institutions cited a lack of recognition for postdocs' career training and development needs other than those provided through laboratory work;
- One institution noted visa policies that apply to international postdocs;
- One institution mentioned federal and state limitations on appointments of international postdocs;
- Two institutions commented that postdoc workloads often get in the way of involvement in the postdoc community or to get career development assistance or other training;
- One institution commented that the need for cheap labor in the sciences leads to exploitation of postdocs; and
- One institution said the situation of non-employee postdocs needed to be improved.

When asked about national policies that could improve postdoctoral education, institutions tended to focus on structure and organization of postdoctoral life and cited the following:

- Eight institutions hoped for better and firmer guidelines and policies governing postdoctoral life, status, and salaries. Another institution called for a central office on every campus to manage postdoctoral education that would be linked to a career center or

[19] S*igma Xi Postdoc Survey, All Results*: www.sigmaxi.org/postdoc/all/satisfaction_short.html
[20] S*igma Xi Postdoc Survey, All Results*: www.sigmaxi.org/postdoc/all/inst_environment_short.html

to an individual with a counseling background who would work closely with a tenured faculty member;
- Seven institutions wanted an end to NIH or other federal requirements limiting some postdocs to non-employee status. They said that such requirements make it difficult for institutions to offer all postdocs equal benefits;
- Three institutions cited expansion of career opportunities for postdocs;
- Three institutions cited the need to improve visa policy, two specifically mentioned the Student and Exchange Visitor Information System (SEVIS);
- Three institutions suggested better awareness of and interest in postdoctoral issues. One said that this appeared to be happening; and
- Three institutions called for a reduction in the length of postdoc appointment terms, or a minimum standard for such terms.

Other suggestions that were made by individual respondents included: exit surveys for all postdocs, health insurance for all postdocs, higher salaries and benefits, support for the goals of the National Postdoctoral Association, and acknowledgement of the dependence of the life and physical sciences research enterprise on postdocs.

Success Stories

The survey asked each institution to list a practice or policy that had been successful in improving postdoctoral education on their campus. Responses fell into four main categories: career development, community, pay and benefits, and organization and policies.

Career Development

One institution addresses the non-laboratory, educational needs of postdocs by opening its professional development programs to them (the institution noted that about 5-10 percent of participants in these programs are postdocs). These programs include:

- "Preparing Future Faculty," a year-long class and mentoring program that focuses on the multiple roles of faculty, particularly at non-Carnegie Research Extensive institutions;
- "Beyond Books: Academic and Survival Skills for Graduate School and Beyond," workshops of one to six hours that focus on writing and publishing, academic and non-academic job searches; writing grant proposals and managing funded projects; effective research presentations; mentoring; ethics; and transition from graduate student to faculty roles;
- "The Virtual Mentor," a listserv with postings from eight virtual mentors who are recent doctoral graduates in a variety of academic and non-academic positions; and
- "The Academic Ethicist," an online question-and-answer column responding to graduate students' and postdocs' questions about academic and research dilemmas.

Another respondent cited an annual campus "Postdoctorates Career Symposium" and two programs called "Professors of the Future and Professors for the Future," which address career development and preparation. "Workshops for Academic Careers" are provided by another institution's College of Engineering.

Another respondent's oncology department holds seminars for postdocs and graduate students to present their work and have it evaluated and critiqued by their peers.

Another institution highlighted its office of postdoctoral affairs, which provides postdocs with broad academic support through training and development on data analysis, teaching skills, grant writing, academic job searches, responsible conduct of research, clinical research skills development, graphics presentation, and other topics.

One institution provides a speech improvement class for international postdocs to improve their English skills so they can be more successful in presenting their research and in teaching.

Community

One institution maintains a postdoctoral listserv to facilitate communications among its postdocs. The institution reports that one college created and regularly updates a postdoctoral website, which has proved helpful to postdocs and to faculty who intend to make an offer to a postdoc. One institution has a formal postdoc orientation and an annual postdoc dinner. Another institution reported holding two postdoc receptions each year and granting an annual award for excellence in postdoctoral research. One institution hosts a "postdoc pizza parlor," which allows postdocs to discuss important issues in an informal setting with administrators responsible for their oversight. Another institution arranges a yearly town hall meeting, where postdocs and administrators exchange status reports and discuss policies and issues.

Two institutions commented on the value of their institutions' postdoc associations. One commented that the postdoc association serves as both a useful forum for the airing of concerns and a valuable community-building tool. The other respondent said that its postdoc association is newly formed, and that the institution plans to encourage and support it as much as possible. One institution cited decentralization as an advantage because it allows postdocs greater autonomy in individual laboratories.

Pay and Benefits

One institution reported that they are working to provide the same benefits to all postdocs, regardless of the source of their funding. Another institution reported that it provides regular annual increases in the minimum salary for postdocs and fellows. One institution noted it provides not only annual salary increases, but it also sets a minimum salary level each year.

Organization and Policies

One institution reported that their postdoctoral appointment files require a mentor's expectation letter that outlines the title, funding source, appointment period, expectations, and benefits. The institution said this helps ensure that the postdoc has a clear understanding of what the position is and what is expected of them. The same institution requires performance evaluations once a year or at time of appointment termination, which ever happens first. Another respondent said their institution’s formal policies provide clear guidelines for faculty, postdoctoral scholars, and staff. Another institution described its office of postdoctoral studies, which is led by a professional career counselor and advised by a tenured faculty member. The respondent noted that "this model seems to work more effectively than most."

One responding institution said, "Our postdoctoral education policy as a whole has been a great benefit to our institution. Defining a postdoc and postdoctoral training, standardizing titles and benefits, and setting minimum salary/stipend amounts and term limits has really helped us return postdoc positions to true training positions, where postdocs train and then move on in their career goals. Along with this, we have established resources specifically for postdocs, such as professional development seminars to complement their scientific training and career development seminars and workshops to help them make decisions regarding their careers."

Conclusion

The 2005 AAU Graduate and Postdoctoral Education Committee survey of AAU members sought to examine the current state of postdoctoral education at AAU universities and the extent to which the recommendations in the 1998 AAU report on postdoctoral education issues had been implemented. The results of the survey suggest that while some aspects of institutional policies governing postdoctoral education have become more clearly and commonly defined at AAU universities since 1998, postdoctoral education continues to evolve.

First, the survey results suggest that the definition of a postdoc, the characteristics of the postdoctoral appointment, and postdoc compensation are more similar than different at AAU institutions. This is evidenced by: 1) nearly all institutions using some form of the AAU recommended definition of a postdoc; 2) a common range of postdoctoral appointment terms and limits; most institutions having policies pertaining to postdocs teaching; 3) most institutions having policies specifying a minimum stipend level and a package of benefits; and 4) a significant majority of institutions offering health and dental insurance to postdocs and their families.

Second, it is evident that a dominant model for how institutions organize and administer postdoctoral education has not yet emerged. Institutions appear to be experimenting to find structures that fit their needs and the needs of postdocs. This is supported by the finding that only a slight majority of responding institutions said they have a central office or position that administers postdoctoral matters and those institutions reported having varying organizational structures and campus administrators in charge of postdoctoral matters.

Third, the responses to the open-ended survey questions (28-30) reveal that institutions believe postdoctoral education is working well for the most part, but that there is room for improvement and innovation. The responses to these questions provide examples of the day-to-day issues confronting postdocs and the challenges institutions face in addressing their needs.

Despite the limited scope of this survey, the results provide useful and contemporary information about the state of postdoctoral education at AAU universities. It can provide campus leaders responsible for postdoctoral education with markers to help guide their decisions.

Tabulation Survey Responses

Question	**Responses**	
Do you have an official, institution-wide definition of a postdoc?	31: Yes 8: No	
Please indicate how your institution classifies postdocs:	24: Postdoc (separate category) 7: Other 4: Staff 3: Faculty 1: Student	
How long is the term of postdoctoral appointment at your institution?	10: 3 years 9: 1 year 7: No limit 7: 5 years 3: 2 years 2: 4 years 1: 6 years	
Does your institution limit how long a person can be a postdoc?	29: Yes 10: No	
If YES, what is your institution's upper limit in years that a person can be a postdoc?	16: 5 years 5: 6 years 5: 3 years 2: 7 years 1: 4 years	
How many postdocs did your institution have in 2004 in the following disciplines?	**Avg. Per Institution:** Life Sciences: 252 Physical Sciences, Math and Engineering: 131 Social and Behavioral Sciences: 15 Humanities: 5 Other: 34 Unknown: 28	**Percentage of Total:** Life Sciences: 54% Physical Sciences, Math and Engineering: 28% Social and Behavioral Sciences: 3% Humanities: 1% Other: 7% Unknown: 6%
How many foreign-national postdocs did your institution host in 2004?	0-49: 3 50-99: 5 100-149: 2 150-199: 6 200-249: 6 250-299: 4 300-349: 5 350-399: 2 500-549: 1 550-599: 2 600-649: 1 700-749: 1 950-999: 1	

Please indicate how many foreign-national postdocs your institution hosted in 2004 from each of the following countries/geographic areas: (continued)	**Average Per Institution:** China: 70 Western Europe: 61 All Other Nations: 45 India: 25 Japan: 18 South Korea: 16 Canada: 11 Eastern Europe: 11 Middle East: 9 South America: 7 Russia: 5 Taiwan: 5 Australia, New Zealand, Oceania: 4 Africa: 3 Mexico: 2 Southeast Asia: 2 South Asia: 2 East Asia: 2 Central America: 1	
Please indicate the number of postdocs that were at your institution in 2004 for each of the following categories:	**Average per institution:** White: 206 Asian: 154 Black: 13 Hispanic: 13 Native American/ Pacific Islander: 1 Other/Unknown: 59	**Percentage of Total:** White: 46% Asian: 35% Black: 3% Hispanic: 3% Native American/ Pacific Islander: 0.2% Other/Unknown: 13%
Please indicate the number of postdocs that were at your institution in 2004 for each of the following categories:	Male: 10,939 Female: 6,096	(64%) (36%)
Does your institution provide opportunities for postdocs to teach?	34: Yes 5: No	
If YES, does your institution have a formal policy on postdocs teaching?	27: Yes 7: No	
Does your institution have a policy specifying a minimum stipend level for postdoctoral appointments?	26: Yes 13: No	
In general, are postdoc stipend levels at your institution set by:	15: A combination of internal and external stipend schedules 14: Individual units at your institution 8: An institution-wide policy 2: One or more externally specified stipend schedules (e.g. NSF, NIH, etc.)	
Do institutional postdoctoral stipend levels increase as postdoctoral experience increases?	33: Yes 6: No	

Please estimate to the best of your knowledge the number of postdocs that receive their PRIMARY financial support from the following sources:	**Average Per Institution:** NIH research grant: 4,121 Institution: 1,272 NSF research grant: 900 Private Foundations or Organizations: 885 NIH National Research Service Award: 564 DOD research grant or fellowship: 350 Industry: 305 Department of Energy research grant or fellowship: 298 Other government source: 287 USDA research grant or fellowship: 188 NSF fellowship: 37 Other: 2,638	**Percent Per Institution:** NIH research grant: 34.8% Institution: 10.7% NSF research grant: 7.6% Private Foundations or Organizations: 7.5% NIH National Research Service Award: 4.8% DOD research grant or fellowship: 3.0% Industry: 2.6% Department of Energy research grant or fellowship: 2.5% Other government source: 2.4% USDA research grant or fellowship: 1.6% NSF fellowship: 0.3% Other: 22.3%
Does your institution have a policy specifying a minimum set of employer-offered benefits for postdocs?	34: Yes 5: No	
Please indicate which of the following benefits your institution offers to postdocs.	**Number of institutions offering:** 39: Health insurance 36: Vacation and sick leave 35: Dental insurance 30: Parental leave 30: Life insurance 22: Short-term disability insurance 22: Retirement plan 20: Flexible spending accounts 18: Tuition/fees for university courses 11: Child care 4: Subs. housing 25: Other	
Are the benefits you identified in the previous question offered to **ALL** postdocs at your institution?	14: Yes 25: No	
If NO, please describe the differences in the benefits offered to postdocs at your institution:	17: Employee status/funding source 4: Half-time or greater schedule required 1: Full-time or greater schedule required 1: Appointment term > 6 months required 1: Cannot offer to int'l postdocs	

Please indicate which of the following benefits your institution offers to the family members of postdocs.	36: 34: 13: 9: 8: 1:	Health insurance Dental insurance Life insurance Tuition/fees for university courses Vision insurance No benefits at all
Does your institution have a policy on deferring postdoctoral appointments?	11: 28:	Yes No
Does your institution provide on-campus housing options for postdocs?	15: 24:	Yes No
Does your institution publish (electronic or paper publication) institutional policies on postdoctoral appointments?	33: 6:	Yes No
Please indicate below which of the following areas your university provides institution-wide guidelines or policies specifically pertaining to postdocs on:	31: 29: 28: 27: 22: 22: 21: 18: 18: 15: 12: 7: 8: 5:	Vacation and sick leave Appointments/appointment letters Grievance procedures Minimum stipends and benefits Intellectual property rights Conflicts of interest Misconduct Performance evaluations Publication rights Outside consulting Mentoring Recruiting Other No guidelines/policies
Does your institution have a postdoctoral association organized by postdocs?	16: 23:	Yes No
If YES, what year was the postdoc organization formed on your campus?	1: 1: 1: 2: 2: 5: 1: 1:	1997 1998 1999 2000 2001 2002 2005 Unsure/did not say
Does your institution have a central administrative officer or office responsible for postdoctoral education?	22: 17:	Yes No
If YES, what year was this office or position created?	2: 6: 10: 4:	1980s 1990s 2000s Unsure/did not say

If YES, who does this office or officer report to?	4:	Dean
	4:	Dean and Vice Chancellor
	4:	Provost
	2:	Vice Chancellor and Associate Dean
	1:	Executive Vice Chancellor
	1:	Vice President
	1:	Vice Provost
	1:	President and Provost
	1:	Provost and Vice President
	1:	Office of Graduate Studies
Does your institution evaluate postdoctoral policies and procedures? If so, is this done formally or informally, on an institution-wide basis or on a department/unit basis?	20:	Formally, institution-wide
	7:	Informally, institution-wide
	7:	Institutional unit
	5:	Do not review policies regularly
Does your institution provide certificates of completion for postdoctoral appointments?	8:	Yes
	31:	No
If YES, how long has your institution provided certificates of completion for postdoctoral appointments?	2:	Under 10 years
	6:	Between 20 and 30 years
If NO, does your institution provide letters of completion for postdoctoral appointments?	2:	Yes
	30:	No
If YES, how long has your institution provided letters of completion for postdoctoral appointments?	1:	Over 20 years
	1:	Did not say
Does your institution provide career advising and job placement services geared specifically for postdocs?	16:	Yes
	23:	No
If YES, are academic departments and faculty members involved in the provision of career advising and job placement services?	15:	Yes
	2:	No
If YES, are faculty members offered incentives to provide postdoc career advising and job placement services?	0:	Yes
	39:	No
Does your institution conduct an exit survey of departing postdocs on their satisfaction with their experience?	4:	Yes
	35:	No
If YES, Does your institution's exit survey include questions about postdoc satisfaction?	4:	Yes
	0:	No
Does your institution collect any data on placement or other career outcomes information about former postdocs?	3:	Yes
	36:	No
Do you perceive postdoctoral education on your campus to be working well?	27:	Yes
	12:	No

If not, what improvements do you think are needed?	4:	Career development
	4:	Better organization/policies
	3:	Salaries/benefits/funding
	2:	Community-building
	2:	Training in non-lab career skills
	3:	Exit surveys/tracking
	1:	Improved communication
	1:	Formal postdoc association
	1:	Standard set of benefits and policies, regardless of funding source
	1:	Expanding policies concerning part-time appointments to address work-life issues
What do you perceive are the barriers to achieving improvements to postdoctoral education on your campus?	14:	Funding
	8:	Lack of institution-wide support
	7:	Faculty culture
	4:	Isolation of postdocs in labs
	3:	Lack of recognition for career needs other than lab research
	2:	International postdoc issues/visas
	2:	Postdoc workloads
	2:	Need to improve situation for non-employee postdocs
	1:	Need for cheap labor in sciences
	1:	NIH funding practices
On a national policy scale, what is the most important thing that can be done on postdoctoral education that has not happened?	8:	Better guidelines and policies
	7:	End to policies requiring non-employee status for some postdocs
	6:	Expansion of career opportunities/training
	3:	Improvements to visa policies
	3:	Better awareness of postdoc issues
	3:	Reduction in postdoc terms/minimum standard for terms
	1:	Central office on every campus
	1:	Exit surveys
	1:	Health insurance for all postdocs
	1:	Higher salaries and benefits
	1:	Support for National Postdoctoral Association goals
	1:	Recognition of research enterprise dependence on postdocs

Appendix A

Association of American Universities
Postdoctoral Education Survey

SURVEY DESCRIPTION

The AAU Graduate and Postdoctoral Education Committee is undertaking a survey of AAU members on the condition of postdoctoral education. The survey reflects the recommendations made in the 1998 AAU report on postdoctoral education issues. The data gathered will be used to examine the current state of postdoctoral education at AAU universities and the extent to which the recommendations in the 1998 report have been implemented. Final survey results will be shared with all AAU institutions.

Your institution's participation in the survey is important. In order to complete the survey, you will want to collect demographic data about your institution's postdoc population, as well as information regarding institutional postdoc policies. With the requisite information in hand, we estimate that the survey will take a total 30 minutes to complete. To better facilitate your completing the survey, you may print out the full survey by clicking here **[INSERT HTML LINK].**

For your reference only, a copy of the 1998 AAU Report on Postdoctoral Education can be found at: http://www.aau.edu/reports/PostDocRpt.pdf. This report is not needed to complete the survey.

We appreciate your taking the time to participate in this survey.

Please contact Matt Owens of the AAU staff with questions or comments matt_owens@aau.edu or 202-408-7500.

SURVEY RESPONDENT INFORMATION

Name: _____
Title: _____
Institution: _____
Phone number: _____
Email: _____

POSTDOC SURVEY QUESTIONS

1. Does your university have an official institution-wide definition of a postdoc?
___Yes ___No

1a. If YES, please provide your institution's definition of a postdoc.
_____

_____
_____

2. Please indicate how your institution classifies postdocs:

____ Postdoc (as a separate classification distinct from students, staff, or faculty)
____ Student
____ Faculty
____ Staff
____ Other, Please specify _____

3. How long is the term of postdoctoral appointment at your institution?

____ No limit
____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 years
____ More than 6 years

4. Does your institution limit how long a person can be a postdoc?
___Yes ___No

4a. If YES, what is your institution's upper limit in years that a person can be a postdoc?

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 years
____ 7 years
____ 8 years
____ 9 years
____ 10 years
____ More than 10 years

5. How many postdocs did your institution have in 2004 in the following disciplines?
(If none for a particular category, please enter the number zero)

Life Sciences ____
Physical Sciences, Mathematics, & Engineering ____
Social and Behavioral Sciences ____
Humanities ____
Other _____
Unknown _____

***Note*: The sum of these responses should equal the total number of postdocs at your institution.**

6. How many foreign-national postdocs did your institution host in 2004? _____

7. Please indicate how many foreign-national postdocs your institution hosted in 2004 from each of the following countries/geographic areas:

Australia, New Zealand, Oceania ____
Africa (*includes Egypt*) ____
Canada ____
Central America ____
China ____
Eastern Europe (*includes Albania, Armenia, Azerbaijan, Belarus, Bosnia, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Herzegovina, Hungary, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, and Ukraine*) ____
Western Europe (*includes all other European nations, including UK and Ireland*) ____
India ____
Japan ____
Mexico ____
Middle East (*includes Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Kyrgyzstan, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Tajikistan, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan and Yemen*)
East Asia (*includes Mongolia and North Korea*) ____
Southeast Asia (*includes Brunei, Cambodia, East Timor, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, and Vietnam*) ____
South Asia (*includes Afghanistan, Bangladesh, Bhutan, Myanmar, Nepal, Pakistan, and Sri Lanka*) ____
Russia ____
South America ____
South Korea ____
Taiwan ____
All Other Countries ____

***Note*: The sum of these responses should equal the total number of foreign national postdocs at your institution.**

8. Please indicate the number of postdocs that were at your institution in 2004 for each of the following categories:
(if none for a particular category, please enter the number zero)

White ____
Black ____
Asian ____
Hispanic (non-black, non-white) ____
Native American / Pacific Islander _____
Other / Unknown _____

***Note*: The sum of these responses should equal the total number of postdocs at your institution.**

9. Please indicate the number of postdocs that were at your institution in 2004 for each of the following categories:

Male _____
Female ____

***Note*: The sum of these responses should equal the total number of postdocs at your institution.**

10. Does your institution provide opportunities for postdocs to teach?
___Yes ___No

10a. If YES, does your institution have a formal policy on postdocs teaching?

___Yes ___No

11. Does your institution have a policy specifying a minimum stipend level for postdoctoral appointments?
___Yes ___No

12. In general, are postdoc stipend levels at your institution set by:
___Individual units at your institution
___An institution-wide policy
___One or more externally specified stipend schedules (e.g. NSF, NIH, etc.)
___A combination of internal and external stipend schedules

13. Do institutional postdoctoral stipend levels increase as postdoctoral experience increases?
___Yes ___No

14. Please estimate to the best of your knowledge the number of postdocs that receive their PRIMARY financial support from the following sources:
(if none for a particular category, please enter the number zero)

Your institution ____
National Institutes of Health research grant ____
National Institutes of Health National Research Service Award ____
National Science Foundation research grant ____
National Science Foundation fellowship ____
Department of Energy research grant or fellowship ____
Department of Defense research grant or fellowship ____
Department of Agriculture research grant or fellowship ____
Other government source (Non-U.S. government, e.g. state or foreign government) ____
Private Foundations or Organizations ____
Industry ____
Other ____

15. Does your institution have a policy specifying a minimum set of employer-offered benefits for postdocs?

___Yes ___No

16. Please indicate which of the following benefits your institution offers to postdocs.

No benefits offered ____
Vacation and Sick Leave ____
Health insurance ____
Dental insurance ____
Life insurance ____
Retirement plan ____
Child care ____
Paternity/maternity leave ____
Subsidized housing ____
Tuition/fees for courses at your institution ____
Flexible Spending Accounts _____
Short-term Disability Insurance _____
Other ____ Please specify: _____

17. Are the benefits you identified in the previous question offered to **ALL** postdocs at your institution?

___Yes ___No

15a. If NO, please describe the differences in the benefits offered to postdocs at your institution.

_____
_____
_____
_____

16. Please indicate which of the following benefits your institution offers to the family members of postdocs.

No benefits offered ____
Health insurance ____
Dental insurance ____
Life insurance ____
Tuition/fees for courses at your institution ____
Other ____ Please specify _____

17. Does your institution have a policy on deferring postdoctoral appointments? (example: deferring an appointment until completion of a dissertation or for family or personal reasons.)

___Yes ___No

18. Does your institution provide on-campus housing options for postdocs?

___Yes ___No

19. Does your institution publish (electronic or paper publication) institutional policies on postdoctoral appointments?

___Yes ___No

20. Please indicate below which of the following areas your university provides institution-wide guidelines or policies specifically pertaining to postdocs on:

No guidelines or policies ____
Minimum stipend and benefits ____
Vacation and Sick Leave ____
Performance evaluations ____
Mentoring ____
Publication rights ____
Intellectual property rights ____
Misconduct ____
Grievance procedures ____
Conflicts of interest ____
Outside consulting ____
Recruiting ____
Postdoc Appointments / Appointment letters ____
Other ____ Please Describe: _____

21. Does your institution have a postdoctoral association organized by postdocs?
___Yes ___No

21a. If YES, what year was the postdoc organization formed on your campus? _____

22. Does your institution have a central administrative officer or office responsible for postdoctoral education?
___Yes ___No

22a. If YES, what year was this office or position created? _____

22b. If YES, who does this office or officer report to? _____
_____
_____
_____

23. Does your institution evaluate postdoctoral policies and procedures? If so, is this done formally or informally, on an institution-wide basis or on a department/unit basis? Please explain.
_____
_____
_____
_____

24. Does your institution provide certificates of completion for postdoctoral appointments?
___Yes ___No

24a. If YES, how long has your institution provided certificates of completion for postdoctoral appointments?

_____ years

24b. If NO, does your institution provide letters of completion for postdoctoral appointments?

24c. If YES, how long has your institution provided letters of completion for postdoctoral appointments?

_____ years

25. Does your institution provide career advising and job placement services geared specifically for postdocs?

___Yes ___No

25a. If YES, are academic departments and faculty members involved in the provision of career advising and job placement services for postdocs?

___Yes ___No

25b. If YES, are faculty members offered incentives to provide postdoc career advising and job placement services?

___Yes ___No

26. Does your institution conduct an exit survey of departing postdocs on their satisfaction with their experience?

___Yes ___No

26a. If YES, Does your institution's exit survey include questions about postdoc satisfaction?

___Yes ___No

27. Does your institution collect any data on placement or other career outcomes information about former postdocs?

___Yes ___No

28. Please describe a policy, procedure, event, or best practice related to postdoctoral education that works well at your institution.

_____
_____
_____

29. Do you perceive postdoctoral education on your campus to be working well? If not, what improvements do you think are needed?

_____
_____
_____

30. What do you perceive are the barriers to achieving improvements to postdoctoral education on your campus?

_____
_____
_____

31. On a national policy scale, what is the most important thing that can be done on postdoctoral education that has not happened?

_____
_____
_____

Please use the following 1-5 scale to rank the ease-of-use of this online survey where 1 indicates hard to use and 5 indicates easy to use.

___ 1
___ 2
___ 3
___ 4
___ 5

Did you have any difficulty?

___ Accessing the site
___ Answering the questions
___ Submitting your responses
___ No difficultiers
___ Other, please specify _____

Please describe any problems you had accessing this site, answering the questions, or submitting your response.

_____
_____
_____

In comparison to a traditional print survey, did you find this online survey to be:

___ easier to complete
___ about the same
___ more difficult to complete

Do you have any suggestions for improvement to future AAU online surveys?

_____
_____
_____

Appendix B

Association of American Universities
Committee on Postdoctoral Education Report
Recommendations
March 1998

The Committee strongly recommends that the following definition of a postdoctoral appointment be universally adopted and consistently applied by all universities, government agencies, and private foundations involved in postdoctoral education:

Definition of a Postdoctoral Appointment

- The appointee was recently awarded a Ph.D. or equivalent doctorate (e.g., Sc.D., M.D.) in an appropriate field; and
- the appointment is temporary; and
- the appointment involves substantially full-time research or scholarship; and
- the appointment is viewed as preparatory for a full-time academic and/or research career; and
- the appointment is not part of a clinical training program; and
- the appointee works under the supervision of a senior scholar or a department in a university or similar research institution (e.g., national laboratory, NIH, etc.); and
- the appointee has the freedom, and is expected, to publish the results of his or her research or scholarship during the period of the appointment.

The Committee recommends that each university act promptly to develop policies and practices for systematically incorporating postdoctoral education into its overall academic program. To assist in accomplishing this systematization of postdoctoral education, the Committee makes the following suggestions as a model for consideration by individual institutions:

1) Consistent with the definition above, the postdoctoral appointment should remain a temporary appointment with a primary purpose of providing additional research or scholarly training for an academic or research career.
2) A central administrative officer should be assigned responsibility for monitoring postdoctoral policies to assure consistent application of those policies across the institution.
3) The university should establish core policies applicable to postdoctoral appointments. These policies should cover such matters as employment or student category; realistic institutional minimum stipends and benefits; fractional appointments; workers' compensation; publication rights; faculty responsibilities for mentoring and evaluation of postdoctoral appointees; career advising and job placement; misconduct; grievance procedures; and education in research protocol issues such as ethics, conflicts of interest, and outside consulting. In particular, all postdoctoral appointees should have access to a comprehensive health care plan for themselves and their families.
4) The university should establish explicit guidelines for recruitment and appointment of postdocs and for the duration of their appointments; such guidelines should take into account time spent in prior postdoctoral appointments at other institutions. Initial postdoctoral appointments should be no longer than two to three years in duration, and

should be renewed only on the basis of career advancement and achievement by the postdoctoral appointee. As a general rule, the total time spent in postdoctoral appointments by a given individual should not exceed six years. Exceptions to such guidelines should be granted only after careful review by the department and an appropriate central administrative officer.

5) All postdoctoral appointees should receive a letter of appointment jointly signed by the faculty mentor and the department chair or other responsible university official; a statement of goals, policies, and responsibilities applicable to postdoctoral education should accompany the letter.
6) The university should periodically evaluate the balance of interests among postdoctoral appointees, their faculty mentors, their home departments, and the institution as a whole, in order to assure that the legitimate educational needs and career interests of postdocs are being fully met.
7) Departments and faculty mentors should provide career advising and job placement assistance appropriate to their postdoctoral appointees.
8) The university should provide a certificate or letter of completion for postdoctoral appointments to assist postdocs in securing subsequent employment.

In addition to the foregoing suggestions for consideration by individual institutions, the Committee recommends that each academic discipline consider the role of postdoctoral education in professional development in that discipline, and give careful attention to the extent to which postdoctoral education should be viewed as elective or obligatory by students for whom entry into that discipline is their primary professional goal.

Appendix C

AAU Member Universities that Responded to the 2005 Postdoctoral Education Survey (39 of 62 institutions)

Brandeis University
Carnegie Mellon University
Case Western Reserve University
Emory University
Indiana University
Iowa State University
Massachusetts Institute of Technology
Michigan State University
New York University
Northwestern University
The Ohio State University
The Pennsylvania State University
Princeton University
Purdue University
Rice University
Rutgers, The State University of New Jersey
Stanford University
University at Buffalo–State University of New York
University of California, Berkeley
University of California, Davis
University of California, Irvine
University of California, Los Angeles
University of California, San Diego
University of California, Santa Barbara
University of Illinois, Urbana-Champaign
University of Iowa
University of Kansas
University of Maryland at College Park
University of Minnesota, Twin Cities
University of Nebraska, Lincoln
University of North Carolina at Chapel Hill
University of Oregon
University of Pittsburgh
University of Rochester
The University of Texas at Austin
University of Virginia
University of Wisconsin-Madison
Washington University in St. Louis
Yale University

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