

Postdoc Appointments: Exploring Motivations, Perceptions, and Experiences

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Background and Purpose

To better understand how postdoctoral (postdoc) experiences relate to educational and labor force outcomes, the Division of Science Resources Statistics (SRS) at the National Science Foundation (NSF) is engaged in a multi-year project to determine the feasibility of gathering more in-depth information on postdocs in the United States. Current government-collected information provides counts of and limited characteristics on postdocs. However, it does not provide information on neither foreign-degreed doctoral holders in U.S. postdoc positions nor on how postdoc experiences relate to future outcomes. Through the Postdoc Data Project, SRS is investigating the need for and the feasibility of gathering a broad range of postdoc information across fields of study and employment sectors.

To explore such issues, the National Opinion Research Center (NORC) and George Balch (Balch Associates), in collaboration with SRS, designed and implemented a series of focus groups with prospective and current postdocs, as well as with recent or near-graduation research doctorate recipients without plans to apply for a postdoc position. Overall, these focus groups were intended to explore and understand motivations, expectations, and perceptions -- particularly among recent science and engineering doctoral graduates -- in deciding whether and how to pursue a postdoc position.

Specific focus group learning objectives included:

- Understanding professional and personal motivations for seeking and accepting or not seeking or accepting a postdoc appointment;
 - For those with a postdoc or aspirations toward one, identify:
 - Career goals and how a postdoc relates to them;
 - Sources of information about postdoc possibilities and expectations;
 - Perceptions/expectations of/for a “successful” postdoc experience;

- Kinds of support expected (beyond research training);
 - For those with non-postdoc plans or aspirations, identify:
 - Career goals;
 - Sources of information about career possibilities and expectations;
 - How they compare a postdoc with their actual choice;
- Identifying ways to find, contact, and motivate a broad range of postdocs to respond to a survey or other mechanism for obtaining further feedback on the postdoc experience.

Methods

Balch Associates conducted a total of six focus groups in the latter half of 2005 with a total of 52 research doctoral students near graduation or recently graduated: two face-to-face (FTF) groups from a local university during August 2005 and four computer-assisted telephone (CAT) groups of graduates from institutions across the continental United States in mid-October of 2005. Four of the six groups were composed of students planning to take or currently in a postdoc; two (one for each focus group modality) were composed of recent or near-graduates without plans for a postdoc position.

Approximately one-half of each focus group included participants of foreign and/or minority origin in order to explore concerns particular to such individuals. The group sessions were conducted in three sets of pairs, with ample time between sets for review, learning, and adjustment of methods to build on that learning.

Face-to-Face (FTF) Focus Groups

FTF is the original modality for focus groups, at a time prior to the invention of modern remote technologies, such as duplex telephones and the Internet. FTF focus

groups offer opportunities to read body language, to handle materials being discussed (if any), and to explore perceptions in a particular local setting. In the current situation, they also permitted us to leverage connections with local institutions for recruitment in NORC's home setting, to test-drive the modality, and to compare the process and findings of this modality with those from more geographically diverse groups conducted by a remote method, that of computer-assisted telephone (CAT). Furthermore, the SRS believed that FTF would provide reluctant participants a setting where they would not feel the need to censor themselves because they would be in a group of people who were in a similar situation.

For this study, two 90 minute face-to-face (FTF) focus groups were conducted with research doctoral graduates (or near graduates) – one group with those planning to take postdoc appointments and the other with those not planning to take such appointments – on August 24th, 2005, starting at 11 am and 2 pm Eastern Standard Time. These two focus groups were held at a professional facility specializing in hosting and conducting focus groups.

Computer-Assisted Telephone (CAT) Focus Groups

CAT focus groups were deemed particularly suitable for this exploratory research phase because they provide the most cost-effective and efficient method for meeting with a variety of target audience members across the nation representing a range of geographic locations and types of institutions. CAT focus groups are also helpful for assuring anonymity and a sense of privacy that encourages open discussion about sensitive topics.¹

¹ Balch, G.I. C.A.T. (Computer-Assisted Telephone) Focus Groups: Better, Faster, Cheaper Focus Groups for the "Hard-To-Reach." *Social Marketing Quarterly*, Vol. 7 (Winter 2001) no. 4, pp. 38-40; Balch, G.I. Telephone and Computer-Assisted Telephone (CAT) Focus Groups: A Technology Transfer from Commercial to Nonprofit and Public Sector Marketing (working paper); Silverman, G (1994). *Introduction to telephone focus groups*. Orangeburg, N.Y.: Market Navigation, Inc.

For this study, four CAT focus groups were conducted – three with doctoral graduates who had just started their postdoc appointments and one with recent doctoral graduates who had not taken such appointments – on October 18th and 27th, 2005, with groups beginning at 6:00 p.m. and 8:00 p.m. Eastern Standard Time.

Recruitment

Recruiting involved a variety of techniques, depending on which participant characteristics were needed. For all groups, NORC contacted the Institution Contacts (ICs)² to establish whether or not they would be willing to disseminate an email notice and flyer detailing the focus groups. If the IC agreed, NORC sent the notice and flyer via email. NORC asked the ICs to send the email to all doctoral students who were expected to graduate between spring and fall of 2005 for the FTF groups, and between spring and summer of 2005 for the CAT groups. NORC asked ICs to post the flyer in strategic points on their respective campuses. Follow-up contact was made with the ICs to ensure that these steps were taken and to find out if the IC needed additional information or assistance from NORC. For the FTF groups, the NORC recruiter also posted flyers across three local universities, contacted all international students at one of these universities via a special email list, and contacted all department administrators at this university to distribute the email notice to the doctoral students in their respective departments. Participants often mentioned that they heard about the focus groups via the email solicitation.

In addition to these efforts, the NORC recruiter contacted the National Institutes for Health (NIH), the National Postdoctoral Association (NPA), and a wide variety of postdoc associations at various U.S. National Labs, universities, and private research facilities to request their assistance in recruiting for the CAT focus groups. The NIH posted the email notice on their postdoc email lists, which informed all NIH postdoc

² Institution Contacts are university staff members who assist NORC's Survey of Earned Doctorates (SED) team in their data collection efforts. ICs typically assist in the distribution and collection of the SED questionnaire and field questions from students. For more information on the SED, see <http://norc.uchicago.edu/issues/docdata.htm>

fellows about the focus groups. The NPA also published the email notice in their newsletter. NORC used a list of postdoc associations maintained by the NPA to contact these associations. A wide variety of such postdoc associations agreed to post an email notice detailing the focus groups to their members. NORC recruited for the CAT focus group for doctoral graduates who did not pursue a postdoc by directly contacting completers of the Survey of Earned Doctorates (SED) via email through the contact information they provided on the SED questionnaire.

The recruitment email notice and flyer instructed students to call SED's toll-free number, email the SED email account, or email the NORC recruiter directly if they were interested in participating in the focus groups. The NORC recruiter followed up with all interested students by returning the phone call and sending an email that included a respondent screener/background form (see Appendix B) as an attachment. The NORC recruiter requested that students return the screener/background form within two days of receipt. Once the screener/background form was returned, the student's information was entered into a spreadsheet for tracking.

The background/screener form facilitated placement of students in the appropriate focus group (see Appendix B for the Participant Recruitment Background/Screening Form). The only screening criteria *necessary* for inclusion in the focus groups were postdoc status and graduation date. Race and ethnicity were also considered in the screening process, as a primary goal of this project was to explore the opinions and experiences of minority students. The recruiter also had a goal to recruit participants who were either foreign nationals or who had received a degree abroad. Participants were placed in the appropriate group based on whether they were planning or not planning to take a postdoc (in the FTF groups), or whether they had or had not done so (in the CAT groups). Participants had to have graduated between spring and summer of 2005 (those identifying themselves as fall 2005 graduates were also included in the FTF focus groups). These ranges of graduation dates were stated clearly in the recruitment materials (see Appendix B). The NORC recruiter followed up with interested participants via confirmation phone calls, emails, and letters until a diverse quota was reached across

gender, race/ethnicity, field of study, and institution type/size/location. Alternate students were identified for each group to replace no-shows.

Upon completion of the groups, the recruiter sent thank you letters to all participants. Focus group participants received a \$75 honorarium for their involvement and could choose to receive it directly or to have it donated to the charity of their choice. Participants will receive a copy of this report and be invited to comment on its accuracy and provide any additional thoughts. This is intended to ensure accuracy and completeness of findings and to reinforce collaboration.

Key Participant Characteristics

Overall, the 52 focus group participants were primarily from the natural/medical sciences (39) followed by engineering (6) and social science (5), and one each in humanities and education. NIH was the dominant source of the funding for those in postdoc positions. Participants had achieved their degrees both in U.S. institutions and abroad. This section summarizes key characteristics of the sample (see Table 1 below). For more detailed descriptions, see Appendix A.

Table 1 – Participants’ Key Characteristics

		FTF	CAT
All		17	35
Field of Study	Natural/Medical Sciences	12	28
	Social Sciences	2	3
	Engineering	1	4
	Humanities	1	0
	Education	1	0
Citizenship	U.S.	8	24
	Non-U.S.	9	11
Gender	Female	7	18
	Male	10	17
Race/Ethnicity	Asian	7	8

American Indian or Alaska Native	0	1
Black	0	5

Table 1 – Participants’ Key Characteristics, continued

		FTF	CAT
Race/Ethnicity	Native Hawaiian or Pacific Islander	0	0
	White	10	21
	Hispanic or Latino*	0	3
Foreign Degrees	Bachelor’s	8	10
	Master’s	5	8
	Doctorate	0	3

* Hispanic or Latino participants are counted twice in this table: once for their race and once for Hispanic or Latino ethnicity.

FTF Group Participants

Twelve of the seventeen participants in the FTF groups were in the natural/medical sciences, two were in social science, and one each was in humanities, engineering, and education. Nine were non-citizens (from Asian and Middle Eastern countries), and eight had at least one degree from a foreign university. The NORC recruiter sought to identify, from a list of international students at a local university, postdocs who had received their doctoral degree at a non-U.S. institution but none were found. Ten participants were non-Hispanic white, and the remaining seven were Asian. Ten were male, seven female. The seventeen participants in these groups came largely from two doctorate granting institutions in the Chicago area: the University of Chicago (11) and the University of Illinois at Chicago (4).

CAT Group Participants

Thirty-five recent Ph.D. graduates from institutions across the U.S. participated in the computer-assisted telephone (CAT) focus groups. Most were in the natural/medical sciences (28), then engineering (4) and social science (3). Eleven were non-U.S. citizens. Ten had at least one degree from a foreign university, and three of these participants

earned their doctorate outside of the U.S. The CAT groups also included a racially and ethnically diverse set of participants - nineteen were non-Hispanic white, two were Hispanic white, eight were Asian, five were black, and one was Native American/Hispanic. The gender breakdown was nearly even, with seventeen males and eighteen females.

Data Collection and Analysis

George I. Balch, Ph.D., moderated the focus groups, using separate discussion guides appropriate for postdoc planners and non-planners, developed as a collaborative effort with Balch Associates, NORC and SRS. (See Appendix C for the discussion guides.) Discussion topics included:

- What is a “post doc appointment” in focus group participants’ minds?
- Path(s) to a postdoc or non-postdoc position – what triggered interest and what drew/draws them into the position?
- Expectations of their postdoc or non-postdoc appointment: the job and the benefits (including salary);
- Ways to obtain postdoc participation in feedback to NSF;
- Additional postdoc experiences that participants would appreciate.

All focus groups were observed by NORC and SRS representatives, as well as tape recorded, and transcribed (with consent of the participants). At one point during each focus group, observers were consulted unobtrusively for needed clarification or additional questions, if any – either in the observation room behind the one-way mirror for the FTF groups or on a separate telephone line for the CAT groups. No new questions were raised. Transcripts were reviewed (and tapes checked, where necessary)

for similarities and differences within and across groups. Draft reports were reviewed by all observers and revised as needed.

Key Findings

Here we report the findings most relevant to the research objectives: (1) to understand professional and personal motivations for seeking and accepting or not seeking or accepting a postdoc appointment and (2) to identify ways to find, contact, and motivate a broad range of postdocs to respond to a survey or other mechanism for obtaining further feedback on the postdoc experience. These findings, except where otherwise noted, are based on what participants expressed with some consistency.

What is a “Postdoc”?

For focus group participants in the natural/medical sciences and some in engineering, a postdoc appointment generally is a short (2-4 year) “bridge period” between the research doctorate and either of two research career ladders: a tenure track academic appointment or a good industry job. This bridge offers the trainee more specialized training as an employee – not a student -- under a Principal Investigator’s (“mentor’s”) supervision, either in their current field, in a complementary field, or in a very different field, toward developing the trainee’s own long term research agenda. The trainee enters as a newly minted research doctorate expecting to leave as an independent scientist who has become an independent thinker, mastered relevant research techniques, theory and professional skills (such as proposal writing and management) and is able to develop one’s own research plan, obtain funding, execute research, produce research publications, and build a network of contacts to succeed in getting a good job and a high level research career.

During this bridge period, the trainee concentrates on shaping and crafting his or her own research program, freed largely from administrative, course work, and teaching

obligations. The trainee is also freed from a dissertation advisor's demands and protection, so that he or she must "carry the ball" – independent projects. This freedom allows the trainee to delve into different fields, take risks, and achieve a high level of productivity that provides momentum for the career to come. A trainee builds a research "corpus that is yours [his or hers]" and proves to prospective employers, peers, and himself or herself that this is the right career.

Those in the social sciences reported more variation in the nature of postdoc appointments. A postdoc may involve some teaching responsibilities, some training, and/or publishing the individual's prior research (e.g., the dissertation). Or it may involve conducting original research, not necessarily under a mentor. A humanities postdoc – according to the humanities focus group participant – is for making the individual's dissertation publishable. While variation in the nature of postdocs was reported, all postdocs said they knew where their funding came from and could tell whether they were being paid directly by the funder or through their institution (with some overhead taken out).

Paths Toward a Postdoc

Among current postdocs in the natural/medical sciences, initial interest in postdoc appointments often arose early in graduate school – from advisors who had been postdocs themselves, from current postdocs who taught their courses or ran their laboratories, or from other graduate students. A few had even developed an interest in a postdoc appointment in research laboratories or an industry internship as advanced undergraduates.

Most natural/medical science focus group participants, as well as three of the five engineers, considered a postdoc "normative," "automatic," "a given from day one in graduate school," "traditional," "natural," or "required" for a professional scientific career in academia (a tenure track position) or, increasingly, in industry. A few of these scientists had tested the normative expectation in the job market – both academic and

industrial and had it confirmed directly. They were unable to compete effectively for jobs because they lacked the independent research experience and publication record of those who had postdoc appointments and because many jobs explicitly required a prior postdoc appointment. Although not their first choice, these individuals then pursued postdoc opportunities. While a few thought there might be positions in small liberal arts colleges or industry without a postdoc, participants considered that increasingly less likely. Two engineers, neither of them interested in an academic career, managed to go directly into industry jobs; they believed that a postdoc was necessary only for an academic career. The postdoc planner FTF focus group participants in the natural/medical sciences had expectations similar to those in the CAT focus groups. Several of those with academic aspirations also expressed interest in obtaining teaching experience in their postdoc.

The social scientists reported more varied expectations of a postdoc appointment. The social scientists in the postdoc planner focus group each came to plan a postdoc appointment from a slightly different perspective. They did not consider a postdoc appointment necessary or common in their field. However, like the others, they did find it valuable to pursue a postdoc appointment. One considered it a good way to get a better academic position. Another specifically sought out a postdoc program that offered training in public health. A third was seeking a postdoc as a fallback, having failed to obtain the kind of academic appointment sought. The social scientists currently in postdoc positions had positive reasons: to get sufficiently immersed in research to make an informed decision about pursuing a full-time career in research or in clinical work; to become more competitive; to work with a particular researcher; or to try a specific new field of research. One accepted a postdoc position at a prestigious university that matched well that person's research interests. This person had applied for the position fortuitously, having only seen it on-line; it was the only offer this person received of many sought.

Commonly reported steps in pursuit of a postdoc position included receiving advice, Principal Investigator names, and contacts offered by one's thesis advisor;

pursuing e-mail and on-line announcements (e.g., from NIH); and seeking out and meeting in conferences and via e-mail Principal Investigators whose work might interest them (based on familiarity with their published research and/or advisors' suggestions). Sometimes word-of-mouth among peers and predecessor postdocs helped them connect and take the steps toward getting a postdoc (e.g., how to contact a PI).

Several graduates took the initiative via meetings or e-mail. Sometimes an e-mail to one potential employer was passed around to others in the institution or program and someone who received the email contacted the applicant about a position. At least one postdoc seeker even approached the professor to co-design a project and obtain a grant – in which they succeeded – and the postdoc seeker became a postdoc as co-PI.

Some individuals already knew with whom they wanted to work and pursued that PI directly, either at their own institution or elsewhere. And some were sought out and courted by a PI or institution or program. One, for example, received an unsolicited e-mail from a program for women and minority applicants – which ultimately resulted in a postdoc offered and accepted. Another was approached by a Principal Investigator at this person's poster session and then followed up via e-mail and an invitation to interview; that level of interest was so encouraging to the poster presenter that it resulted in accepting a postdoc position with that Principal Investigator.

The final step toward a postdoc was often an on-site interview, in which the interviewee carefully examined the PI and other postdocs in the laboratory to see how “happy” and “productive” the latter were. The applicants were also interested in how well the Principal Investigator's prior postdocs had succeeded. Overall, they judged the profile of the program, professor, or laboratory by the:

- Program research or training content relevant to career objectives;
- Opportunities for good publications, recommendations, and connections with good research and good research ideas;
- Good personal communication with the Principal Investigator.

Some sought more than research training. They looked for programs that would offer opportunities to learn how to write proposals, how to manage, or how to teach. Would the program offer that? Did the Principal Investigator have a good track record of “R01” (Research Project) grants³? (One person mentioned looking this up on the NIH CRISP -- Computer Retrieval Information System -- that lists funding to individuals for the past 30 years.)

While graduates in fields where postdocs were expected or were the norm reported their search as largely a matter of one individual (the prospective postdoc) seeking another individual (the prospective Principal Investigator), some social science graduates reported seeking a program rather than a person. They did not expect to be closely mentored in research as part of a Principal Investigator’s project. Indeed, they might be teaching or writing up their dissertation research. Others had a particular person or place in mind. Both kinds found success.

Paths Away From a Postdoc

Those focus group participants who did not seek a postdoc position or had taken a non-postdoc position mentioned several different motivations and experiences. Unlike those who sought a postdoc, these individuals did not mention getting inspiration, guidance and help for their career and employment search from their advisors, their institutions, the Internet, or any standard medium or method. They seemed to be seeking their own paths, and some were still early in the process. Interestingly, they intended to use their science in those paths, though not necessarily to conduct scientific research. They would consult, write, engage in public relations, or teach about science in a non-university setting.

³ The Research Project (R01) grant is an award made to support a discrete, specified, circumscribed project to be performed by the named investigator(s) in an area representing the investigator's specific interest and competencies, based on the mission of the NIH.

Some had not wanted an academic position at all, and had been confident that they needed no postdoc to join “industry.” A few of these had been offered and accepted very appealing research jobs – one in government, another in policy research -- even before completing their degree. None reported a faculty advisor or anyone else in their doctoral institution having guided them toward their position.

Others were still looking and hoping for non-postdoc research positions. Some foreign students who had not yet completed their dissertations thought that they might have to seek a postdoc (or a community college teaching job) as a fallback – or else their visas would run out and they would have to return home. They also felt that the postdoc was especially challenging for them: harder to obtain and, once obtained, harder to compete with other postdocs for jobs. They thought that some PIs might not be willing to pay the additional money necessary for their work visas; they could not apply for U.S. government grants; and in some universities a work visa (H1B) would not qualify them for a fellowship, but a scholar visa (J1) would. They thought that such obstacles to funding would make foreign students less competitive for postdocs and future academic jobs, but none of these foreign students reported direct experience with such obstacles. Indeed, many had not yet completed their doctoral programs or begun looking for a position.

Some of those in the physical/medical sciences had decided that they no longer enjoyed laboratory work and preferred using their science background for explaining, advising, or consulting on science in such roles as science writing, science public relations, or industry consulting for government or industry. One of these had turned down a postdoc position, feeling “burnt out” on doing research and needing a “clean break,” not a “fallback.”

Still others did not seek a postdoc at least at the time of their graduation because they had interests or had worked in fields that did not seem suitable for a postdoc (e.g., project management, architecture, higher education, documentary film making, and the humanities). Several with prior experience in particular fields sought positions in similar

or more specialized fields. One individual did not know if postdocs relevant to their doctoral field existed, and was not seeking one. Yet another wanted a break from research to try documentary film making or teaching (and, after some work in film making, was currently applying for a “teaching postdoc”). Finally, one person reported not seeking a postdoc for lack of a need for more time to get a dissertation published – the only kind of postdoc in that field known to that person. Of those who did not seek a postdoc and had completed their doctoral program, many did not have a permanent or full-time position and were exploring possible options. They did not report preparation, guidance, or assistance from their doctoral advisors for such exploration. At least one observed that professors did not know how to do that. No focus group participant challenged that assertion.

Other Criteria for Choosing a Particular Postdoc Position

Apart from the research and training opportunities offered by particular postdoc positions, focus group participants considered one other criterion critical: *location*. It was important enough to be both a deal starter and a deal breaker.

Some graduates began their search within a specific area or even a specific city to remain close to a spouse, significant other, or nuclear family. Some did not want to move their children from their current school. Others ruled out in advance some kinds of regions of the country or kinds of cities on the basis of lifestyle preferences, including how they might spend their leisure time (for which several strongly preferred urban, cosmopolitan places); or for their family (e.g., places without good schools, safe neighborhoods, employment opportunities for spouse); places isolated from other research institutions which might be good sources for developing their professional network; and climate. Even when location was not a key factor in their search, when faced with competing positions, some made location the decisive factor in their choice.

Benefits and salary were usually not critical factors in deciding to take or turn down a particular postdoc. Many considered benefits and salary fairly standard –

especially those with NIH funded positions. Nobody reported benefits affecting their decision. Some, however, made a choice among positions for the same salary based on substantial differences in the cost of living in the respective locations. Only one person reported having negotiated on salary: using a much higher industry salary offer as leverage, that person was able to negotiate some supplemental salary. That person admitted, however, that the postdoc would have been accepted in any case, because “the research is exactly what I wanted to do.” Another person negotiated the start date to accommodate the birth of a child. Nobody else even thought of negotiating, though none thought that they were being paid well. Indeed, one participant – a non-U.S. student – accepted a position and subsequently incurred a large amount of debt as a result of not inspecting the benefits package closely. A few graduates were aware of some postdoc positions that paid much better and some that paid much worse than the standard. They avoided the latter, but nobody reported going out of the way to obtain the former.

The Postdoc Position Itself

Responsibilities

Nearly all natural/medical science postdocs reported that their main responsibilities included producing papers, learning the research techniques of the lab, and applying these and their own prior research skills to a project. In the process, and often with direct consultation with the PI, they were expected to “go out there and become independent.” For some, additional responsibilities might include: helping to set up a lab in a new facility; working with an interdisciplinary faculty team on a self-directed research project related to the general project area of the faculty; or teaching.

Success

Focus group participants who planned or hoped for a postdoc and those who already had a postdoc often mentioned several criteria for a successful postdoc experience. These included several inter-related accomplishments and processes. All wanted a good job as an independent science researcher at the end, be it academic or

industrial, in which they could succeed. To get there, most agreed that they needed to achieve most, if not all, of the following:

- Publications (for some, particularly in prestigious journals);
- Good collaboration with colleagues for current and future work;
- Development of a good professional network;
- Acquisition of relevant research skills;
- Accomplishing one's independent project research goals;
- Carving out one's own area of research;
- Good relationships with one's mentor for learning, mutual respect, and good contacts and recommendations;
- Being able to submit strong grant proposals.

In addition, some individuals sought success in relation to their particular career hopes or perceived personal deficits. Some who expected to teach hoped to improve their teaching during their postdoc experience; others with the same hope believed that their prior experience and training had accomplished that. Some who wanted to learn a new field – perhaps a new discipline or even an entirely different field to which they wished to switch – wanted to acquire proficiency in the new discipline or field.

Failure

“Failure” in the postdoc experience depended more on the individual's personal goals. Focus group participants were hard pressed to think of concrete indicators of

criteria or examples of what might be “failure,” as distinguished from the absence of success. For example, a person who learns that he or she did not really like the intense pressures of an independent professional research career might be a personal success, rather than a personal failure. Failing to produce results in one’s research might be a failure, as might losing one’s self-confidence and hope. Also, failing to make any progress beyond a postdoc – or going from one postdoc to another – might be failure. Becoming absorbed in one’s work at the expense of one’s family might be another failure. Gaining nothing at all from one’s postdoc experience would also be a failure. Mostly, however, “failure” was failure to achieve one or more of the success factors mentioned earlier.

Support for Success

Support they felt they needed for success included:

- Colleagues, collaborators: people they could talk to and learn from;
- Programs that facilitate – but don’t mandate -- interaction among postdocs, including social interaction;
- Money to travel to professional conferences;
- Opportunities for exposure of their work to other professionals in meetings and publications;
- Regular meetings with their mentor to discuss their postdoc research, constructive interest in research progress and professional development;
- Freedom and respect from their mentor to shape and “own” their project and become a professional peer;
- Guidance in learning how to attack problems;

- Encouragement to think independently, develop their own ideas – even if they don't directly advance the Principal Investigator's project;
- An office, computer, research facilities, and helpful lab technicians;
- Good support staff, few administrative “hoops”;
- Some guidance or training in searching for a job.

In addition, some foreign scholars wanted more access to their institution's internal funds, since they could not apply for grants to U.S. government agencies.

Contact with Other Postdocs

Most of these focus group participants stay in touch with other postdocs via e-mail or occasionally see them at conferences, particularly those who had postdoc positions or were planning for them or had met other postdocs in various ways. They have met them in their graduate programs, in their current institutions – both in their lab, department, or school and in more social settings that some organizations have (such as postdoc associations). They meet foreign postdocs more often at conferences than elsewhere. Several noted, as well, the presence of many foreign postdocs in labs – at times outnumbering the U.S postdocs. Some postdocs mentioned meeting foreign postdocs while conducting research in other countries. While the postdocs in these focus groups stay in touch professionally with those in their field, they stay in closer touch with those who are their friends, usually from their graduate cohort.

To reach more postdocs they suggested contacting the postdoc associations that some universities have, as well as the National Postdoctoral Association that only several of them knew. To reach foreign postdocs and others they suggested the conferences that

they attend in the United States, which many foreign researchers attend, as well as national associations to which they belong, such as the American Society for Cell Biology.

Possible Feedback Incentives and Mechanisms from Postdocs to NSF

Participants identified several ways to engage themselves and others in providing further feedback on the postdoc experience. Having a valuable purpose for an important audience – and communicating that purpose - is critical. For example, such a purpose might be to gather data and report it to inform graduate students, postdocs, and policy makers about:

- The postdoc experience (positive and negative, such as importance of supervisors and satisfaction with them, how the postdoc is affecting one's future career);
- How people might seek and find an appropriate postdoc;
- How long people spend in a postdoc (by field of research);
- Typical postdoc expenses, salary, and the like, and satisfaction with pay (relative to their living expenses);
- How people manage family and postdoc life; and,
- Where international students get funding.

Other suggestions included:

- Enlist the cooperation of institutional administrators down to Department Heads and Principal Investigators, having them emphasize the importance of having the postdoc voice heard;

- Focus on the larger institutions to efficiently maximize the diversity of the sample;
- Make it part of the entry or exit process that Human Resources administers;
- Enlist the young professionals sections of professional organizations while they attend their meetings;
- Enlist national professional associations to promote and distribute the instrument or to contact their postdoc members;
- Enlist local postdoc associations to distribute a survey;
- Link participation to the funding or fellowship that postdocs receive – as a periodic obligation – perhaps biennial -- to the funding organization;
- Provide a cash incentive for participation; and,
- Contact people similar to the focus group participants to identify and refer other postdocs in appropriate categories, such as foreign and minority.

Mechanisms to gather information would have to be relatively brief and largely electronic, rather than by mail, with occasional focus groups or online qualitative research for depth.

Conclusions

Several key findings stand out among all six focus groups. One is that doctoral candidates and graduates in the natural/medical sciences – whether they have a postdoc

appointment or plan to get one – paint a rather consistent picture of the postdoc appointment: a “bridge period” for mentored training and research to produce independent researchers who get good research jobs in academia or industry and can perform them well. Nearly all participants reported similar motivations for seeking a postdoc: they considered it necessary preparation for such jobs, and they reported similar steps toward finding, choosing, and getting a postdoc. Their social scientist counterparts described somewhat more varied postdoc appointments and ways of seeking and finding them. The picture of motivations, interests, and experiences is even more varied among those who had not taken a postdoc appointment or who were not planning to do so. They did not mention being helped in their efforts to find a different path by advisors, peers, or predecessors.

Overall, postdocs and postdoc planners in the fields where postdocs are common relied heavily on their advisor for advice and contacts with prospective Principal Investigators suitable to their interests and skills. They also received advice and information from older peers, postdocs, and publicly available electronic sources, and they typically implemented the advice proactively and alone.

They sought a postdoc position that would most likely help them succeed in getting and doing the high level academic or industry research career they ultimately sought. Such a position would lead to research publications, a good network of colleagues for research, relevant research and management skills, good recommendations to prospective employers, and would be fostered by support from their mentor to develop their own projects and research program. Their employer – whether a university, national laboratory, government agency, or private business – would also be supportive in various ways.

Only one other factor figured heavily into these postdoc seekers’ employment search: location. It was both a deal starter – as individuals restricted their search to areas that would fit their family, lifestyle, and other needs – and a deal closer, as they turned down offers that were not in preferred locations. Benefits and salary played little or no

role in their choice of appointment; postdoc seekers considered them standard and not open to negotiation.

Those in postdoc positions tended to know and stay in touch with other postdocs, including some from other countries, and they expected to make more contacts over the course of their appointment.

They suggested several ways to attract a broad range of postdocs to provide further feedback to NSF about their postdoc experience. In particular, they tended to consider it essential that any such feedback gather and disseminate specific useful information for key audiences, such as graduate students, prospective postdoc-seekers, and educational policy makers. They also offered ideas for obtaining participation from postdocs (cash was a popular one) and mechanisms that would enhance that participation (such as relatively brief on-line instruments, periodic focus groups, and even some peer-group creating meetings).

These focus groups attained the key objectives among the participants sampled: they produced a richer, deeper understanding of the motivations, expectations, and experiences of doctoral candidates, recent graduates, and recent postdocs in deciding whether, why, and how to seek and find a postdoc position.

Possibilities for Future Research

This research did not explore extensively the postdoc perceptions and experiences of several important segments of research doctorate recipients. The small numbers of those in fields where postdocs are less common -- social science (5) and, perhaps, engineering (5) -- may have made their fields seem more heterogeneous than they are. If it is important to understand their perceptions, then it might be advisable to conduct separate focus groups of each, so that there is an opportunity to further explore the postdoctoral paths of graduates in these fields. The same can be said for research

scientists in postdoc positions who are not on the natural/medical side of research, such as physicists, chemists, mathematicians, and computer scientists.

Furthermore, this research did not explore other key segments, such as:

- Postdocs in their second or third year, with far more experience in such a position;
- Postdocs who have successfully completed their term and entered positions in academia and industry – from which they can provide reports of how their “bridge period” prepared them for their ultimate objectives;
- Individuals who “dropped out” of postdoc positions – who may have more to say about how their position did not meet their expectations or posed insuperable obstacles to their success;
- Employers in industry – and perhaps in government agencies -- who hire postdocs and those who do not, to offer perspectives from end-users of postdoc and graduate training [At least two types of employer decision-makers might be queried: (1) those who make decisions about the kinds of researchers to hire, and (2) those who supervise and evaluate postdoc employees].

For the abovementioned under-explored and unexplored segments, the CAT focus group method seems most appropriate for its geographic range, cost efficiency, time saving, and accessibility to unobtrusive real-time client observation.

Appendix A: Detailed Sample Characteristics

Face-to-Face (FTF) Postdoc Planners: A total of eight research doctoral graduates (or near graduates) participated in the FTF group for those planning to take a postdoc. Five of these participants were women and three of them were men, representing three local Chicago-area universities (two private and one public).⁴ These participants were affiliated with institutions awarding between 25 and 332 research doctorates in the 2002-2003 academic year. Six were in a field of natural/medical science and two in a social science. The following fields of study were represented: health services research/public health, clinical neurophysiology, cell biology, network security, biochemistry, economics, asthma genetics, anthropology/American studies. Three participants were Asian and five were non-Hispanic white. Four participants were U.S. citizens and four were foreign nationals. Three participants had at least one of their degrees awarded by a foreign country. Foreign doctorates were sought via a local university's international student email list, but none were found.

FTF Postdoc Non-planners: A total of 9 research doctoral graduates (or near graduates) participated in the FTF group for those not planning to take a postdoc. Seven of these participants were men and two of them were women, representing three different schools (one public and two private)⁵ in Chicago and Virginia (the Virginia student had just moved to the area). These participants were affiliated with institutions awarding between 225 and 337 research doctorates in the 2002-2003 academic year. Six had done their doctoral studies in the natural/medical sciences, one in engineering, one in the humanities (philosophy), and one in education. Four participants were Asian and five were non-Hispanic white. Four participants were U.S. citizens and five were foreign nationals. Five participants had at least one of their degrees awarded by a foreign country. Foreign doctorates were sought via a local university's international student email list, but none were found.

⁴ Six of the eight participants had done their doctoral studies at the University of Chicago.

⁵ Five of these seven had done their doctoral studies at the University of Chicago.

Computer Assisted Telephone (CAT) Postdoc Holders: A total of 27 research doctoral graduates participated in the CAT groups for those who were currently in their postdoc appointments. Nearly all came from doctoral fields in natural/medical science (23) or engineering (3); the remaining one was in social science (human development and family studies). Twelve of these participants were men and 15 were women whose postdoc appointments were at 16 institutions (six public universities, seven private universities, two private research facilities and one National Lab) in the following states: Alaska, California, Georgia, Illinois, Iowa, New York, North Carolina, Pennsylvania, Rhode Island, Washington, and Wisconsin. Postdoc fields of study included biophysics/biochemistry, cancer biology, cardiovascular physiology, cell biology, chemical engineering, computational neuroscience, environmental engineering, immunology, interdisciplinary family studies, mathematics, microbial ecology, molecular neurobiology, movement science, nanotechnology/tissue engineering/microfabrication, neurorespiratory physiology, neuroscience, orthopaedic surgery/bioengineering, pharmacology/drug delivery, physiological neuroscience, plant genetics/molecular ecology, psychology, public health nutrition, spectroscopy/environmental science, and virology. These participants were affiliated with institutions awarding between 36 and 653 research doctorates in the 2002-2003 academic year (the private research facilities and National Lab are not included in these numbers as they do not award research doctorates). Fourteen participants were white, one was American Indian, six were Asian, five were black, and three were Hispanic. Eighteen participants were U.S. citizens and nine were foreign nationals. Ten participants had at least one of their degrees awarded by a foreign country, and three of these participants had their doctoral degree awarded by a foreign country. Information on the postdocs' source of financial support was collected for the CAT postdoc focus groups. Sources of financial support for these groups included training awards, foreign and American federal institutes of health (e.g., NIH), the National Science Foundation, research grants, the university that housed their postdoc, their primary investigators' grant, institutional fellowships, and foundations.

CAT Non-postdoc Holders: A total of eight research doctoral graduates participated in the CAT group for those who were currently not in postdoc appointments. Five were in a natural/medical science, two in social science, and one in engineering.

Five of these participants were men and three were women working for eight different institutions (one film company, one public university, one private university, one private research facility, one federal research program, and three private companies) in the following states: the District of Columbia, Illinois, Massachusetts, Missouri, New York, Texas, and Virginia. Their doctoral fields of study included anthropology, architecture, chemistry, environmental science and policy, mechanical engineering, nursing, social psychology, and sociology. These participants were affiliated with universities awarding between 74 and 380 research doctorates in the 2002-2003 academic year. Two participants were Asian and six were white. Six participants were U.S. citizens and two were foreign nationals. One participant had one degree awarded by a foreign country.

Appendix B: Recruitment Materials

Face to Face (F2F) Institution Contact Solicitation for Recruitment Assistance:

Attention SED Institutional Contact:

I am writing to tell you about an important study associated with the Survey of Earned Doctorates (SED). NORC is interested in research doctoral students' attitudes towards taking postdoc positions. We are interested in students who are taking postdocs and those who are not. We are looking for doctoral students who have graduation dates of Spring, Summer or Fall of 2005. In-person focus groups will be conducted in downtown Chicago to explore these attitudes.

I am hoping you might be able to assist me in my recruiting as you have been key to our success with focus groups and cognitive interviews in the past. I have attached a Word document that can be sent as an email message to doctoral students (Spring or Summer 2005 grad dates). I have also attached a flyer describing the focus groups, and I am hoping you can post this flyer in your office, student lounge, or any other place where you encounter these doctoral students.

We are offering focus groups on August 24th. Students should contact me to schedule an appointment.

Each participant will be paid \$75.00 upon completion of the focus group.

Thank you in advance for your assistance. Also, please let me know if you need any additional information. Thank you for your continued participation in the SED!

Dan Loew, Survey Specialist
NORC
312-325-2527 – direct
1-800-248-8649
loew-dan@norc.org

F2F Recruitment Email:

NORC is recruiting research doctoral candidates who have or will graduate in Spring, Summer, or Fall 2005 to participate in a confidential focus group that will discuss attitudes towards taking postdoctoral positions. We are interested in students who are taking postdocs and those who are not. In-person focus groups will be conducted in downtown Chicago to explore these attitudes.

Focus groups are scheduled to take place on August 24th at Focuscope, a professional organization specializing in conducting focus groups. The session will last no more than 90 minutes, and students only need to participate in one session.

Each participant will be paid \$75.00 upon completion of the focus group.

Interested students should contact Dan Loew at 1-800-248-8649 or loew-dan@norc.org.

F2F Recruitment Flyer:

NORC

*A national organization for research
at the University of Chicago*

EARN \$75 BY SHARING YOUR OPINIONS!

The National Opinion Research Center
is seeking doctoral students
to take part in a focus group discussing
attitudes towards taking postdocs.

Doctoral students who have or will graduate in
Spring, Summer or Fall 2005
will be paid **\$75** to take part in a
focus group on **August 24th**.

The focus group will last no more than 90 minutes
and will take place in Chicago at Focuscope,
a company that specializes in conducting focus groups:
515 N. State St., Suite 1920, Chicago, IL 60610.

If you are interested, please contact DAN LOEW
for more information at

1-800-248-8649 or 4800-sed@norc.uchicago.edu

Focus Group-Earn \$75!
1-800-248-8469 or
4800-sed@norc.uchicago.edu

Focus Group-Earn \$75!
1-800-248-8469 or
4800-sed@norc.uchicago.edu

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Focus Group-Earn \$75!
1-800-248-8469 or
4800-sed@norc.uchicago.edu

Focus Group-Earn \$75!
1-800-248-8469 or
4800-sed@norc.uchicago.edu

F2F Screener Email:

Thank you for expressing interest in NORC's focus groups! Your input is invaluable to us.

We are hoping to get a wide range of participants, so I have attached a Word document for you to complete and email back to me, no later than <<date>>.

As you fill out the attached form, please note the following:

1. For all Yes/No questions, please indicate your answer by clicking your mouse in the box to the left of your answer choice. For all other questions, please type in the box provided. Press the tab key to move from box to box and the space bar or a click of the mouse to check the boxes.
2. The focus groups will be conducted in person on August 24th. There will be two sessions - one at 10 am and one at 1 pm. In order to participate, we will need you to come to Focusscope, a professional company that specializes in conducting focus groups. Their office is located at 515 N. State St., Ste. 1920, Chicago, IL 60301.

All information you provide is confidential and will not be used for any purpose outside of this study. We need your address so we can issue a check and mail it to you, and we'd like to be able to contact you via phone and email.

The focus groups will be audiotaped so that the analysts can record notes afterwards. If this raises any concerns, please let me know.

Someone will be contacting you via phone or email (please specify if you have a preference) in the near future to let you know if you have been selected to participate in the study, and if so, to discuss scheduling.

If you have additional questions, please do not hesitate to contact me via email or direct telephone:

loew-dan@norc.org
312-325-2527

Thank you again for your interest in the Survey of Earned Doctorates!

Dan Loew
Survey Specialist
NORC
1-800-248-8649

F2F Background/Screening Form:

NORC

*A national organization for research
at the University of Chicago*

SURVEY OF EARNED DOCTORATES (SED)

Focus Group Participant Background Sheet

1. Contact Information

Name:	_____
Address:	_____
City, State, Zip:	_____
Day phone:	_____
Evening phone:	_____
Email address:	_____

2. Do you prefer that we contact you by email or telephone? email telephone

3. When is the best day of the week and time of day to reach you by telephone? _____

4. What is your date of birth? _____

5. Are you: Male Female

6. Are you Hispanic or Latino? Yes No

7. What is your racial background? (Mark one or more)

- American Indian or Alaska Native → Specify tribal affiliation(s) _____
- Native Hawaiian or other Pacific Islander
- Asian
- Black or African-American
- White

8. Is English your first language? Yes No

9. Are you currently a U.S. Citizen or permanent resident? Yes No

10. In what country did you complete your bachelor's degree? _____

11. In what country did you complete your master's degree? _____

12. In what country did you complete your doctoral degree? _____

13. What session will you be available for on August 24th?

- 10 am
- 1 pm
- Not available

14. Are you planning to take a postdoctoral position?

Yes → Go to Question 14

No →

STOP

15. What will be your postdoctoral field of study? _____

F2F reminder email:

This is a reminder that you are scheduled to participate in a focus group today, August 24th. The focus group will begin at <<time>>. We look forward to your participation. Please contact Dan Loew with any questions.

The focus group will take place at Focuscope, a professional company that specializes in conducting focus groups. As a reminder, below are the directions on how to get to Focuscope:

Directions:

Focuscope is located in the American Medical Association building at 515 North State Street, Suite 1920, Chicago, IL 60610. The building is located on State Street between Illinois Street and Grand Avenue and is easily accessible by CTA red, blue, orange, brown, green, and purple line trains. If you are taking the red line, exit at the Grand stop and walk directly south on State Street to 515 N. State St. If you are taking the orange, brown, green, or purple lines, transfer to the Red Line at the State St. stop. If you are taking the blue line, transfer to the Red line at the Jackson or Washington stops. CTA buses that run on State St. should also get you in close proximity to the building. Please let me know if you need additional directions.

When you arrive at the building, please go to the security desk. Tell them you are there to visit Focuscope on the 19th floor. Please try to arrive 10 to 15 minutes early.

Thank you!

Kim Williams, williams-kim@norc.org

Dan Loew, loew-dan@norc.org

CAT Institution Contact Solicitation for Recruitment Assistance:

Dear SED Institutional Contact:

I am writing to tell you about the Postdoc Data Project, an important study associated with the Survey of Earned Doctorates (SED). NORC is interested in exploring ideas and attitudes about the postdoc experience. We are looking for doctoral students who graduated in Spring or Summer of 2005. We are looking for students who have a definite postdoc position, for those who are planning on taking a postdoc position, and for those who are not planning on taking a postdoc.

The focus groups will take place over the phone and will last no longer than 90 minutes. This technology works a lot like a conference call and is extremely flexible because participants can call in from their home, office, or any other convenient location; we only ask that cellular phones not be used. During the focus group, participants will be able to respond to prompts from a professional moderator and discuss them among other participants from across the U.S.

I am hoping you might be able to assist me in my recruiting as you have been key to our success with focus groups in the past. I have attached two Word documents that can be sent as an email message to postdocs or doctoral students with Spring or Summer 2005 grad dates. **The first document, entitled “PD2_Invitation_Postdocs”, should be sent to current postdocs. The second document, entitled “PD2_Invitation_Doc_Grads”, should be sent to doctoral students who graduated recently but have not taken postdocs.** I have also attached a flyer describing the focus groups, and I am hoping you can post this flyer in your office, student lounge, or any other place where you encounter postdoctoral or doctoral students.

We are offering focus groups on October 18th and 27th at 6 pm and 8 pm EST. Interested persons should contact me to schedule an appointment.

Each participant will be paid \$75.00 upon completion of the focus group.

Thank you in advance for your assistance. Also, please let me know if you need any additional information. Thank you for your continued participation in the SED and related projects!

Dan Loew, Survey Specialist
NORC
312-325-2527 – direct
1-800-248-8649
loew-dan@norc.org

CAT Recruitment Email (for Postdocs):

The National Opinion Research Center (NORC) at the University of Chicago is recruiting postdoctoral fellows and trainees who received their doctorate in Spring or Summer of 2005 to participate in a confidential focus group with their peers across the U.S. to discuss their experiences, thoughts, and feelings about the challenges and opportunities that postdoctoral fellows face. The National Science Foundation is sponsoring this research. These focus groups will be moderated by a professional moderator, and will be used to inform educational policy towards postdocs and to help educate individuals who are considering postdoctoral positions about this career choice. Postdoctoral fellows from foreign countries and from the U.S. are eligible.

Focus groups are scheduled to take place on October 18th and 27th in the evenings. Each session will last no more than 90 minutes, and participants will take part in only one session. The focus groups will take place over the phone and will last no longer than 90 minutes. Participants can take the call in their home, office, or any other convenient location; we only ask that cellular phones not be used.

Upon completion of the focus group, a donation of \$75 will be made to each participant or to the charity of their choice.

Interested students should contact Dan Loew at 1-800-248-8649 or loew-dan@norc.org.

CAT Recruitment Email (for non-postdoc doctoral graduates):

The National Opinion Research Center (NORC) at the University of Chicago is recruiting recent doctoral graduates who received their doctorate in Spring or Summer of 2005 to participate in a confidential focus group with their peers across the U.S. to discuss why they are not considering on taking a postdoc. The National Science Foundation is sponsoring this research. These focus groups will be moderated by a professional moderator, and will be used to inform educational policy towards postdocs and to help educate individuals who are considering postdoctoral positions about this career choice. Doctoral graduates from foreign countries and from the U.S. are eligible.

Focus groups are scheduled to take place on October 27th in the evening at 6 pm Eastern time. Each session will last no more than 90 minutes, and participants will take part in only one session. The focus groups will take place over the phone and will last no longer than 90 minutes. Participants can take the call in their home, office, or any other convenient location; we only ask that cellular phones not be used.

Upon completion of the focus group, a donation of \$75 will be made to each participant or to the charity of their choice.

Interested students should contact Dan Loew at 1-800-248-8649 or loew-dan@norc.org.

CAT Recruitment Email (for NIH postdocs):

The National Opinion Research Center (NORC) at the University of Chicago is recruiting postdoctoral fellows and trainees who received their doctorate in Spring or Summer of 2005 to participate in a confidential focus group with their peers across the U.S. to discuss their experiences, thoughts, and feelings about the challenges and opportunities that postdoctoral fellows face. The National Science Foundation is sponsoring this research. These focus groups will be moderated by a professional moderator, and will be used to inform educational policy towards postdocs and to help educate individuals who are considering postdoctoral positions about this career choice. Postdoctoral fellows from foreign countries and from the U.S. are eligible.

Focus groups are scheduled to take place on October 18th and 27th in the evenings. Each session will last no more than 90 minutes, and participants will take part in only one session. The focus groups will take place over the phone and will last no longer than 90 minutes. Participants can take the call in their home, office, or any other convenient location; we only ask that cellular phones not be used.

Upon completion of the focus group, a donation of \$75 will be made to the charity of each participant's choice.

Interested students should contact Dan Loew at 1-800-248-8649 or loew-dan@norc.org.

CAT Recruitment Flyer:



EARN \$75 BY SHARING YOUR OPINIONS!

The National Opinion Research Center is seeking doctoral students to take part in a focus group discussing the postdoctoral experience.

Doctoral students who graduated between Spring and Summer 2005 will be paid **\$75** to take part in a focus group on **October 18th** or **October 27th**.

The focus group will last no more than 90 minutes and will take place over the phone.

This way, you can participate from any location!
(No cell phones, please.)

If you are interested, please contact DAN LOEW for more information at

1-800-248-8649 or 4800-sed@norc.uchicago.edu

Focus Group-Earn \$75!
1-800-248-8469 or
4800-sed@norc.uchicago.edu

Focus Group-Earn \$75!
1-800-248-8469 or
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Focus Group-Earn \$75!
1-800-248-8469 or
4800-sed@norc.uchicago.edu

Focus Group-Earn \$75!
1-800-248-8469 or
4800-sed@norc.uchicago.edu

CAT Screener Email:

Dear :

Thank you for expressing interest in the Postdoc Data Project Focus Group! Your input is invaluable to us as we explore ideas and attitudes towards the postdoc experience.

We are hoping to get a wide range of participants, so I have attached a Word document for you to complete and email back to me, no later than <<date>>.

As you fill out the attached form, please note the following:

1. For all Yes/No questions, please indicate your answer by clicking your mouse in the box to the left of your answer choice. For all other questions, please type in the box provided. Press the tab key to move from box to box and the space bar or a click of the mouse to check the boxes.
2. The focus group will be conducted over the telephone, so you can participate from your home, office, or any other convenient location with a regular phone (**no cell phones, please**). We will need the telephone number at which you will take the call.
3. Because the focus groups are nation-wide and will take place over the phone, the scheduled times will vary between time zones. **The scheduled times on the form are adjusted to fit your time zone.**

All information you provide is confidential and will not be used for any purpose outside of this study. We need your address so we can issue a check and mail it to you, and we'd like to be able to contact you via phone and email.

I will be contacting you via phone or email (please specify if you have a preference) in the near future to schedule your focus group for either October 18th or 27th. At this time, I will confirm the phone number that we should call you at for participation in the focus group.

If you have additional questions, please do not hesitate to contact me via email or direct telephone or toll-free number:

loew-dan@norc.org
312-325-2527
1-800-248-8649

Thank you again for your interest in the focus groups!

CAT Screener/Background Forms:

NORC

*A national organization for research
at the University of Chicago*

POSTDOC DATA PROJECT

Focus Group Participant Background Sheet

1. Contact Information

Name:	_____
Address:	_____
City, State, Zip:	_____
Day phone:	_____
Evening phone:	_____
Email address:	_____

2. Do you prefer that we contact you by email or telephone? email telephone

3. When is the best day of the week and time of day to reach you by telephone? _____

4. What is your date of birth? _____

5. Are you: Male Female

6. Are you Hispanic or Latino? Yes No

7. What is your racial background? (Mark one or more)

American Indian or Alaska Native → Specify tribal affiliation(s) _____

Native Hawaiian or other Pacific Islander

Asian

Black or African-American

White

8. Is English your first language? Yes No

9. Are you currently a U.S. Citizen or permanent resident? Yes No

10. What is your doctoral field of study? _____

11. At which university did you complete your doctorate? _____

12. When did you graduate from your doctoral program? _____

13. In what country did you complete your bachelor's degree? _____

14. In what country did you complete your master's degree? _____

15. In what country did you complete your doctoral degree? _____

16. Have you committed to a specific postdoc position or are you planning on doing a postdoc?

Have a postdoc position Planning on a postdoc → Go to Question 18

Neither →

STOP

17. What is/will be your postdoctoral field of study? _____

18. What is/will be the primary source of financial support for your postdoctoral research? _____

CAT Confirmation Letter:

Dear _____,

Thank you for your interest in the Postdoc Data Project focus group! We are looking forward to your participation in this important study. This message contains information you will need for the focus group as well as answer some questions you may have. We will call you on your scheduled date and time to initiate the session; please take a few minutes to review and verify the information below.

We have tried to accommodate your scheduling preferences. Your call is scheduled for:

Thursday 10/27/05 at _____ p.m. _____ time

We will call you at this number: (please let me know if this is not the correct number where you can be reached at the above specified date and time; also, please make sure this is not a cell phone number. If you will be using a cordless phone, please make sure that it is fully charged.)

You will be contacted approximately ten minutes before the call start time. If for some reason you need to call into the group, you can dial-in using: (800) 967-7134 code 9410833.

If you are not available on this date and time, please notify me immediately via email at loew-dan@norc.org.

For the call we ask that you please find a quiet room where you will be able to chat without background noise. To help everyone hear better please use a regular phone instead of a cell phone or cordless phone.

The focus group will last no more than 90 minutes and you will receive an honorarium of \$75 to thank you for participating upon completion.

We will send your honorarium to the address you provided (please note that the honorarium may take up to 6 weeks to arrive).

It is important that you verify that I have your correct phone and address information so that we may reach you at the correct number for the focus group and send your honorarium to the correct address. If 6 weeks after the focus group, you will not be at the address you provided please provide me with a current address. I would also like you to retain my contact information until you receive the honorarium.

Also, please read the attached consent form. It is necessary for participation in our research, according to federal ethical guidelines. If you agree to participate, please type your name and the date in the appropriate spaces and return the form to me via email.

We're looking forward to your input on the focus group. Please let me know if you have any questions.

Regards,

Appendix C: Discussion Guides

August Postdoc Focus Groups: Discussion Guide for Postdoc Planners

August 24, 2005

Goal: To explore and understand motivation, expectations, and perceptions among recent science and engineering doctoral graduates in deciding whether to pursue a postdoc training position

Specific focus group learning objectives:

- Understand professional and personal motivations for seeking a postdoc appointment or not
- *For those with postdoc plans or aspirations, identify:*
 - *Perceptions/expectations of a “successful” postdoc experience*
 - *Career goals and how postdoc relates to them*
 - *What kinds of support they expect (beyond research training)*
 - *Sources of information about postdoc possibilities and expectations*
- Identify ways to find, contact, and motivate post docs to respond to a survey

Introduction

(10 minutes)

- Welcome, thanks for coming
- Purpose (goal) of discussion
- Introductions (name, field of doctorate, where is your postdoc)
- Process

Your road to a postdoc

(15 minutes)

- What got you interested in considering a postdoc appointment?
 - Think back: what first triggered your interest? Then what developed it?
 - Career interest? Needed for career?
 - What other choices did you consider? What appealed /not about them?
 - How did you finally decide among them?
 - What kind of information did you have? From where?
 - With whom did you discuss (peers, mentor, ...?)
 - How did you go about finding and choosing your *specific* position? A PI?
 - What were you looking for
 - What info had you? Wish you had had?
 - Looking back and at others who did NOT choose a postdoc: Why not, do you think?

Your postdoc appointment

(20 minutes)

- **First, the personal**
 - Benefits:
 - Which do you expect? (Health insurance, retirement, vacation, other?)
 - Discussed pre-acceptance? Negotiated?
 - What did you know/wish you had?
 - Benefits adequate?
 - How about salary?
 - How, if at all, did your family -- or plans to have one -- (not) affect your decision to take a postdoc?
 - Location?
- **The job:**
 - Main responsibilities (Research? Teaching? Mentoring others? ...?)
 - Your main objectives:
 - My postdoc will be a “success” if I can get _____
 - Publications
 - Research (what kind?)
 - My own research
 - The job I want (what kind?)
 - Other ...?
 - It will be a “failure” if _____? (How so?)
 - The support I need to help me succeed will be _____
 - A good mentor (“good” =?)
 - Recognition as an employee (= benefits, status...)
 - Opportunities to learn beyond the lab (courses, seminars, networking opportunities with peers and PIs, outside conferences...)
 - Training in professional non-research skills (Proposal/grant writing, teamwork, leadership, communication...)
 - Colleagues
 - Other ...?

Your Contacts with Other Postdocs

(15 minutes)

- Know other postdocs ...
 - Where you are going?
 - Where you left?
 - In other departments?
 - In other institutions?
 - Abroad (w/ U.S. degree? Foreign-born)?
- How do/did/might you meet them (network opportunities)?
- How do you keep in touch with them?

Postdoc participation in feedback to NSF (15 minutes)

- NSF is exploring ways to get feedback from more postdocs about their postdoc experience. Let's think about some ways that would interest you and other postdocs in providing that kind of information.
 - Important purpose (TRY SOME EXAMPLES?)
 - Helping others (Graduates considering postdoc? Prospective employers? Postdoc sponsors? ...?)
 - Possible mechanisms (Make it easy (how?))
 - Email
 - Mail
 - In-person
 - Phone
 - Group or individual?
 - Getting the report
 - Anonymity (how?)
 - \$ (how much?)
 - Other ...??
- What would discourage you?
- What would help us get a broader sample of postdocs (Foreign degreed US postdocs, US postdocs abroad, Minorities)?

CHECK OBSERVERS

Wrap-up (10 minutes)

- Is there anything else that would help NSF to better understand your decision to take a postdoc position or the postdoc experience?
- THANK AND END

August Postdoc Focus Groups: Discussion Guide for Non-Postdoc Planners

August 24, 2005

Goal: *To explore and understand motivation, expectations, and perceptions among recent science and engineering doctoral graduates in deciding whether to pursue a postdoc training position*

Specific focus group learning objectives:

- Understand professional and personal motivations for seeking a postdoc appointment or not
- *For those with non-postdoc plans or aspirations, identify:*
 - *Career goals*
 - *Sources of information about career possibilities and expectations*
 - *How they compare postdoc position with their actual choice*

Introduction

(10 minutes)

- Welcome, thanks for coming
- Purpose (goal) of discussion
- Introductions (name, field of doctorate, current job)
- Process

Paths considered

(20 minutes)

- What got you interested in considering the kind of job that is your current appointment?
 - Think back: what first triggered your interest? Then what developed it?
 - Career interest? Need for career? Other ...?
 - How did you go about finding and choosing that appointment?
 - What were you looking for
 - What info had you? Wish you had had?

A path not taken: postdoc (30 minutes)

- What other choices did you consider? [LIST]
- You mentioned several other choices. Let's talk about one you (did not) mention:
Postdoc.

- What kind of information did you have about postdoc? From where?
 - With whom did you discuss (peers, mentor...?)
 - Non-personal sources?

- How might a postdoc compare with your current appointment? [LIST +/-]
[IF NOT MENTIONED]:
- **How do you think a postdoc compares on**
 - **Benefits:**
 - Which? (Health insurance, retirement, vacation, other?) How large?
 - **Salary?**
 - How about *family* -- or plans to have one -- (not) affect your decision not to take (or consider) a postdoc?
 - **Location?**

- **How do you think a postdoc *position* might compare with yours?**
 - Main responsibilities (Research? Teaching? Mentoring others? ...?)
 - What counts as "success": I can get _____
 - Publications
 - Research (what kind?)
 - My own research
 - The next (or ultimate) job I want (what kind?)
 - Other ...?
 - As "failure" _____
 - *The support you get to help you succeed* _____
 - A good mentor ("good" =?)
 - Recognition as an employee (= benefits, status,)
 - Opportunities to learn beyond the lab (courses, seminars, networking opportunities with peers and PIs, outside conferences...)
 - Training in professional non-research skills (Proposal/grant writing, teamwork, leadership, communication...)
 - Colleagues
 - Other ...?

Might you consider taking a post doc position in the future? Why (not)?

- Looking back at others you know/knew who DID choose a postdoc: Why do you think they did?

Your Contacts (15 minutes)

- Where do you know any ????
 - Where you came from?
 - Where you are going?
 - In other departments?
 - In other institutions?
 - Abroad (w/ U.S. degree? Foreign-born)?
- How do/did/might you meet them (network opportunities)?
- How do/might you keep in touch with them?
- Any who have or have had postdoc appointments? Where from and how do you meet/stay in touch with them?

CHECK OBSERVERS

Wrap-up (10 minutes)

- Anything else on their career expectations and experience that NSF might find important?
- THANK AND END

Postdoc Focus Groups: Discussion Guide for Postdoc Holders

October 18, 2005

Goal: To explore and understand motivation, expectations, and perceptions among recent science and engineering doctoral graduates in deciding whether to pursue a postdoc training position

Specific focus group learning objectives:

- Understand professional and personal motivations for seeking a postdoc appointment or not
- *For those with postdocs*
 - *Perceptions/expectations of a “successful” postdoc experience*
 - *Career goals and how postdoc relates to them*
 - *What kinds of support they expect (beyond research training)*
 - *Sources of information about postdoc possibilities and expectations*
- Identify ways to find, contact, and motivate post docs to respond to a survey

Introduction

(10 minutes)

- *Welcome*, thanks for coming
- *Purpose* (goal) of discussion: To understand how recent science and engineering doctoral graduates think about deciding whether to pursue a postdoc training position.
- *Introductions* (name, field of doctorate, where is your postdoc) – JUMP IN, TAKE TURNS
- Process: open, confidential discussion, taped (with your consent) so researchers can write reports

“Postdoc appointment” = ?

(5 minutes)

- What is a post doc appointment”? [all take a turn, agree/add]
 - Different for you? Others (who?)
 - Different terms? Meanings of each?

Your road to a postdoc

(15 minutes)

- What got you interested in considering a postdoc appointment?
 - Think back: what first triggered your interest? Then what developed it?
 - Career interest? Needed for career?
 - What other choices did you consider? What appealed /not about them?
 - How did you finally decide among them?
 - What kind of information did you have? From where?
 - With whom did you discuss (peers, mentor, ...?)
 - How did you go about finding and choosing your *specific* position? A PI?
 - What were you looking for
 - What info had you? Wish you had had?
 - Looking back and at others who did NOT choose a postdoc: Why not, do you think?

Your postdoc appointment

(20 minutes)

- **First, the personal**
 - Benefits:
 - Which do you expect? (Health insurance, retirement, vacation, other?)
 - Discussed pre-acceptance? Negotiated?
 - What did you know/wish you had?
 - Benefits adequate?
 - How about salary?
 - How, if at all, did your family -- or plans to have one -- (not) affect your decision to take a postdoc?
 - Location?
- **The job:**
 - Main responsibilities (Research? Teaching? Mentoring others? ...?)
 - Your main objectives:
 - My postdoc will be a “success” if I can get _____
 - Publications
 - Research (what kind?)
 - My own research
 - The job I want (what kind?)
 - Other ...?
 - It will be a “failure” if _____? (How so?)
 - The support I need to help me succeed will be _____
 - A good mentor (“good” =?)
 - Recognition as an employee (= benefits, status...)
 - Opportunities to learn beyond the lab (courses, seminars, networking opportunities with peers and PIs, outside conferences...)
 - Training in professional non-research skills (Proposal/grant writing, teamwork, leadership, communication...)
 - Colleagues
 - Other ...?

Let’s learn a bit more about your position: how it’s funded

- Where does your position’s funding come from? (who /what)
- If not known, why is that?
- How do you receive it (directly, through whom?)
- If multiple sources, who (if anyone) knows them all (their position, not their name)?

Your Contacts with Other Postdocs

(10 minutes)

- Know other postdocs ...
 - Where you are going?
 - Where you left?
 - In other departments?
 - In other institutions?
 - Abroad (w/ U.S. degree? Foreign-born)?
- How do/did/might you meet them (network opportunities)?
- How do you keep in touch with them?

Postdoc participation in feedback to NSF

(15 minutes)

- NSF is exploring ways to get feedback from more postdocs about their postdoc experience. Let's think about some ways that would interest you and other postdocs in providing that kind of information.
 - Important purpose (TRY SOME EXAMPLES?)
 - Helping others (Graduates considering postdoc? Prospective employers? Postdoc sponsors? ...?)
 - Possible mechanisms (Make it easy (how?)
 - Email
 - Mail
 - In-person
 - Phone
 - Group or individual?
 - Getting the report
 - Anonymity (how?)
 - \$ (how much?)
 - Other ...??
- What would discourage you?
- What would help us get a broader sample of postdocs (Foreign degreed US postdocs, US postdocs abroad, Minorities)?

CHECK OBSERVERS

Wrap-up

(10 minutes)

- Is there anything else that would help NSF to better understand your decision to take a postdoc position or the postdoc experience?
- THANK AND END

October Postdoc Focus Groups: Discussion Guide for Non-Postdoc Planners

October 27, 2005

Goal: *To explore and understand motivation, expectations, and perceptions among recent science and engineering doctoral graduates in deciding whether to pursue a postdoc training position*

Specific focus group learning objectives:

- Understand professional and personal motivations for seeking a postdoc appointment or not
- *For those with non-postdoc plans or aspirations, identify:*
 - *Career goals*
 - *Sources of information about career possibilities and expectations*
 - *How they compare postdoc with their actual choice*

Introduction

(10 minutes)

- Welcome, thanks for coming
- Purpose (goal) of discussion: Understand career goals and expectations of recent doctoral grads in science and engineering
- Introductions (name, field of doctorate, current job) JUMP IN
- Process: open, confidential discussion, taped (with your consent) so researchers can write reports

Paths considered

(20 minutes)

- What got you interested in considering the kind of job that is your current appointment?
 - Think back: what first triggered your interest? Then what developed it?
 - Career interest? Need for career? Other ...?
 - How did you go about finding and choosing that appointment?
 - What were you looking for
 - What info had you? Wish you had had?

A path not taken: postdoc (30 minutes)

- What other choices did you consider? [LIST]
- You mentioned several other choices. Let's talk about one you (did not) mention:
Postdoc.
- Postdoc = ?

- What kind of information did you have about postdoc? From where?
 - With whom did you discuss (peers, mentor...?)
 - Non-personal sources?

- How might a postdoc compare with your current appointment? [LIST +/-]
[IF NOT MENTIONED]:
- **How do you think a postdoc compares on**
 - **Benefits:**
 - Which? (Health insurance, retirement, vacation, other?) How large?
 - **Salary?**
 - How about *family* -- or plans to have one -- (not) affect your decision not to take (or consider) a postdoc?
 - **Location?**

- **How do you think a postdoc job might compare with yours?**
 - Main responsibilities (Research? Teaching? Mentoring others? ...?)
 - What counts as "success": I can get _____
 - Publications
 - Research (what kind?)
 - My own research
 - The next (or ultimate) job I want (what kind?)
 - Other ...?
 - As "failure" _____
 - *The support you get to help you succeed* _____
 - A good mentor ("good" =?)
 - Recognition as an employee (= benefits, status,)
 - Opportunities to learn beyond the lab (courses, seminars, networking opportunities with peers and PIs, outside conferences...)
 - Training in professional non-research skills (Proposal/grant writing, teamwork, leadership, communication...)
 - Colleagues
 - Other ...?

Might you consider a post doc in the future? Why (not)?

- Looking back at others you know/knew who DID choose a postdoc: Why do you think they did?

Your Contacts (15 minutes)

- Where do you know any ????
 - Where you came from?
 - Where you are going?
 - In other departments?
 - In other institutions?
 - Abroad (w/ U.S. degree? Foreign-born)?
- How do/did/might you meet them (network opportunities)?
- How do/might you keep in touch with them?
- Any who have or have had postdoc appointments? Where from and how do you meet/stay in touch with them?

CHECK OBSERVERS

Wrap-up (10 minutes)

- Anything else on their career expectations and experience that NSF might find important?
- THANK AND END