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Facilitating Grant Proposal Writing in Health Behaviors for University Faculty: A Descriptive Study

L. A. R. Stein, PhD¹, M. Clair, PhD¹, R. Lebeau, PhD¹, J. O. Prochaska, PhD¹, J. S. Rossi, PhD¹, and J. Swift, PhD¹

¹University of Rhode Island

Abstract

Grant proposal writing in the behavioral sciences is important for fiscal reasons and scientific reasons at many universities. This report describes a grant proposal–writing seminar series provided to University faculty (N = 20) and explores factors facilitating and impeding writing. Summary statistics are provided for quantitative data. Free responses were sorted by independent raters into meaningful categories. As a consequence of the training, 45% planned to submit within 18 months; 80% of grant proposals targeted NIH. At 1-year follow-up, 40% actually submitted grants. Factors impeding grant proposal writing included competing professional demands; factors facilitating writing included regularly scheduled feedback on written proposal sections and access to expert collaborators. Obtaining grants generates financial resources, facilitates training experiences, and vastly contributes to the growth and dissemination of the knowledge base in an area.

Keywords

grant writing; extramural support; funding research

INTRODUCTION AND LITERATURE REVIEW

Most universities view grant proposal writing in the behavioral sciences as important for fiscal as well as scientific reasons. Many educational institutions depend on the revenue of awarded grants; however, the current funding climate is supporting significantly less research. From 1998 to 2003, the National Institutes of Health's (NIH's) budget was doubled (NIH, 2006a). Five years later, budget increases were a distant memory, with NIH experiencing an “unprecedented fifth consecutive flat or below-inflation budget” (Brokenpipeline.org, 2008, p. 1). Less than 25% of R01-equivalent applications were funded as compared to 1999, when more than 30% of such applications were funded (NIH, 2008). In 1999, 29% of NIH grants were funded on first submission, compared to only 12% in 2007 (Brokenpipeline.org, 2008).

Grant proposal writing is also important for early career development, as successfully funded grants can influence hiring, promotion, and tenure decisions for junior faculty (Eissenberg, 2003). At the same time, junior investigators are having greater difficulty receiving funding. In 1998, almost 25% of R01-equivalent grants were awarded to junior investigators compared to 20% in 2007 (NIH, 2008). Not surprisingly, junior investigators received their first R01 awards at approximately 43 years of age in 2007 as compared to those who were 39 years old in 1990 (NIH, 2008). Moreover, success rates of K-series awards that target new investigators (e.g., K01: Mentored Research Scientist Development Award, K08: Mentored Clinical Scientist Development Award, K23: Mentored Patient-Oriented Research Career Development Award) have also decreased. From 2001 to 2003, success rates for these awards were higher than 40% compared with approximately 32% in 2007 (NIH, 2008).

Although grant proposal development is an integral part of many academic careers, often academicians receive no formal course training in grant proposal writing during graduate school (Eissenberg, 2003). In recognition of this deficiency, some universities are beginning to address this curricula omission. One university initiated a grant proposal writing seminar for its doctoral students to introduce them to the “genre of NIH grant proposals” (Ding, 2008, p. 14). The duration of the seminar series was 3 months, on a weekly basis for 75 min. This qualitative study found that a combination of cognitive apprenticeship (which included modeling, coaching, and collaborating to enhance learning in formal classroom-type settings) and social apprenticeship (which included interaction and collaboration with experts, colleagues, and peers in informal settings) models helped students understand the system of the NIH grant application process (Ding, 2008). Another university offered a grant proposal-writing course for its graduate psychology students (Eissenberg, 2003). The course objectives included (a) understanding the NIH grant proposal components, (b) understanding the NIH grant proposal review process, (c) learning how to present information effectively in a grant proposal, and (d) appreciating and learning from feedback. Of the 16 students who completed the course, 6 students submitted an NIH F31 proposal, and all submissions were successfully funded without revisions (Eissenberg, 2003).

With current challenges in funding, it appears essential for senior investigators to impart their grant proposal-writing expertise to junior investigators. The current investigators created a grant proposal-writing seminar series to unite senior and junior investigators in a collaborative environment. The purpose of the grant proposal-writing seminar series was to facilitate grant proposal development in health behaviors. The purpose of this report is to outline receptivity to such an experience for persons assisting in the training, and those learning how to write grant proposals. In addition, this report outlines factors that facilitate and impede grant proposal writing in faculty so that steps may be taken to address such factors and encourage grant proposal writing.

METHOD

Participants

The program was conducted at a large university in the Northeast, categorized as a high research activity institution (Carnegie Foundation for the Advancement of Teaching, 2007).

Faculty members within the College of Arts and Sciences (CAS) were targeted but the program was open to all colleges. Within the CAS during 2008, almost \$13 million were raised through grant-funded research focused in the behavioral sciences (University of Rhode Island [URI] Division of Research and Economic Development, 2008). Within the CAS, 55%, 22%, and 23% of faculty members hold ranks of professor, associate professor, and assistant professor, respectively; 87% are White, 13% are non-White; and 41% are women (Veronica Walsh, URI Executive Business Analyst, personal communication, December 11, 2008).

The final sample ($N = 20$) consisted of 16 women and 4 men; 18 were White and 2 were non-White. Thirteen were from behavioral/social sciences (including communication), 1 from the natural sciences/technology, 2 from nutritional sciences, 1 from business, 1 from nursing/pharmacy, and 2 from the arts/humanities. Ten were faculty members, 4 were staff members, 2 were graduate students, 1 was an undergraduate, and 3 were community partners (collaborating with university faculty).

Procedures

Data were originally gathered for purposes of internally evaluating and monitoring the training experience. Participants were informed that data would be voluntarily collected in order to evaluate the experience. The institutional review board later exempted this research from review.

Recruitment—An announcement regarding the seminar series was distributed to the Dean of the CAS and to the Psychology Department by the Director of a Research Center dedicated to health behavior change (this Center is closely affiliated with the Psychology Dept.). The Dean and the Psychology Chair distributed this announcement about 3 weeks prior to commencement of the series. Twenty-seven potential participants responded to the announcement. One never showed, 1 inquired approximately 3 weeks into the series, and 5 withdrew (3 were too busy; 1 had scheduling conflicts; and after attending four sessions, 1 withdrew because of other professional obligations). This resulted in $N = 20$ participants (attendees/writers).

Administrative features—Interested persons responded and registered with an administrative assistant (AA). During the first seminar, a memo outlined expectations of the series, suggestions for “protecting time” for writing, and the seminar schedule. Attendees/writers were also informed that grant proposal reviewers would be provided by the seminar organizers and that these reviewers would provide written and oral feedback of each attendee’s/writer’s grant proposal sections. In addition, each attendee/writer was to obtain her or his own reviewer who would engage in this process.

Similarly, the organizers sent out requests for seminar leaders and grant proposal reviewers to assist attendees/writers. The request went to approximately 23 persons within and 4 outside the university. This request indicated the general purpose and expectations for activities, specified a timeline, and asked what topics each could discuss as related to grant proposal writing. Of persons contacted, 19 agreed to review grant proposals, and 11 agreed to lead seminars on grant proposal-writing topics. Seven leaders were women, 11 reviewers

were women, and all leaders and reviewers were White. Most persons agreeing to lead seminars and/or review grant proposals were PhD- or MD-level faculty members (71%).

Prior to reviews, reviewers and attendees/writers were provided with a schedule of activities for writing sections, due dates, review dates, and general expectations. NIH scoring criteria were also distributed. Prior to each seminar, a memo invited all psychology department faculty members to attend and encouraged those with grant proposal-writing experience (training faculty) to attend in order to offer support and advisement.

Assessment—Assessments occurred after each seminar, including an evaluation completed by the leader and an evaluation completed by audience members. Evaluations were also completed at the end of the seminar series. These included two forms, completed by attendees/writers, assessing (a) the seminar series in general and (b) the success of actually submitting a grant proposal. It also included a form completed by reviewers regarding the experience from their vantage point. These postseminar forms were provided approximately a week after the seminar series ended. Forms recorded the respondent's rank (graduate student, faculty, etc.), discipline (nursing, natural sciences, etc.), and affiliation (university, community, etc.). Respondents were asked to complete the forms within a week and return them to the AA who would remove all identifiers before compiling responses. Finally, a year later attendees/writers were again surveyed on whether they had submitted a grant proposal.

Summary of training—Meetings were held weekly for 60 to 120 min from mid-May to mid-August. The seminar series focused on grants targeting behavior change; for content, see Table 1. Approximately 5 to 6 weeks after each major section of a grant proposal was presented, the written section was due and was discussed in group format with written reviewer feedback 1 week after the due date. Leaders provided copies of their presentations, as well as supplemental materials. Supplemental materials included funded F-, K-, and R01 awards; bio-sketch samples; and sections of grant proposals, such as power analyses, and counselor selection, training, and treatment monitoring for randomized clinical trials. A listserver was developed so that training faculty and attendees/writers could regularly communicate for support, clarification, and to pose questions along with suggested solutions. The AA was critical to communications, tracking, and assisting in organizing the experience. Meetings included attendees/writers, the organizers (Center Director and experienced grant proposal writer who organized and facilitated meetings), and training faculty.

Compiling data—Simple summary statistics are provided. In addition, open-response options (see Measures below) were sorted to develop meaningful categories in a manner similar to that utilized in previous studies within our lab (Stein et al., 2002; Stein & Lebeau-Craven, 2002). Two raters were provided copies of the questions and the responses. Each rater independently sorted responses into meaningful categories and then labeled the category. When the raters differed in categorizing a response or in categories developed, more weight was given to the rater with more years of research experience. Four raters were used: two with bachelor's degrees and 2 and 3 years of research experience; one with a PhD and 1 year of research experience; and one with a master's degree and 3 months of research

experience. All were White women. Focus of the results was not on placement of responses within categories, but on broad qualitative categories that were developed.

Measures

Attendance record—For each session, the number of attendees/writers and the number of training faculty who attended were recorded.

Seminar leader evaluation—At the end of each seminar, leaders provided information on topics such as the engagement and attention of the audience, adequacy of resources to provide the seminar, and audience interest in diversity issues. These were rated on a 5-point Likert-type scale (1 = *poor* to 5 = *excellent*). An open-ended question was asked regarding how the seminar could be improved. This instrument contained seven items.

Seminar audience evaluation—This form recorded the respondent's rank, discipline, and affiliation. A series of questions evaluated the leader's teaching (e.g., objectives clearly outlined, level of difficulty of material). These were answered using the Likert-type scale described above. Also evaluated was whether issues of diversity were adequately covered (yes/no), including an open-ended question regarding how coverage of diversity could be improved. Similarly, open-ended questions asked what worked well in the seminar and what could be improved. The instrument contained 10 items and was completed anonymously at the end of each seminar by audience members (including attendees/writers and training faculty).

Grant proposal-writing series, postevaluation form (general)—A 16-item form asked about levels of participation, for example, the percentage of grant proposal sections written (response choices were 0-24%, 25-49%, 50-74%, 75-89%, 90-100%); helpfulness of feedback sessions (response choices ranged from *poor* to *excellent* on a 5-point Likert-type scale); and confidence in writing a grant proposal as a result of the seminars (*strongly disagree* that they are more confident to *strongly agree* that they are more confident on a 5-point Likert-type scale). A series of open-ended questions asked what facilitated or assisted in grant proposal writing, barriers to grant proposal writing, and expectations regarding the training experience versus what was delivered.

Grant proposal-writing series, postevaluation form (grant proposal submission)—A 3-item form asked the date targeted for submitting a grant proposal, and what agency was/would be targeted. Those not planning to submit a grant proposal in the following 4 months were asked to briefly indicate why. A similar form was completed 1 year later.

Grant proposal-writing series, postevaluation form (for reviewers)—On this 10-item form, reviewers were asked about the responsiveness of attendees/writers, for example, whether feedback was incorporated (response choices ranged from *strongly disagree* to *strongly agree* on a 5-point Likert-type scale); timeliness of their participation, for example, percentage of sessions for which written feedback was provided on time (response choices were 0-24%, 25-49%, 50-74%, 75-89%, 90-100%); and clarity of the review process, for

example, whether expectations were delineated (*strongly disagree* to *strongly agree*). In addition, three open-ended items asked what worked and did not work well in the feedback process, and how provision of feedback could be improved.

RESULTS

Attendance

Attendee/writer attendance across the 14 sessions ranged from 19 (session 2) to 4 (session 14), with median (*Mdn*) and mode (*Mod*) = 10; $M = 10.64$ and $SD = 4.80$. Training faculty attendance ranged from 12 (session 5) to 4 (session 14), with *Mdn* and *Mod* = 7, $M = 7.93$ and $SD = 2.37$.

Seminar Evaluations

The mean number of evaluations completed at the end of each seminar was 17.00, $SD = 4.90$. Similarly, 11 leaders completed evaluations. Table 2 presents the percentage of persons endorsing each response category for each item rated. Table 2 indicates generally high ratings of the experience for both audience members and leaders. Table 3 presents summaries of free responses.

Writing

Out of 20 attendees/writers, 6 (30%) wrote at least some sections of a grant proposal. Two of these 6 (33%) wrote sections within about 2 weeks after the seminar series ended, but used the arranged reviewers. Four of the 6 (67%) wrote during the seminar series. Of the 4 who wrote during the series, these same 4 wrote the Background and Significance section (100%), 2 of them wrote Preliminary Studies (50%), 2 of them wrote Methods (50%), and 1 wrote the Human Subjects section (25%). Alternatively, 1 of 4 wrote all sections (25%), 2 of 4 wrote two sections (50%), and 1 of 4 wrote one section (25%).

Grant Proposal–Writing Series Postevaluations

Twenty-one attendees/writers were asked to complete the general postevaluation (20 participants, and 1 who attended four sessions but then dropped) and 16 (76%) did so. Although only 1 person completed a grant proposal during the seminar series, 2 completed a grant proposal within about 8 weeks after the series ended. Respondents were asked how helpful the feedback sessions were during the writing process, resulting in the following endorsements: *excellent–good* = 50.00%; *satisfactory* = 18.75%; and *fair–poor* = 0% (31.25% did not respond). They also rated their agreement with the following statement: “As a result of this grant proposal series, I am more confident that I can write a grant proposal for submission.” Endorsements indicate: *strongly agree–agree* = 75%; *unsure* = 18.75%; and *strongly disagree–disagree* = 6.25%. Similarly, they also rated, “As a result of this grant proposal series, I am more confident that I will submit a grant proposal,” with the following results: *strongly agree–agree* = 68.75%; *unsure* = 18.75%; and *strongly disagree–disagree* = 12.5%. Sorting of free responses to the postevaluation form (general) are found in Table 4.

Of 21 asked, 14 (67%) completed the postevaluation form regarding submitting a grant proposal. When asked when they planned to submit a grant proposal, 1 (7%) indicated they

did so within the past 6 months, 2 (14%) indicated they do not plan to submit, and 2 (14%) did not respond. Two (14%) planned to submit within the next 4 months, 2 more (28%) within the next 6 months, 4 more (57%) within a year, and 1 more (64%) within 18 months. The 9 that planned to submit within the next 18 months represented 45% of the original $N = 20$ attendees/writers. Of 10 grant proposals planned for submission, 80% targeted NIH. If no grant proposal was planned for submission within the next 4 months, respondents were asked to provide reasons as to why, and this is presented in Table 4.

Although 19 persons originally agreed to be reviewers, within the first 4 weeks of the seminar, it became clear that 6 reviewers were not needed (because several attendees/writers withdrew or notified all parties that they did not intend to compose any grant proposal sections). Therefore, 13 reviewers were asked to complete postevaluation forms, and 9 (69%) responded. Of note, 4 of the 9 who responded (44%) were not affiliated with the university. Seventy-eight percent reviewed sections for 1 writer; 11% reviewed for 2 writers; and 11% reviewed for 4 writers. Table 5 shows that writers generally met deadlines and used feedback. It also shows that reviewers generally provided written feedback on time. Of note, about 67% of reviewers felt more information was needed about the review process.

Reviewers were asked to consider what worked well during feedback, what needed improvement in the feedback process, and how provision of feedback to writers could be improved. Comments suggested that regularly scheduled and open discussion during feedback was successful. Reviewers indicated that having fewer sessions spread across longer time periods (not during the summer) may facilitate the entire process, including attendance. Occasional communication difficulties between reviewers and writers were also noted as a point of improvement. It was suggested that more regular phone/e-mail access may assist communication, as may having reviewers' and writers' areas of interest more closely aligned (e.g., one writer submitted a grant proposal involving chemistry, which was not directly related to behavior change—the premise of the training experience).

Finally, at 1-year follow-up, participants were asked whether they had submitted a grant. Of the 21 surveys sent, 13 (62%) responded. Eight participants submitted 13 grants (40% of the final $N = 20$ participants); 4 were to NIH or the National Science Foundation (NSF) and 3 more were planned for submission to NIH/NSF within the next 6 months. Of the 13 grants submitted, 3 were funded (2 to NIH/NSF) and 4 were pending (1 to NIH).

DISCUSSION

Results indicate general success of the grant proposal-writing training in health behaviors for university faculty. As a result of the training, one grant proposal was submission-ready at the end of the seminar series. Similarly, 45% planned to submit within the next 18 months, and 80% of grant proposals being submitted targeted NIH. Within about 2 months of the series, 2 more attendees/writers informed the organizers they had submitted grant proposals as a result of the series (for a total of three submissions, or 15% of the $N = 20$). The 1-year follow-up survey indicated that in total, 40% of seminar participants submitted grants. The seminar series increased the confidence that participants could write and actually submit a grant proposal. The increase in confidence is noteworthy as a proximal outcome of this

intervention in that improved confidence is one of the most robust predictors of actual behavior change (Bandura, Adams, & Beyer, 1977; Burleson & Kaminer, 2005; Maisto, Clifford, Longabaugh, & Beattie, 2002; Cerin, Barnett, & Baranowski, 2009; Everson-Hock, Taylor, & Ussher, 2010; Schnoll et al., 2005). Similarly, the evaluations suggested that attendees/writers received what they expected and more from the training. This is significant because the intervention literature indicates that when expectations regarding programming are similar to the realities of what is delivered, outcomes are better than when disparities exist (Kazdin, Siegel, & Bass, 1992; Nock & Kazdin, 2001).

Seminars were delivered with a high degree of quality as indicated in the evaluations. Seminar audience members and leaders appeared sensitive to issues of diversity as they relate to the research enterprise. About 50% of respondents felt diversity was relevant to the seminars, and in cases where such issues were seen as relevant, about 60% of leaders were seen as addressing diversity well. Future trainings will emphasize relevance of diversity training by targeting opportunity for minority grant proposal writers and the relevance of minority issues in research generally (e.g., tailoring interventions, recruitment, health disparities research questions). This is consistent with encouraging diversity among grant-funded scientists and reducing health disparities, both important to funding agencies such as NIH and NSF (NIH, 2006b; NSF, 2009).

Results of the evaluation process suggest that expanding the series over the course of 6 to 9 months may facilitate grant proposal writing, because participants would then have 2 to 3 times the amount of time available to compose proposals. Results suggested a wide range of persons attending the series. Future seminar series may consider recruiting writers with more research experience, fewer writers, and only writers with a sponsor who is associated with the training experience (to act as a mentor). Alternatively, a seminar series might also be offered at a more introductory level for persons newer to grant proposal writing. It is possible that focusing on persons better positioned to access grants may result in more grants, which in turn may result in more resources to foster less experienced writers, providing them with more opportunity to access collaborators. This may in turn further enhance an atmosphere where grant proposal writing is seen as a priority rather than an activity that is scheduled *if* there is time.

Results of the evaluation process also suggest that the organizers might have considered a meeting for potential reviewers and training faculty before the series started. This might have reduced the number of questions regarding expectations, may have assisted with understanding the varied needs of attendees/writers, and so forth. The administrative decision to provide the series was made about 1 month before the training was to commence, and this precluded organizational meetings in order to discuss the detailed mechanics of the training. Therefore, to facilitate matters, memos with directions and expectations were distributed to reviewers. However, evaluations clearly indicated expectations for the review process were unclear (67% wanted more information regarding the review process). The AA who disseminated the memos noted that several factors may have contributed to this situation. Reviewers may not have read the memos or may have forgotten their contents. In addition, the review dates were sent separately from the memo with the instructions so this may have been difficult for reviewers. One of the organizers and

the AA noted that writers/attendees and reviewers did not uniformly communicate spontaneously. In some cases when communication was attempted, it was via the AA, although the organizers attempted to encourage more direct and regular communication.

The following methods might be used to enhance the clarity of the review process and communication more generally: use of a mentor/sponsor as mentioned above to more directly coach writers; a brief orientation meeting for reviewers; and a brief memo with directions and expectations provided along *with* the review schedule sent out at least once during the training experience. Finally, reducing the variability in attendee/writer experience may also assist in facilitating the review and communication process. The organizers weighed whether or not to keep the training to a small number of more experienced investigators or open it up to a larger number of investigators with more varied background. In the spirit of collaboration, a decision was made to be more inclusive for this training endeavor. Given the varied background of attendees/writers, the condensed time frame, and the volume of attendees/writers, overall the training was a success.

The evaluation process indicated that the most valuable elements of the experience for attendees/writers were the regularly scheduled feedback process (even reviewers and those who did not write indicated the value of this step), access to successful and experienced NIH grant proposal writers, and seminars devoted to writing specific grant proposal sections. Impediments to writing grant proposals were competing time demands, task difficulty, and lack of administrative support. On the other hand, investigators may benefit from an emphasis on those aspects of grant proposal writing that both mitigate these impediments and motivate the grant proposal-writing enterprise, including mutual support from peers, encouragement from experienced colleagues, reminders of the potential impact of the research (should it be funded), and administrative support.

Given that the decision was made to provide the training to a large number of faculty members with varied backgrounds, that it was condensed into about 21 hours over 14 sessions, and was organized in about a 4-week period, it is noteworthy that the training was successful. Although the original training announcement indicated a focus on behavior change, that one of the grant proposals submitted involved chemistry speaks to our use of a successful grant proposal-writing *process*. Future endeavors would benefit from financial support to conduct more focused training with fewer investigators, perhaps in the form of a training grant. Such a grant would provide more administrative resources as well as time to formally recruit persons well positioned to submit grant proposals with coaching from experienced mentors. In addition, such a training grant could also use a consortium model for the training experience, with added integration of community collaborators (44% of the reviewer evaluations were not from the university) which expands opportunities for new grant proposal writers, and encourages collaborations even among training faculty. Clearly university administration can also facilitate such a climate by making serious grant proposal submissions part of formal expectations at the time of hire, and during promotion/tenure review, and by providing generous pre- and postaward support.

CONCLUSIONS

There are several implications of this project and how it might be applied in the field. This study indicates groupings of homogeneous writers, use of close mentoring (to facilitate communication, for example), direct coaching on specific grant sections, provision of scheduled written feedback, maintaining writer motivation (via peer support, for example), pre- and postaward administrative support, and using methods to make expectations clear to persons reviewing grants (perhaps via behavioral contracting) may all facilitate the process.

Unlike previous studies on grant proposal training, this study focused on teaching *faculty* about grant proposal writing, although audience members included nonfaculty; outlined how to engage reviewers and seminar leaders; and it provided comprehensive qualitative data from various viewpoints on factors that impeded and facilitated the process. A wider implication of this study is that grant-proposal writing can be structured, encouraged, and taught using the framework presented here; however, there may be other avenues by which to accomplish these goals and further work is needed. A limitation of this study is that the sample size is not larger ($N = 20$). Even so, it is important to study factors that both impede and facilitate grant proposal development and this study assists in illuminating such factors using rich qualitative data.

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REFERENCES

- Bandura A, Adams NE, Beyer J. Cognitive processes mediating behavioral change. *Journal of Personality and Social Psychology*. 1977; 35:125–139. [PubMed: 15093]
- Brokenpipeline.org. A broken pipeline? Flat funding of the NIH puts a generation of science at risk. 2008. Retrieved from <http://brokenpipeline.org/brokenpipeline.pdf>
- Burleson JA, Kaminer Y. Self-efficacy as a predictor of treatment outcome in adolescent substance use disorders. *Addictive Behaviors*. 2005; 30:1751–1764. [PubMed: 16095844]
- Carnegie Foundation for the Advancement of Teaching. Classifications. 2007. Retrieved from <http://www.carnegiefoundation.org/classifications/sub.asp?key=748&subkey=16133&start=782>
- Cerin E, Barnett A, Baranowski T. Testing theories of dietary behavior change in youth using the mediating variable model with intervention programs. *Journal of Nutrition Education and Behavior*. 2009; 41:309–318. [PubMed: 19717113]
- Ding H. The use of cognitive and social apprenticeship to teach a disciplinary genre: Initiation of graduate students into NIH grant writing. *Written Communication*. 2008; 25:3–52.
- Eissenberg T. Teaching successful grant writing to psychology graduate students. *Teaching of Psychology*. 2003; 30:328–330.
- Everson-Hock ES, Taylor AH, Ussher M. Readiness to use physical activity as a smoking cessation aid: A multiple behaviour change application of the transtheoretical model among quitters attending stop smoking clinics. *Patient Education and Counseling*. 2010; 79:156–159. [PubMed: 19818578]

- Kazdin AE, Siegel TC, Bass D. Cognitive problem-solving skills training and parent management training in the treatment of antisocial behavior in children. *Journal of Consulting and Clinical Psychology*. 1992; 60:733–747. [PubMed: 1401389]
- Maisto SA, Clifford PR, Longabaugh R, Beattie M. The relationship between abstinence for one year following pretreatment assessment and alcohol use and other functioning at two years in individuals presenting for alcohol treatment. *Journal of Studies on Alcohol*. 2002; 63:397–403. [PubMed: 12160097]
- National Institutes of Health. Association of Independent Research Institutes presentation. 2006a. Retrieved from <http://report.nih.gov/award/trends/airi2006.ppt#4>
- National Institutes of Health. Fact sheet: Health disparities. 2006b. Retrieved from <http://www.nih.gov/about/researchresultsforthepublic/HealthDisparities.pdf>
- National Institutes of Health. National Institutes of Health (NIH) extramural data book. 2008. Retrieved from <http://report.nih.gov/index.aspx>
- National Science Foundation. Broadening participation for greater diversity. 2009. Retrieved from <http://www.nsf.gov/mps/dmr/diversity.jsp>
- Nock MK, Kazdin AE. Parent expectancies for child therapy: Assessment and relation to participation in treatment. *Journal of Child and Family Studies*. 2001; 10:155–180.
- Schnoll RA, Wang H, Miller SM, Babb JS, Cornfeld MJ, Tofani SH, Engstrom PF. Change in worksite smoking behavior following cancer risk feedback: A pilot study. *American Journal of Health Behavior*. 2005; 29:215–227. [PubMed: 15899685]
- Stein LAR, Colby SM, O’Leary T, Monti PM, Rohsenow D, Spirito A, Barnett NP. Response distortion in adolescents who smoke: A pilot study. *Journal of Drug Education*. 2002; 32:271–286. [PubMed: 12556133]
- Stein LAR, Lebeau-Craven R. Motivational interviews & relapse prevention for DWI: A pilot study. *Journal of Drug Issues*. 2002; 32:1051–1070. [PubMed: 20485471]
- URI Division of Research and Economic Development. URI Division of Research and Economic Development annual report FY2008. 2008. Retrieved from <http://www.uri.edu/research/tro/annualreport/annreptstatsum08.pdf>

TABLE 1

Seminar Topics by Session Number

Session Number	Topic
1	Types of agencies and awards
2	Administrative issues (subcontracts/ consultants); distinction between R21 and R01
3	How to write abstract/aims, and background and significance
4	How to write Preliminary Studies
5	General discussion of abstract/aims; how to write Methods
6	Statistics and Power Analyses sections
7	How to write Human Subjects section
8	Abstract/Aims, and Background and Significance due; discussion on F and K grants
9	Preliminary Studies due; review of Abstract/ Aims, and Background and Significance
10	Questions/answers; Preliminary Studies review
11	Discussion on Budgets; handling reviewer feedback
12	Methods due (with changes to Abstract/Aims, and Background and Significance, and Preliminary Studies); discussing post-award management issues
13	Human Subjects due; Methods review
14	Human Subjects review; final advice for assembling budget and grant (including rewrites of Methods and Human Subjects sections)

TABLE 2

Seminar Evaluations

	Attendee/Writer Rating (In Percentage) ^a		
	Excellent/Good	Satisfactory	Fair/Poor
Teaching ability	90	10	0
Relates material to getting grant	92	6	2
Relevance of material to training	89	11	0
Overall teaching	92	7	1
Level of difficulty of material	84	13	3
Quality of reading materials	92	7	1
	Yes	No	Unsure
Objectives clear?	95	4	1
Diversity relevant?	48	31	27
Leader addressed diversity well? ^b	58	42	0
	Leader Rating (In Percentage) ^c		
	Excellent/Good	Satisfactory	Fair/Poor
Audience engagement	100	0	0
Audience attention	90	10	0
Resources available for seminar	100	0	0
Topic appropriateness for audience	80	20	0
Clarity of scheduling, expectations, etc.	90	10	0
Audience interested in diversity issues	86	14	0

^a Average across seminars was $N = 17$.

^b Out of number endorsing diversity as relevant.

^c $N = 11$ for leaders.

TABLE 3

Sorting of Free Responses for Seminar Evaluations

Question	Response Category
Attendees/writers	
How can diversity issues be better addressed? ^a	<p>More information on how minority grant proposal writers may access funding opportunities</p> <p>Assistance in generating relevant hypotheses regarding diversity</p> <p>Recruitment strategies to enhance diversity of sample selection</p> <p>Tailoring treatments to minorities</p> <p>Statistical methods to detect bias in treatment/assessment</p>
How can future seminars be improved?	<p>General need for more information on funding sources (8 responses)</p> <p>Improved delivery (e.g., hand out more materials; 7 responses)</p> <p>Improved time management (e.g., leave time for questions; 5 responses)</p> <p>Provide more detail (e.g., definitions of terms; 19 responses)</p> <p>Provide less information (5 responses)</p>
What worked particularly well in seminars?	<p>Information was helpful (e.g., presentation of different approaches to writing grant proposal sections; 22 responses)</p> <p>Delivery style (e.g., presenters were experts in the field; 18 responses)</p> <p>Presentation of examples (8 responses)</p>
Leaders	
How can seminars be improved?	<p>Maintain attendance towards the end of the series (2 responses)</p> <p>Leaders can reorganize their presentations (e.g., present Aims then Background and Significance across more than one session; 3 responses)</p> <p>More time with the audience (4 responses)</p>

^aNumber of responses not provided for this inquiry because not enough respondents endorsed diversity as relevant.

TABLE 4

Sorting of Free Responses: Postevaluation for Attendees/Writers

Question	Response Category
What was least motivating about writing a grant proposal?	Difficulty with various sections (3 responses)
	Time commitment (e.g., invest time and not get funded; 3 responses)
What was most motivating?	Increased job satisfaction (e.g., autonomy; 6 responses)
	Accessing added support (e.g., for students; 4 responses)
	Contributing to knowledge base (e.g., making an impact; 6 responses)
How can grant proposal writing be facilitated?	Support in the form of encouragement, expert consultants, and administrative (9 responses)
What are barriers to grant proposal writing?	Limited preliminary research (3 responses)
	Time constraints (e.g., teaching load; 5 responses)
	Lack of support (e.g., no funding or participants available for interest area, no administrative support; 3 responses)
	None (2 respondents)
What worked best about the training?	Format (weekly meetings of leaders, training faculty, attendees/writers sharing info on "how to" write; 13 responses)
	Feedback on grant proposal sections (3 responses)
What needs improvement?	Presentation (e.g., room layout; 4 responses)
	Time provisions (e.g., needed more for question and answer; 5 responses)
	More assistance with writing (3 responses)
	Nothing (4 respondents)
What was expected from the training?	Tips and information on grant proposal writing (9 responses)
	General inspiration/motivation to write (e.g., more people interested in participating; 2 responses)
	Exactly what was delivered (3 respondents)
What was actually delivered?	Specific information on how to write a funded grant proposal (8 responses)
	Expert advice (3 responses)
	Motivation (1 response)
	What was expected (3 responses)
What about the training should be increased?	Better use of time (e.g., use of booster sessions; 2 responses)
	Individualized feedback and help (6 responses)
	Nothing (4 respondents)
What should be decreased?	Emphasis on large grant proposals (2 responses)
	Nothing (5 respondents)
What should be changed about the training?	Organization (e.g., expand funding sources, get more writers to write, delineate expectations more frequently; 7 responses)
	Time frame (e.g., provide 20 minutes of writing time at the end, not hold training during the summer; 5 responses)
	Nothing (2 respondents)
Reasons for not planning to submit a grant in the next 4 months?	Time (e.g., no time in general to write, manuscripts for tenure review take priority; 4 responses)
	Work on preliminary studies takes priority to make grant proposal more viable (2 responses)

TABLE 5

Postevaluation: Reviewer

	Rating (In Percentage) ^a				
	Strongly Agree/ Agree	Unsure	Disagree/Strongly Disagree		
Writers met deadlines	77.77	11.11	11.11		
Writers incorporated feedback	66.66	11.11	22.22		
Review process information was clear	33.33	0.00	66.66		
	Percentage of Sessions				
	0-24%	25-49%	50-74%	75-89%	90-100%
Feedback provided in person	22.22 ^b	0.00	0.00	0.00	55.56
Written feedback provided on time	0.00	0.00	11.11	44.44	44.44

^a *N* = 9.^b Prearranged to submit written feedback to organizers who would provide oral feedback in person on scheduled review date.