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A Community–Academic Partnered Grant Writing Series to Build Infrastructure for Partnered Research

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Abstract
Grant writing is an essential skill necessary to secure financial support for community programs and research projects. Increasingly, funding opportunities for translational biomedical research require studies to engage community partners, patients, or other stakeholders in the research process to address their concerns. However, there is little evidence on strategies to prepare teams of academic and community partners to collaborate on grants. This paper presents the description and formative evaluation of a two-part community–academic partnered grant writing series designed to help community organizations and academic institutions build infrastructure for collaborative research projects using a partnered approach. The first phase of the series was a half-day workshop on grant readiness, which was open to all interested community partners. The second phase, open only to community–academic teams that met eligibility criteria, was a 12-week session that covered partnered grant writing for foundation grants and National Institutes of Health grants. Participants in both phases reported an increase in knowledge and self-efficacy for writing partnered proposals. At 1-year follow-up, participants in Phase 2 had secured approximately $1.87 million in funding. This community–academic partnered grant writing series helped participants obtain proposal development skills and helped community–academic teams successfully compete for funding. Clin Trans Sci 2015; Volume #: 1–6

Keywords: evidence based medicine, outcomes research, structure, translational research

Introduction

Grant writing is an essential skill necessary to secure financial support for community programs and research projects; it is the economic engine for research and services. Traditionally, local government agencies, academic institutions, and community-based organizations (CBOs) apply for grant funding through announcements from federal government and private foundations. However, the grant writing process is an elusive art form that many, including seasoned grant writers, find challenging. Many books, articles, and trainings for grant writing target academic investigators,[1–6] but fewer resources are available for CBOs interested in research writing grant proposals, and even less for community-partnered grants.[6,7]

Typically, an academic investigator completes the proposal for community–academic collaborations without substantial involvement of the community partner.[2–5] Increasingly, funders are requiring that studies demonstrate engagement of community partners, patients, or other stakeholders across the entire research process to address the concerns of those groups around biomedical research and health.[8] Although there has been some work on how to build capacity for conducting rigorous community-engaged research (CEnR) and support teams as they prepare for federal grant proposal drafts,[9] to our knowledge, there are no prior reports of programs that train community–academic teams in partnered grant writing.

This paper presents the description and formative evaluation of a community–academic grant writing series conducted through the University of California, Los Angeles Clinical and Translational Science Institute (UCLA CTSI) Community Engagement and Research Program (CERP) to help build infrastructure for partnered translational research. We present a formative evaluation of the grant writing series, which focuses on lessons learned and the modifications planned to enhance the effectiveness of the program and its broader implementation.

Methods

The UCLA CTSI is composed of four partner institutions—Cedars-Sinai Medical Center, Charles Drew University of Medicine and Science (CDU), Los Angeles Biomedical Institute at Harbor-UCLA Medical Center, UCLA—and a network of community partners. The UCLA CTSI CERP facilitates research collaborations between academics, clinicians, public health officials, patient groups, and community-based stakeholders to improve health and health care in Los Angeles County. CERP routinely collaborates with CBOs on conferences, research projects, and trainings. During a 2012 CERP retreat for community stakeholders and research faculty, both groups identified support for writing partnered grant proposals as a high priority. Community partners were interested in securing research partners, support for training and infrastructure, and funding for projects aligned with their organizations' core mission. Researchers wanted to help community stakeholders participate more fully in partnered research. To address these needs, we designed and implemented the Community–Academic Grant Writing Series.

Developing the UCLA CTSI CERP community–academic grant writing series

CERP faculty, staff, and community partners collaborated with a nonprofit serving agency, Assist Management and Consulting, LLC ("Assist"), to plan the curriculum for the grant writing series. Assist has worked with CERP faculty and community partners to prepare grant applications for projects totaling more than $200 million over the last 15 years. An Assist curriculum, originally developed with separate sessions for CBOs and for academic researchers, was modified to meet the following objectives: (1) help teams of community organizations and academic institutions determine their readiness to write a partnered grant, (2) introduce these teams to diverse sources of funding and funder-specific proposal

	Module	Name of workshop	Purpose	Days/weeks	Evaluation
Introductory session (open to all)	Module 1	Let's talk about grant readiness.	To understand the different types of grants for different kinds of organizations. To determine readiness for your organization and establish which grant type is best for you/your organization.	1 day	Pre–post
		Grant writing, getting ready, understanding the language	Learn about the basic language, and understand what funders are you looking for		
		Grant writing—an intense overview of how to prepare a grant	Topics covered include searching for funding sources, program development, outlining a proposal, and submitting. Complete a grant outline to begin writing your own proposal.		
Intensive 12-week session (invited)	Module 2	CBPR—collaborative academic/community grant writing (evaluation, research, and service)	To understand the benefits of collaborative grant writing, what organizations have to have in place before starting, and begin the process of developing mutually beneficial proposals.	4 weekly 4-hour sessions	Post only
	Module 3	Corporate, community, and private foundation grant writing	To learn corporate and community foundation grant writing language and techniques, as well as have hands-on experience in the writing process. This module is for academic investigators who do not have experience with private foundation grant writing and community members/organizations that are new to granting writing.	4 weekly 4-hour sessions	Post only
	Module 4	NIH grant writing—unsolicited	To learn NIH government grant writing language, and techniques, as well as have hands-on experience in the writing process. This module is specifically designed for any academic researchers, and community members/organizations interested in submitting grant proposals to NIH.	4 weekly 4-hour sessions	Post only

Table 1. Grant writing series module objectives.

language and formatting, and (3) help community–academic teams develop or revise a foundation or NIH proposal that effectively demonstrated evidence of partnership.

The curriculum was divided into two components: Phase 1—an Introductory Session (Module 1) for CBOs and academic institutions interested in learning about grant writing and determining their own grant readiness, and Phase 2—an Intensive 12-week series (Modules 2–4) for partnered grant-ready teams (*Table 1*). The workshops were advertised in several venues: by email listserv to the CERP community partners and faculty, during presentations at events sponsored by CERP or its community partners, and by word of mouth.

Grant writing series

Module 1: are you grant ready?
Module 1, the Introductory Session, was a 7-hour workshop held in December 2012, at the Martin Luther King-Multi Ambulatory Care Center (MLK-MACC), which regularly hosts community events in South Los Angeles. The session was led by Assist leadership and staff with support from CERP faculty and staff. Topics included: (1) grant readiness and grantsmanship basics for CBOs and academic institutions interested in partnered proposals, (2) grant language, and (3) a brief overview of the grant application writing process that used the process of buying a house to illustrate the steps involved in writing the proposal. A grant readiness self-assessment (Appendix S1), developed by the Assist-CERP team, was administered to help attendees assess their own and their organization's preparation to partner on a proposal. Participants responded to questions about the priorities and current activities of their CBO, agency, research unit, or institution and provided information on nonprofit tax

exemption status, budget, sources of income, past grant awards, and partnership history.

Attendees completed grant application preparation knowledge, self-efficacy surveys pre- and postworkshop, and a postsession evaluation (Appendix S2 and S3). Response choices were measured with a Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). A higher score indicated higher knowledge or self-efficacy.

Community–academic grant writing series (Modules 2–4)
The intensive 12-week partnered grant writing series involved a competitive application process. To be eligible to participate in the series, a community–academic team had to include at least two representatives from a CBO and an academic investigator. The requirement for at least two community partner representatives was recommended by CERP community partners, who expressed concern about staff turnover, particularly in smaller CBOs, and felt that having two or more staff from a CBO would increase the likelihood that newly developed grant writing expertise would confer a longer-term benefit to the organization. The CBO had to have 501(c)³ tax-exemption status. Each team was asked to submit a one-page letter of intent (LOI). The LOIs were reviewed by the Assist-CERP team using the following criteria: (1) a clearly defined and feasible project proposal, (2) a commitment to community engagement, and (3) the inclusion of at least one CBO partner and one academic investigator.

From April to June 2013, Phase 2 was conducted at CDU where each module lasted 4 weeks (*Table 1*). At the end of each weekly session, an evaluation was administered, consisting of three open-ended questions (Appendix S4). CERP staff reviewed the feedback, iteratively modified program activities and format in response to some requests (e.g., providing both paper and

Module 1: are you grant ready?	Community (*n* = 29)	Academic (*n* = 11)
Gender		
Female	27	9
Male	2	2
Invited to attend grant writing series also attended introductory session	5	1
Attended introductory session and grant writing series	3	1
Modules 2–4: 12-week intensive grant writing series	Community (*n* = 21)	Academic (*n* = 9)
Gender		
Female	12	7
Male	9	2
Attended intro session and grant writing series (all modules)	3	1

Table 2. Grant writing series demographics.

Questions	Preworkshop (*n* = 36) *N* (%)	Postworkshop (*n* = 37) *N* (%)	Chi-square *p* value
Know the different funding sources available.	11 (30.5)	32 (86.4)	**0.012**
Confident searching for appropriate funding opportunities for me/my organization.	10 (27.8)	31 (83.7)	**0.009**
Confident identifying appropriate grant opportunities for me/my organization.	14 (38.9)	30 (81.0)	0.064
Understand and can define grantsmanship terms well.	10 (27.7)	26 (70.2)	**0.032**
Know the essential components of a grant and can respond to them accurately.	12 (33.3)	28 (75.2)	**0.047**
Understand how to prepare to collaborate with a community or academic partner to write a grant proposal.	8 (22.2)	24 (64.8)	**0.020**
Note: Proportion of attendees that agreed or strongly agreed with each statement.			

Table 3. Module 1: Are you grant ready? Pre–post results.

electronic copies of the presentation slides), and shared aggregate recommendations and changes with the teams the following week.

Module evaluations were also completed at the end of each 4-week module. Attendees were asked whether they agreed with statements such as "I understand the benefits of collaborative grant writing" (Module 2), "I understand foundation grant writing language" (Module 3), and "I understand how to identify appropriate NIH grant funding opportunities" (Module 4) (See Appendix S4 for full evaluations). Response choices ranged from 1 ("strongly disagree") to 5 ("strongly agree"). At 12-weeks, participants were asked to provide an overall evaluation of Modules 2–4 and to make recommendations for improving the course.

Approximately 6- and 12-months after series completion, we contacted each team by email or phone to inquire about the submission status of their partnered proposals, their work on other partnered proposals since the culmination of the grant writing series, and whether they intended to write more partnered proposals.

Analytic methods
Descriptive analyses were performed for evaluations from all modules (introduction and intensive sessions) and the 6-month and 12-month follow ups. For Module 1, chi-square analyses were used for the pre–post evaluations to assess grant writing knowledge and self-efficacy. Quantitative analyses were conducted

by using Stata Statistical Software Release 13 (College Station, TX, USA). For Modules 2–4, we performed content analysis of the participants' responses to the open-ended questions from the weekly session evaluations. Responses were compiled, categorized, and summarized by the Assist-CERP team.

Results

Module 1: are you grant ready?
Of the 40 introductory workshop attendees 29 were from CBOs and 11 from academic institutions (*Table 2*). Attendees reported a significant increase in knowledge about available funding sources (*p* = 0.012), more confidence in their ability to search for and identify appropriate funding opportunities (*p* = 0.009), and better understanding of grantsmanship terms (*p* = 0.032). They also indicated that they had a better understanding of how to prepare to write a partnered grant proposal (*p* = 0.020) and enhanced ability to respond accurately to the components of a grant application (*p* = 0.047) (*Table 3*).

Modules 2–4: intensive grant writing series
Of the 16 teams that submitted proposals for the 12-week series, 13 were invited to participate. We excluded three teams that did not fulfill all the LOI requirements. Three of the invited teams

Community organization/lead	Academic partner site/name	Proposal topic
Healthy Improvements	UCLA	Project Life After: Cancer Survivorship
Brotherhood Crusade	UCLA	Mental Health Outcomes in Young Black Men
Centro Latino for Literacy	CDU / UCLA	Health Awareness & Advocacy for Illiterate Spanish-speaking Parents
Greater Crenshaw Education Partnership	CSUN	Academic Achievement, Leadership Development, and Mentorship for Young Men of Color
LA County DPH	UCLA	Cultural & Linguistic Competencies
Los Angeles Urban League	UCLA	Fuel Your Health Through Movement
MLK-MACC (LAC DHS)	Harbor UCLA	Geriatric Care Transitions Collaborative
The Children's Clinic	UCLA	Bright Beginnings Program
Children's Nature Institute	UCLA	Education by Nature (ExN)
The UMMA Clinic	UCLA	Patient-Centered Community Action Board at UMMA Community Clinic

MLK-MACC (LAC DHS) = Martin Luther King Medical Ambulatory Care Center, Los Angeles County Department of Health Services; LA County DPH = Los Angeles County Department of Public Health; UCLA = University of California, Los Angeles; CDU = Charles Drew University; CSUN = California State University, Northridge.

Table 4. Twelve-week grant writing series community–academic partnered teams.

Module 2: collaborative grant writing (n = 15)	(N) %
Understand benefits of collaborative grant writing.	14 (93.3)
Understand how to identify appropriate grant funding opportunities for research and/or nonprofit endeavors.	23 (86.6)
Understand how to identify projects mutually beneficial to partner with a community partner to collaborate on a grant proposal.	12 (80.0)
Understand how to identify projects mutually beneficial to partner with an academic investigator to collaborate on a grant proposal.	12 (80.0)
Understand how an academic institution's grants and contracts office works on a grant proposal.	7 (46.7)
Know how to start the process to develop an outline for a foundation grant.	13 (86.7)
Confident completing registrations (i.e., eCommons, grants.gov).	11 (73.4)
Confident developing a mutually beneficial proposal.	12 (80.0)
Module 3: corporate, community, and private foundation grants (n = 19)	
Understand foundation grant writing language.	16 (84.2)
Understand techniques of foundation grant writing.	16 (84.2)
Understand different sections for common foundation grants.	15 (78.9)
Confident signing up for community foundation list serves.	14 (73.7)
Confident writing a foundation grant proposal.	13 (68.4)
Module 4: unsolicited NIH grants (n = 16)	
Understand NIH government grant writing language.	11 (68.8)
Understand how to identify appropriate NIH grant funding opportunities.	11 (68.8)
Confident signing up for NIH list serves.	10 (62.5)
Understand techniques necessary to write a NIH grant proposal.	12 (75.0)
Confident writing a NIH grant proposal.	8 (50.0)

Note: Proportion of attendees that agreed or strongly agreed with each statement.

Table 5. Modules 2–4: community–academic grant writing postseries results.

were unable to attend due to time conflicts or their distance from the workshop location, leaving 10 teams that enrolled (*Table 4*).

The 10 enrolled teams included 30 participants (21 from CBOs; 9 from academic institutions). The mean duration of prior partnership was 2.9 years (range: 1–10 years). Four of the 10 teams were current CTSI community partners, and four of the participants had attended Module 1.

Upon completion of Module 2, the majority of participants reported that they understood the benefits of collaborative grant writing and how to identify appropriate grant funding opportunities for their organizations and teams, begin the grant preparation process, and develop a proposal (range: 73.4–93.3%; *Table 5*). However, fewer than half of the participants understood the role of the academic institution's grants and contracts office

Key participant feedback	(%)
Weekly 4-hour sessions did not provide enough time to learn, synthesize, and implement the grant writing concepts and skills learned each week. More time should be allocated.	95.0
A workbook containing all slides and handouts should be provided to each participant.	80.0
The instructor should distribute sample foundation or research proposals written using the techniques taught in the series.	30.0
The instructor should provide examples of both awarded proposals and unsuccessful proposals with reviewers' feedback.	30.0
The series should begin with a more detailed introduction regarding why community–academic partnership is important and what potential strengths and weaknesses each partner brings to the partnership.	15.0
A detailed explanation of types of grants should be covered in the series. The discussion should include the advantages and disadvantages of each grant type.	15.0

Table 6. Participant feedback for intensive grant writing series.

Funding description	Funding type	Amount
A program to address the effects of toxic stress and chronic exposure to violence in infants, toddlers, and pregnant mothers.	Foundation	$1,000,000
Implementation of the Healthy Families program model to serve and strengthen underserved families in Long Beach's Best Start Community.	Public Health	$270,000
A program to enhance knowledge and preparedness of families for natural disaster events that could occur in Southern California.	Foundation	$200,000
Provide state-of-the-art rehabilitation equipment for children and young adults with physical disabilities from 0 to 21 years of age to enhance the patients' quality of life.	Public Health	$200,000
To provide hands-on training workshops and technical assistance at clinical practice sites for primary care providers and their support staff serving patients with asthma.	Public Health	$150,000
To engage interested overweight/obese adult and pediatric patients into appropriate wellness services and activities.	Foundation	$50,000
	Total	$1.87M

Table 7. Grant funded proposals.

(46.7%). Generally, there was a better understanding of the process of preparing for and writing corporate, community, and private foundation grants (Module 3) compared to unsolicited NIH grants (Module 4).

Content analysis of the weekly responses to the three questions assessing participant satisfaction indicated that the majority of attendees would use the information learned in the series to write grants for their respective institutions. Many reported the information would be used to incorporate community-based participatory research (CBPR) methods into the grant writing process. Some attendees reported the information would prepare them to take on new roles other than being the writer in the grant writing process.

Participant feedback
At the end of the 12-week series, participants had several recommendations for improving the series (*Table 6*). Some participants recommended that the series offer one track for community and academic partners new to grant writing and another track for partners with grant writing experience. Many found it difficult to stay engaged in the course with the varying grant writing experience levels. This feedback was also given during the series so the facilitator responded to these concerns in subsequent sessions by tailoring portions of the sessions to different groups: for novice grant writers, detailed explanations

were given in class and for more experienced grant writers, more challenging homework assignments were given. Participants also recommended incorporating more team-based activities into the curriculum to encourage incorporating elements of each partner's expertise into the proposal. A small number of participants reported inadequate time commitment from their academic partners, which contributed to difficulty completing module assignments or proposal sections as a team. Although the participants had no specific recommendations, they encouraged the planning group to identify ways to incentivize faculty to participate more fully.

Funded projects
At 12-month follow up, 4 of the 10 teams had submitted at least one proposal. Two teams had submitted one proposal, another team had submitted two proposals and one team had submitted three proposals. Six of the seven proposals submitted were funded totaling $1.87 million (*Table 7*).

Discussion
The UCLA CTSI CERP Community–Academic Grant Writing Series is an innovative program that supports partnered research for proposal development. Several developments, including an increase in CBPR related grants and the creation of the Patient Centered Outcomes Research Institute (PCORI), underscore the

need for authentic partnering throughout the research process to more fully engage all partners and offer opportunities for new insights and innovations.[8] There is early evidence that the grant writing series enhanced knowledge and self-efficacy and helped participants to successfully compete for funding, with an emphasis on foundation and public health grants. Of the teams funded, one had previous team grant writing experience.

Limitations for Module 1 include a lack of long-term data on study participants who did not participate in Modules 2–4. Although participants reported increased knowledge and self-efficacy, it is not clear if these changes translated into partnered grant submissions or funding. For Modules 2–4, although we do not have data on change in knowledge or self-efficacy, follow-up data suggest that the program helped participants obtain funding. Long travel distances and time constraints made it difficult for some invited teams to participate. Although most teams included community advocacy organizations and community health clinics, we had little representation of stakeholders such as patient groups and public health representatives. Lack of data collection on the quality of the partnership between team members limits our understanding team members dynamics and how they influenced course processes and outcomes; or how best to refine selection of participants for the Intensive course and the organization and content of all modules. Finally, our results may not be generalizable to other CTSAs that do not have maturely formed partnerships.

In response to these limitations, our early experiences, and feedback from the series attendees, we plan several modifications to improve the participant experience during the course and its utility to them. First, we will offer distinct, shorter NIH or foundation grant writing workshops in separate tracks. We will also develop separate tracks for novice grant writing teams and more experienced grant writers. To address the considerable barriers posed by travel and time constraints, we propose to modify the workshop to combine in-person group meetings, synchronous online classes, and opportunities for asynchronous online virtual sessions. Additionally, because fewer than half of the attendees understood the purpose of an academic institution's grants and contracts office, we have worked with representatives from these offices in each of our CTSI's four institutions to prepare materials that provide contact information and describe their roles and services for future workshops. All modules were offered to participants at no cost, as the UCLA CTSI covered the cost associated with curriculum development, facilitator time, and the venue. For future sessions, we will consider cost-sharing or sponsorship to expand the scope of the sessions offered and extend their reach to a broader audience. Finally, relationship building and careful selection of participants are prerequisites for other CTSAs interested in implementing a similar grant writing series.

Conclusion
Early results of the first UCLA CTSI CERP grant writing program indicate that it enhanced the skills of community–academic grant writing teams, enabled them to demonstrate evidence of partnership, and helped them to secure funding for partnered projects to conduct community-engaged or health services research, provide service, or build infrastructure for partnered research. The UCLA CTSI CERP is developing a formal evaluation of the program and is working to identify ways to more effectively tailor the series to the needs of the community and academic partners, provide these services to a wider group of community and academic stakeholders, and disseminate information on the series to other CTSAs.

Supporting Information
Additional supporting information may be found in the online version of this paper.

Appendix S1. An evaluation tool used in "Module 1: Are you grant ready?" to assess the organization's readiness to write grant proposals.
Appendix S2. A pre–post evaluation tool used in "Module 1: Are you grant ready?" to assess the attendees knowledge and efficacy of grant writing.
Appendix S3. An evaluation tool used in "Module 1: Are you grant ready?" to assess module usefulness and obtain feedback from attendees.
Appendix S4. Evaluation tools used in Modules 2–4 of the series to assess (1) the attendees knowledge and efficacy of writing grant proposals and (2) obtain series feedback from attendees.

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