

Promotion and tenure for community engaged research:

An examination of promotion and tenure support for community engaged research at three universities collaborating through a Clinical and Translational Science Award

David G. Marrero, PhD¹, Emily J. Hardwick, MPH¹, Lisa K. Staten, PhD², Dennis A. Savaiano, PhD³, Jere D. Odell, MA, MLS¹, Karen Frederickson Comer, MLA⁴, and Chandan Saha, PhD¹

¹Indiana University School of Medicine, ²Indiana University School of Public Health, ³Purdue University, ⁴IU Polis Center

***Acknowledgements:** This project, in part, with support from the Indiana Clinical and Translational Sciences Institute funded, in part by grant # TR000006 from the National Center for Advancing Translational Sciences, Clinical and Translational Sciences Award.*

David G. Marrero, PhD
410 W. 10th Street, Suite 1140
Indianapolis, IN 46202
Phone: 317-278-0900
Fax: 317-278-1750
Email: dgmarrer@iupui.edu

Abstract

Introduction. Community engaged health research, an approach to research which includes the participation of communities, promotes the translation of research to address and improve social determinants of health. As a way to encourage community engaged research, the National Institutes of Health required applicants to the Clinical and Translational Science Award (CTSA) to include a community engagement component. Although grant-funding may support an increase in community engaged research, faculty also respond to the rewards and demands of university promotion and tenure standards. This paper measures faculty perception of how three institutions funded by a CTSA support community engaged research in the promotion and tenure process. **Methods:** At three institutions funded by a CTSA, tenure track and non-tenure track faculty responded to a survey regarding perceptions of how promotion and tenure committees value community engaged research. **Results:** Faculty view support for community engaged research with some reserve. Only 36% agree that community engaged research is valued in the promotion and tenure process. **Discussion:** Encouraging community engaged scholarship requires changing the culture and values behind promotion and tenure decisions. Institutions will increase community engaged research and more faculty will adopt its principles, when it is rewarded by promotion and tenure committees.

Introduction

Medical and academic science has made incredible advances in the past few decades. Unfortunately, there often remains considerable delay in the results of investigations being translated into public health practice. In response to this lag, the National Institutes of Health (NIH) implemented the Clinical and Translational Research Awards (CTSA) with the intention of promoting timely translation of research into evidence-based policy and practice.¹ Importantly, the NIH recognized that one barrier to translation is a lack of attention to the social determinants of health (SDOH).²⁻⁴ One strategy to address SDOH is through increased community involvement in research. Thus, CTSA are mandated to engage communities more fully in the research process. In this context, community engaged research (CEnR) calls for the engagement of communities in the research process, ranging from simply conducting research in communities to more involved participatory research in which communities are fully engaged partners in all aspects of the research process.⁵

One issue in the adoption of CEnR is the extent to which it is supported by the institutions in which researchers work. There are factors that can make CEnR less attractive to promotion and tenure (P&T) committees as they evaluate the success of investigators. For example, the research methods used in CEnR often differ from what may be considered more traditional, conventional research in both medical and academic sciences. In most research institutions, the randomized control trial (RCT), is widely recognized as the “gold standard” when evaluating academic research.^{6,7} Many CEnR projects, however, cannot accommodate RCT designs.⁸ Moreover, because of the need to integrate community partners coupled with the differences in cultures that often exist between community and academic settings, CEnR

research can take considerably longer to accomplish thus delaying in the publication of results.⁸ Also, many prestigious journals are less accepting of alternative research methods, thus making publication more challenging. Even when CEnR research is published, it is not usually in what are considered “top tier” journals that tend to favor more traditional research methods.⁹ In addition, the focus of CEnR publications may be on “real world effect” resulting in the targeting of nontraditional journals. As a result, CEnR is not always viewed as favorably by university promotion and tenure (P&T) committees when compared with more traditional research approaches.¹⁰ Given the promotion and tenure challenges, there is a lack of tenured senior CBPR researchers to provide mentorship for junior investigators.¹¹ This begs the question of whether young investigators feel that CEnR is a viable research avenue to pursue if they want to be promoted. If investigators do not believe that CEnR will be rewarded, it is less likely to occur, regardless of the mandate by CTSA to encourage it. To explore this issue, the Community Health Engagement Program (CHEP) of the Indiana Clinical and Translational Sciences Institute (Indiana CTSI) surveyed investigators of three of the four universities that comprise the Indiana CTSI: Indiana University, Purdue University, and Indiana University-Purdue University at Indianapolis. The survey asked both tenure track and non-tenure track faculty whether they felt their P&T committees valued CEnR in decisions about promotion. Although other survey research has identified reified promotion and tenure practices inhibit the growth of CEnR in academic health centers, this study (reflecting the interdisciplinary nature of community-engaged scholarship) focuses on faculty from across multiple campuses and schools.¹²

Methods

The survey instrument. To assess whether investigators felt that CEnR would be supported by their respective P&T committees, the Indiana CTSI CHEP constructed an eight item survey. The survey was modeled after the Community Engagement Scholarship Tenure, Promotion, and Review Decisions Survey which is a 19 item instrument that had been developed by the CTSA Community Engagement Education, Scholarship and Engagement Workgroup of the Community Engagement Key Function Committee of the CTSA.¹³

The instrument used contained 8 questions that asked respondents to rate the extent to which they believed that, in their institution, community-engaged scholarship was 1) recognized and valued for all categories of appointments at their institution, regardless of position, 2) recognized and rewarded during promotion and tenure review, and 3) explicitly included in the review, tenure and promotion policies, and that 4) the review and P&T process encouraged publication of community-engaged scholarship, 5) members of the P&T committees had a broad understanding of the definition, nature, documentation and assessment of community-engaged scholarship, 6) the review process should consider being changed to allow community partners to participate in the P&T process, 7) if community partners contributions to the P&T process were seriously considered and valued, and 8) if community-engaged scholarship in general, and its inclusion in the P&T process has increased since their institution was awarded a CTSA. All questions used a five-point scale (strongly agree to strongly disagree). In addition, the respondents were asked to provide their age, race/ethnicity, gender, current academic rank, whether they had ever served on a P&T committee and if they are currently conducting community-engaged scholarship. Finally, respondents were provided the opportunity to offer open-ended comments.

The Sample. All tenure and tenure-track faculty were surveyed at each participating University. At Indiana University, this included 1560 full and part time faculty from 16 different schools/colleges or divisions and 66 departments. From this group 224 (14%) responded to the survey. At Purdue a list of 1425 faculty were provided from 20 different schools/colleges or divisions and 60 departments. From this group, 180 (13%) responded. At IUPUI, 1389 faculty were provided from 15 different schools/colleges or divisions and 83 departments. From this group, 264 (19%) responded. The combined sample was 675 (15.4%).

In all three institutions, there were respondents from all schools and departments. Table 1 shows the gender, race, age, rank and whether the respondent was currently engaged in CEnR and whether they had ever served on a P&T committee. The majority of the sample was male (53%), and Caucasian (74%). The age of the respondents was distributed across the age categories with the smallest respondent pool coming from the 30-39 age category (9.6%). The majority of the sample was full professors (45%), had served on a P&T committee (56.3%), and were not currently engaged in CEnR (61.6%).

Analyses

Study participants' characteristics were summarized using frequency counts and percentages and were presented by institution. Chi-square test was used to compare the study participants among the three institutions. To summarize the primary outcomes, the eight items, ratio of disagree and strongly disagree to agree and strongly agree was computed and 95% confidence interval was reported based on bootstrapping method since both numerator and denominators of the ratio estimates were random. One thousand simulations were used for each item and the following formula was used to construct 95% confidence interval.

Suppose $\hat{\theta}$ is the ratio estimate of disagree and strongly disagree to agree and strongly agree. Then 95% confidence interval is given by $(\hat{\theta}_{2.5\%}, \hat{\theta}_{97.5\%})$, where $\hat{\theta}_{2.5\%}$ is the 2.5th percentile and $\hat{\theta}_{97.5\%}$ is the 97.5th percentile of the distribution of $\hat{\theta}$ and these statistics were estimated from the distribution of observed ratio estimates in 1000 simulations for each item.

Results

The responses to the 8 questions, shown in table 2, indicate that CEnR was viewed with some reserve in the P&T process. The first two questions asked respondents to rate the extent to which CEnR was recognized and valued by their institutions. When asked if CEnR was recognized and valued for all categories of appointments at their institution, 36% of the respondents were affirmative with 8.4% of the sample strongly agreeing and 27% agreeing. On the other hand, an equal proportion of the sample (35%) felt that it was not recognized with 21% disagreeing, and 14% strongly disagreeing. Approximately 17% (113) of the sample neither agreed nor disagreed. Similar results were observed when asked if CEnR scholarship is recognized and rewarded during the P&T process, 35% of the sample either strongly agreed (6%) or agreed (29%) whereas 35% either disagreed (21%) or strongly disagreed (14%). Approximately 17% of the sample neither agreed nor disagreed. The ratio estimate of disagreement to agreement was approximately 1.0 for each of these two items.

The next three questions concerned the extent to which CEnR was formally integrated in the P&T process. When asked if CEnR scholarship was explicitly included in the review, tenure and promotions policies and procedures, 20% of the sample either strongly agreed (4%) or agreed (16%) whereas 51% either disagreed (31%) or strongly disagreed (20%). Approximately 17% (115) of the sample neither agreed nor disagreed. The ratio estimate of disagreement to

agreement (2.45) was significantly different from 1.0. Again a significantly higher proportion of subjects reported disagreement than agreement for whether the P&T process encourages publication in sources that regularly disseminate CEnR scholarship with 28% of the sample either strongly agreeing (8%) or agreeing (20%) and 39% either strongly disagreeing (15%) or disagreeing (24%). When respondents reported on the degree to which members of P&T committees have a broad understanding of CEnR scholarship, only 16% either strongly agreed (3%) or agreed (12%) with this statement while 48% either strongly disagreed (20%) or disagreed (28%) which resulted a ratio estimate of disagreement to agreement 3.03 ($p < 0.05$).

The next two questions concerned the contribution of community partners to P&T decisions. When asked if P&T committees should allow community partners to participate, only 16% of respondents either strongly agreed (4%) or agreed (12%). In contrast, 62% of respondents either strongly disagreed (33%) or disagreed (29%). Approximately 18% of the sample neither agreed nor disagreed. The respondents showed the highest level of disagreement to agreement (3.9, $p < 0.05$) on this item of all the eight items. Again a low percentage of agreement and a high percentage of disagreement were observed when questioned whether community input to the promotion process was seriously considered and valued, 14% strongly agreed (3%) or agreed (11%), whereas 48% either strongly disagreed (25%) or disagreed (23%) with 17% of the sample neither agreeing or disagreeing. The ratio estimate of the disagreement to agreement (3.6) was significantly higher than 1.0.

Finally, respondents were asked to evaluate if support for CEnR and its inclusion in the P&T process has increased since the award of the CTSA in their institution. Only 8% of respondents either strongly agreed (1%) or agreed (7%) with this perspective. In contrast, 19%

of respondents either strongly disagreed (8%) or disagreed (11%) that the CTSA had increased support for CEnR scholarship in general and as a part of the P&T process. Of particular note is that almost half of the sample (49%) indicated that they had no basis to respond.

There were a considerable number of free text entry comments offered by respondents. The vast majority painted a disturbing relative lack of support for CEnR by P&T committees. For example, one respondent when asked if CEnR was valued and recognized by P&T committees stated,

“It is indeed recognized and valued—just not that much. Put it another way, if one has no community service items on their document, they need not be concerned.”

Others noted,

“There is little evidence that community-engaged scholarship is recognized. Always seems like a good idea, but if the scholarship is not measured or put into a recognized publication, there does not seem to be much point.” And *“again, no one says that they dislike such scholarship, but it is clearly not rewarded to the same degree as more narrowly defined traditional research endeavors.”*

Perhaps the most telling comment regarding the willingness of young investigators to engage in CEnR was *“Junior faculty are often discouraged at the beginning of their time here to conduct this type of work. The assumption is that it takes too much time from products valued in P&T.”*

This viewed was reinforced by another respondent; *“My school prefers more basic research even though I do community-engaged scholarship with publications. I was told by our Dean of Research that my research does not count as highly.”*

Discussion

The growing awareness that scientific discoveries are delayed in reaching the public health practice stimulated the NIH to develop and mandate that CTSA promote translation of research into evidence-based policy and practice. An important goal of this mandate is to more actively engage communities in the research process. While this is an important goal, there is not an established culture of community-engaged or community based participatory research in either medical science or other areas of academic research. In medical and academic research, historically there has been a bias towards research methods that are not always suited to the complexity of research with community partners, notably the randomized control trial. As a result, many CTSA must work to support investigators to engage in CEnR by building infrastructure and creating opportunity. This creates an interesting question; if they build it, will they come? One essential element of such infrastructure development is supporting CEnR in the promotion and tenure process. If promotion decisions are based on reviews that favor more “traditional” research designs, CEnR may not be viewed as favorably, and thus jeopardize investigators ability to be promoted. This may cause CEnR to be adopted less by investigators.

The results of this survey of faculty at three major universities collaborating in the Indiana CTSI, an awarded CTSA institution, investigate their perceptions of the extent to which CEnR is valued and supported by their institution. Our data suggest that in spite of the presence of a the Indiana CTSI, which has only existed 4 years, and its mandate to conduct CEnR, many faculty do not perceive it to be valued or supported for promotion in their respective campuses. Indeed, the data shown here, and notably the comments offered by the respondents, suggest that CEnR is not well recognized by the P&T process, and in some cases is discouraged. A significant percentage of respondents did not agree that CEnR scholarship is

recognized and valued for all categories of appointments, as part of the review process or explicitly included in P&T procedures. In addition, the majority of the sample felt that their institution did not encourage publication in journals that regularly disseminate CEnR.

Collectively, these observations suggest that universities continue to view more traditional empirical research methodologies as the benchmark of quality science. In such an atmosphere, CEnR may not be seen as valued or desirable if the goal is promotion. In this regard, it is interesting to note that the largest segment of the respondents were full professors who can be argued to have been promoted in the traditional, less friendly environment to CEnR. Their perceptions regarding the lack of support by their P&T committees may in fact reflect their personal situation and possibly observed cases of others who did or did not make promotion. It may also reflect their understanding of what was necessary to achieve promotion.

The continued emphasis on non-CEnR in the P&T process is also reflected in the relative low acceptance of involving community partners, even though respondents also agreed that members of the P&T committees do not have a “broad understanding of the definition, nature, documentation, and assessment of CEnR scholarship.” This may reflect a belief that only trained scientists are capable of evaluating scientific activity, which is somewhat true when considering more traditional research methods such as the RCT and other often used methods of empirical research that require specific training to effectively implement. In this context, this rejection is consistent with a view that CEnR is not valued and supported by the P&T process. It is, however, ironic that with the mandate for greater community engagement in the research process, the voice of the community in evaluating CEnR would be rejected. It may also reflect the fact that two thirds of respondents were not engaged in CEnR and thus would not

appreciate the potential contribution of input by community partners in evaluating the quality and effectiveness of community engaged research.

There are limitations that must be considered in interpreting the results of this survey. Even though the samples might be representative of the campuses from which they were collected, they were small. There was, however, a similar distribution of gender and rank in the sample with the respective campuses from which are located. Still, it is impossible to know how non-respondents would have answered the questions. Also, full professors who dominated the sample may not have similar attitudes to respondents who had not yet achieved full promotion. In addition, there was a relatively small sample of younger faculty, which may be more concerned by P&T issues than older, more established faculty. In this regard, it is plausible that younger faculty that did not respond to the survey may be more engaged in CEnR. It is also plausible, that younger faculty who are in fact engaged in CEnR would have been more motivated to respond to the survey. If this latter interpretation is indeed the case, the observations reported here are perhaps more troubling. The open-ended comments, however, suggest that there is a general sense that CEnR is not a central part of the respective disciplines of the respondents.

In spite of these limitations, there is a clear trend in this data from three university campuses that the promise of CEnR-mediated translation has yet to be realized when considering the potential impact of P&T decisions on influencing the type of translational research conducted. Clearly, there is a need for greater CEnR to improve the translation of scientific discovery to the public health practice. It is equally clear that the CTSA's have a formidable challenge to stimulate greater adoption of CEnR. This includes stimulating greater

awareness of the role that CEnR plays in translation. As noted by one respondent, *“I would estimate that fewer than 10% of my colleagues have much of a sense of the value of this research. And again, publication in mainstream, highly ranked journals is the primary criterion for evaluating the quality of research, not whether it has any practical value to the community or society. This is especially ironic since I am a sociologist.”*

Addressing this challenge will require a shift in the culture of what is viewed and valued as quality research. Part of this cultural shift will require that P&T committees broaden their view of what constitutes high quality research and how it may best be evaluated.¹⁴ A positive step would be to more fully embrace the concepts of CEnR by incorporating community engagement principles and more direct input by community stakeholders into the P&T process.¹⁵ In addition, we also propose that universities consider the approaches described in the CCPH toolkit; in particular standards for evaluating CEnR for tenure.¹⁶

Table 1: Characteristics of the Study Participants by Institution

Characteristics	IUPUI (N=264)	IU Bloomington (N=224)	Purdue (N=180)	All †(N=675)	P-value
Gender, n (%)					0.12
Male	141 (53.4)	108 (48.2)	109 (60.6)	360 (53.3)	
Female	99 (37.5)	81 (36.2)	53 (29.4)	233 (34.5)	
No Answer	24 (9.1)	35 (15.6)	18 (10.0)	82 (12.2)	
*Race, n (%)					0.045
White	201 (76.1)	156 (69.6)	142 (78.9)	501 (74.2)	
African American	6 (2.3)	6 (2.7)	1 (0.6)	13 (1.9)	
Asian	9 (3.4)	8 (3.6)	5 (2.8)	22 (3.3)	
Other	24 (9.1)	15 (6.7)	5 (2.8)	44 (6.5)	
No Answer	27 (10.2)	41 (18.3)	28 (15.6)	101 (15.0)	
Age, n (%)					0.74
30-39	32 (12.1)	19 (8.5)	14 (7.8)	65 (9.6)	
40-49	58 (22.0)	50 (22.3)	40 (22.2)	148 (21.9)	
50-59	75 (28.4)	56 (25.0)	51 (28.3)	183 (27.1)	
60+	44 (16.7)	40 (17.9)	29 (16.1)	113 (16.7)	
No Answer	55 (20.8)	59 (26.3)	46 (25.6)	166 (24.6)	
Rank, n (%)					<0.001
Assistant Professor	66 (25.0)	45 (20.1)	22 (12.2)	133 (19.7)	
Associate Professor	89 (33.7)	64 (28.6)	43 (23.9)	197 (29.2)	
Full Professor	91 (34.5)	105 (46.9)	106 (58.9)	303 (44.9)	
Other	7 (2.6)	2 (0.9)	0 (0.0)	9 (1.3)	
No Answer	11 (4.2)	8 (3.6)	9 (5.0)	33 (4.9)	
Served P&T Committee, n (%)					<0.001
Yes	119 (45.1)	119 (53.1)	141 (78.3)	380 (56.3)	
No	141 (53.4)	99 (44.2)	35 (19.4)	276 (40.9)	
No Answer	4 (1.5)	6 (2.7)	4 (2.2)	19 (2.8)	
Currently Engaged in Community Research, n (%)					0.068
Yes	100 (37.9)	58 (25.9)	53 (29.4)	211 (31.3)	
No	150 (56.8)	150 (67.0)	115 (63.9)	416 (61.6)	
No Answer	14 (5.3)	16 (7.1)	12 (6.7)	48 (7.1)	

*Includes subjects in multiple categories and percents could add to higher than 100%

† 7 subjects did not answer their institutions.

Table 2: Responses to survey questions

Questions	Strongly Agree n (%)	Agree n (%)	Neither Agree nor Disagree n (%)	Disagree n (%)	Strongly Disagree n (%)	No basis to respond n (%)	Ratio: Disagree & strongly disagree to agree & strongly agree (95% CI)
CEnR scholarship is recognized and valued for all categories of appointments at my institution, regardless of tenure, clinical teaching and/or practice emphasis	57 (8.4)	185 (27.4)	113 (16.7)	144 (21.3)	96 (14.2)	80 (11.9)	0.99 (0.83, 1.18)
CEnR scholarship is recognized and rewarded during the review, tenure, or promotion process	44 (6.5)	193 (28.6)	116 (17.2)	139 (20.6)	96 (14.2)	87 (12.9)	0.99 (0.83, 1.19)
CEnR scholarship is explicitly included in the review, tenure, and promotion policies and procedures	30 (4.4)	109 (16.2)	115 (17.0)	207 (30.7)	134 (19.9)	80 (11.8)	2.45 (2.03, 3.02)
The review, promotion and tenure process encourages publication in the journals, books, and media (and other sources) which regularly disseminate CEnR.	58 (8.6)	133 (19.7)	147 (21.8)	163 (24.2)	101 (15.0)	73 (10.8)	1.38 (1.15, 1.67)
Members of review, P&T committees have a broad understanding of the definition, nature, documentation and assessment of CEnR scholarship	23 (3.4)	83 (12.3)	125 (18.5)	189 (28.0)	132 (19.6)	123 (18.2)	3.03 (2.43, 3.83)
The review process should consider being changed to allow outside members (community partners) on P&T committees.	27 (4.0)	82 (12.2)	121 (17.9)	196 (29.0)	225 (33.3)	24 (3.6)	3.86 (3.12, 4.82)
In practice, community partner contributions to the review, tenure, or promotion processes are seriously considered and valued.	18 (2.7)	73 (10.8)	114 (16.9)	158 (23.4)	166 (24.6)	146 (21.6)	3.56 (2.87, 4.58)
Support for CEnR scholarship and its inclusion in the review, tenure and promotion process has increased since my institution was awarded a CTSA	9 (1.3)	48 (7.1)	149 (22.1)	77 (11.4)	54 (8.0)	333 (49.3)	2.30 (1.71, 3.22)

References

1. Selker HP, Strom BL, Ford DE, Meltzer DO, Pauker SG, Pincus HA, Rich EC, Tompkins C, Whitlock EP. White paper on CTSA consortium role in facilitating comparative effectiveness research: September 23, 2009 CTSA consortium strategic goal committee on comparative effectiveness research. *Clin Transl Sci*. 2010 Feb;3(1):29-37.
2. Horowitz CR, Robinson M, Seifer S. Community-based participatory research from the margin to the mainstream: are researchers prepared? *Circulation*. 2009 May 19;119(19):2633-42.
3. Link BG, Phelan J. Social conditions as fundamental causes of disease. *J Health Soc Behav*. 1995;Spec No:80-94.
4. DiGirolamo A, Geller AC, Tendulkar SA, Patil P, Hacker K. Community-based participatory research skills and training needs in a sample of academic researchers from a clinical and translational science center in the northeast. *Clin Transl Sci*. 2012 Jun;5(3):301-5.
5. CTSA Community Engagement Key Function Committee Task Force on the Principles of Community Engagement. *Principles of Community Engagement*. 2nd ed. Washington, DC: US Department of Health and Human Services; 2011. National Institutes of Health publication 11-7782. <http://www.atsdr.cdc.gov/communityengagement/>. Accessed September 28, 2012.
6. Green LW. Making research relevant: if it is an evidence-based practice, where's the practice-based evidence? *Fam Pract*. 2008 Dec;25 Suppl 1:i20-4.

7. Handley MA, Schillinger D, Shiboski S. Quasi-experimental designs in practice-based research settings: design and implementation considerations. *J Am Board Fam Med*. 2011 Sep-Oct;24(5):589-96.
8. Ahmed SM, Beck B, Maurana CA, Newton G. Overcoming barriers to effective community-based participatory research in US medical schools. *Educ Health (Abingdon)*. 2004 Jul;17(2):141-51.
9. Nyden P. Academic incentives for faculty participation in community-based participatory research. *J Gen Intern Med*. 2003 Jul;18(7):576-85.
10. Calleson DC, Jordan C, Seifer SD. Community-engaged scholarship: is faculty work in communities a true academic enterprise? *Acad Med*. 2005 Apr;80(4):317-21.
11. Teufel-Shone NI. Community-based participatory research and the academic system of rewards. *Virtual Mentor*. 2011 Feb;13(2):118-123.
12. Calleson DC, Seifer SD, Maurana C. Forces affecting community involvement of AHCs: perspectives of institutional and faculty leaders. *Acad Med*. 2002 Jan;77(1):72-81.
13. CTSA Community Engagement Education, Scholarship and Engagement Workgroup. Community engagement scholarship tenure, promotion, and review decisions survey. [Unpublished survey.] The Workgroup. 26 May 2011.
14. Bonell CP, Hargreaves J, Cousens S, Ross D, Hayes R, Petticrew M, Kirkwood BR. Alternatives to randomisation in the evaluation of public health interventions: design challenges and solutions. *J Epidemiol Community Health*. 2011 Jul;65(7):582-7.

15. Gelmon SB, Seifer SD, Kauper-Brown J, Mikkelsen M. Building capacity for community engagement: institutional self-assessment. Seattle, WA: Community-Campus Partnerships for Health, 2005. <http://ctsacorus.org/resources/205>. Accessed September 28, 2012.
16. Calleson D, Kauper-Brown J, Seifer SD. Community-engaged scholarship toolkit. Seattle, WA: Community-Campus Partnerships for Health, 2005. <http://ctsacorus.org/resources/190>. Accessed September 28, 2012.