Abstract
There is consistent interest from medical trainees in high-income countries in academic global health education (GHE) programs. Academic scholarship in global health has traditionally been linked to longer-term programs. However, most programs for medical trainees offer short-term experiences in global health (STEGH). These experiences are typically brief and clinical, and present logistical and ethical challenges for producing scholarship. Given challenges inherent in global health medical education, educators should cultivate ethically sound scholarship prioritizing power, privilege, and decision-making within local communities. Utilizing the framework of community-engaged scholarship, GHE ethics guidelines and examples we present suggestions to guide scholarship in GHE.

Keywords Global health education · Scholarly project · Community-engaged scholarship · Global health experience

Background
Interest in global health education (GHE) has steadily increased over recent years [1]. Almost all medical school programs in the USA offer GHE curricula [2], and in 2018 almost 30% of medical school graduates reported participating in a GHE experience [3]. However, as interest in GHE has increased, so too have the calls for more inclusive, long-term, and community-centered approach that addresses the structural inequities and colonial implications, especially during the process of creating curricula and conducting research [4–6].

Traditionally, academic scholarship in the context of GHE has been linked to long-term post-doctoral fellowships [6, 7]. However, most current GHE experiences undertaken by medical trainees and graduate medical trainees are short-term [8], which presents a valuable opportunity for GHE educators to strengthen ties and create long-term projects to develop partnerships in low- and middle-income countries via successive experiences at the same site.

Activity
We used the tenets of community-engaged scholarship, published recommendations for scholarly products and projects [9], and decolonization frameworks to create recommendations to facilitate trainee identification of acceptable, ethical, and locally focused scholarly projects in the field of global health. These guidelines have been implemented in a GHE graduate medical trainee program, the McGaw Global Health Clinical Scholars Program.

The Role of Community-Engaged Scholarship
Community-engaged scholarship combines systematic inquiry with aspects of teaching and research, and includes project development, quality improvement, and advocacy [10, 11]. At its core, however, is the idea that the community in which scholarly activities are occurring takes on an active role in the scholarship as well as direct benefit from the outcomes of these activities. Given colonialist legacies that persist in GHE, community-engaged scholarship is an ideal
framework for GHE as it emphasizes mutually beneficial community involvement and is not restricted to traditional published research output.

**Ethical Engagement**

The focus on community-engaged scholarship highlights the importance of special ethical considerations when undergoing GHE-related projects. Traditional human subjects research, particularly when conducted internationally and in low- and middle-income areas, requires special attention to ethics, and is often governed by local and institutional review boards. However, GHE-focused scholarship, which less often includes human subjects, raises a different set of ethical issues. Who is considered the “expert” on a given topic — the partner from a high-income country, or the partner who lives and works in the setting where the scholarship is occurring? How will publication and presentation credits be shared amongst the various scholars, including trainees? Have local contexts and resources been adequately acknowledged in the design of the project or activity? These issues can be addressed with direct reflection on the ethical principles of justice, non-maleficence, and beneficence. A decolonization framework must also be applied in scholarship, constantly calling into question the locus of power in any partnership [12]. Finally, we posit that all projects in global health should uphold the principles of the Brocher Declaration: mutual partnership and bidirectional input; ensuring activities are defined by an empowered host community; emphasizing sustainable programs and capacity building; compliance with applicable laws and standards; maintaining respect and cultural sensitivity; and ensuring accountability [12].

**Results and Discussion**

The following guidelines were developed to assist trainees in creating scholarly projects in the field of global health. All trainees were provided with a document outlining these guidelines (Fig. 1), as well as a list of general domains and suggestions for scholarly projects (Table 1). Several examples of scholarly projects that were created using these recommendations are provided (Table 2).

**Challenges and Solutions**

Many challenges can arise in creating scholarship in GHE when emphasizing partnership. It can be uncomfortable to acknowledge networks of expertise, power, and privilege while undertaking community-based and partnership-focused scholarship. Leveraging longitudinal partnerships to host short-term GHE and embedding trainees in larger projects can facilitate more iterative and collaborative programming.

Additionally, logistical challenges of time zone differences, engaging content of mutual interest to both parties, and technological adaptions will arise. Clear goals and expectation setting from both parties prior to implementation are key to ensuring a program is both sustainable and useful. Additionally, as the COVID-19 pandemic has demonstrated, there is sustained interest in virtual engagement. With GHE programs, virtual platforms allow for ongoing, longitudinal, and intermittent engagement at mutually beneficial times that is rooted in fostering partnership without reliance on travel. It is also imperative that success in scholarship not be limited to traditional research and manuscript publication, as GHE scholarship often focuses in supporting partnership first and foremost.

**Fig. 1 Scholarly project guidelines document**

**McGaw Global Health Clinical Scholars**

**Scholarly Project Guidelines**

**Definition of Scholarly Project:**

A global health scholarly project is defined by one of multiple forms of systematic inquiry [10] through areas such as teaching, engagement, integration, quality improvement, and research that relates to the general field of Global Health.

A scholarly project has the following components [9,10]:

- **Clear Goals** – achievable and measurable goals with important questions to be answered
- **Adequate Preparation** – the development of a level of expertise in a given field, drawing on existing work in the area
- **Appropriate Methods** – to reach a predetermined goal
- **Significant Results** – creates an important contribution to the field, a measurable quantitative or adequate qualitative result
- **Effective Presentation** – an accessible product, presented to your peers
- **Reflective Critique** – the learner can reflect on the role of their product within the field of global health
Conclusions

By providing a set of scholarly project guidelines that emphasize the importance of community-based scholarship, as well as by encouraging trainees to think about the ethical issues involved with GHE and global health research, we have been able to support trainees as they completed appropriate and ethically sound global health scholarship. We hope that these guidelines may help others as they design thoughtful scholarly outputs for GHE programs. The examples of community-engaged scholarship outlined here can (and should) apply to scholarship beyond GHE programs. We recognize that there are many new ways forward in redefining global health education through the lens of decolonizing global health and believe that community-engaged scholarship is a crucial component [13–15].

Table 1 Domains of scholarly projects

| Quality Improvement | • Contribute to the development and implementation of quality improvement projects within a global health partnership  
|                     | • Create an evaluation plan or tool |
| Curricular Development/Educational Programming | • Contribute to the design of global health education programs/curricula (written, spoken, etc.)  
|                     | • Develop educational modules:  
|                     |  - targeted pre-departure elements for global health trainees  
|                     |  - capacity building with partners — clinical, education, and research  
|                     |  - health promotion/community health worker use |
| Project Development/Grant Writing | • Provide support, guidance, and/or assistance in fundraising appeal and/or grant writing for partner organizations and institutions  
|                     | • Develop a funding database or funding resource guide  
|                     | • Develop a communication/outreach plan |
| Basic Research/Data Analysis | • Collect, analyze, interpret, and summarize data from ongoing projects  
|                     | • Design and implement a focused project  
|                     | • Develop a focus group guide for a project  
|                     | • Develop data visualization or infographics  
|                     | • Conduct cost-effectiveness, cost–benefit, and cost utility analyses  
|                     | • Perform and write up a literature review |
| Advocacy | • Launch social media or advocacy campaign  
|                     | • Write an Op Ed about a current topic in global health  
|                     | • Write a clinical reflection essay  
|                     | • Develop a fact sheet or briefing guide for advocates to use |

Table 2 Examples of scholarly projects

| A curriculum for pediatric cardiology in Mwanza, Tanzania | In response to a partner-identified interest in expanding opportunities for local pediatric residents to learn more about the management of congenital heart disease, a US-based pediatric resident developed a curriculum following the Kern model for medical education. They hosted meetings and performed stakeholder interviews to design curricular content and teaching methods and paired these opportunities with US-based virtual resources. The curricular design and implementation served as their scholarly product |
| A quality improvement reference for global health | A trainee performed literature review of best practices for quality improvement methodologies for collaborations with partners in low- and middle-income countries as a guide for other trainees undertaking similar efforts |
| Reporting data on pre-departure global health training | A trainee cleaned, analyzed, and developed graphic representations of previously collected data for pre-departure training skill curricula to identify opportunities for improvement |
| Data analysis for clinical use | A trainee was able to analyze data collected by a local research team located in Tanzania to determine whether antiviral treatment improved outcome measures amongst patients with HIV, hepatitis B, or HIV/hepatitis B co-infection |
| Patient education | A trainee interviewed women who had recently undergone fistula repair surgery in Rwanda, to obtain their feedback on pre-surgical educational materials that were currently in use. Based on input from the interviewees, the research team was able to refine their educational materials to make them more relevant and culturally appropriate, with plans to use the materials for preoperative counseling |
| Bidirectional Educational Case Conference Programming | In response to an LMIC partner-identified interest, a US-based trainee created an ongoing program of virtual case conferences with shared presentations from partners in the USA and in an LMIC at a mutually convenient time |
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 References

1. Khan OA, Guerrant R, Sanders J, et al. Global health education in U.S. medical schools. BMC Medical Education. 2013;13(1). https://doi.org/10.1186/1472-6920-13-3.

2. Content documentation in required courses and elective courses. Association of American Medical Colleges. Published 2019. Accessed 8 Dec 2021. https://www.aamc.org/data-reports/curriculum-reports/interactive-data/content-documentation-required-courses-and-elective-courses.

3. Medical School Graduation Questionnaire: 2018 All Schools Summary Report. Association of American Medical Colleges. Published July 2018. Accessed 8 Dec 2021. https://www.aamc.org/system/files/reports/1/2018gqallschoolssummaryreport.pdf.

4. Tsang VWL, Loh L. Using a health equity lens to evaluate short-term experiences in global health (STEGH). Ann Glob Health. 2020;86(1):1–5. https://doi.org/10.5334/aogh.2926.

5. Shaiti M, Streule MJ, Alhaffar M, et al. Whose voices should shape global health education? Curriculum co-design and co-delivery by people with direct expertise and lived experience. BMJ Global Health. 2021:6(9). https://doi.org/10.1136/bmjgh-2021-006262.

6. Buitendijk S, Ward H, Shimshon G, Sam AH, Sharma D, Harris M. COVID-19: an opportunity to rethink global cooperation in higher education and research. BMJ Global Health. 2020;5(7). https://doi.org/10.1136/bmjgh-2020-002790.

7. Heimburger DC, Carothers CL, Blevins M, Warner TL, Vermund SH. Impact of global health research training on scholarly productivity: the Fogarty International Clinical Research Scholars and Fellows Program. Am J Trop Med Hyg. 2015;93(6):1201–7. https://doi.org/10.4269/ajtmh.15-0432.

8. Doobay-Persaud A, Evert J, DeCamp M, et al. Extent, nature and consequences of performing outside scope of training in global health. Glob Health. 2019;15(1):1–11. https://doi.org/10.1186/s12992-019-0506-6.

9. Simpson D, Meurer L, Braza D. Meeting the scholarly project requirement—application of scholarship criteria beyond research. J Grad Med Educ. 2012;4(1):111–2. https://doi.org/10.4300/jgme-d-11-00310.1.

10. Simpson D, Yarris LM, Carek PJ. Defining the scholarly and scholarship common program requirements. J Grad Med Educ. 2013;5(4):539–40. https://doi.org/10.4300/jgme-d-13-00326.

11. Meurer LN, Diehr S. Community-engaged scholarship: meeting scholarly project requirements while advancing community health. J Grad Med Educ. 2012;4(3):385–6. https://doi.org/10.4300/jgme-d-12-00164.1.

12. Prasad S, Aldrink M, Compton B, et al. Global health partnerships and the Brocher Declaration: principles for ethical short-term engagements in global health. Annals of Global Health. 2022;88(1). https://doi.org/10.5334/aogh.3577.

13. Hudspeth JC, Rabin TL, Dreifuss BA, et al. Reconfiguring a one-way street: a position paper on why and how to improve equity in global physician training. Acad Med. 2019;94(4):482–9. https://doi.org/10.1097/ACM.0000000000002511.

14. Rabin TL, Mayanja-Kizza H, Barry M. Global health education in the time of COVID-19: an opportunity to restructure relationships and address supremacy. Academic Medicine. Published online 2021:795–797. https://doi.org/10.1097/ACM.0000000000003911.

15. Galvin SM, Neubauer LCEM, Leonard WRP, Doobay-Persaud AM. Reassessing global health education in the age of COVID-19. Acad Med. 2021;96(5):e20.

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