

Increasing Women in Leadership in Global Health

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Abstract

Globally, women experience a disproportionate burden of disease and death due to inequities in access to basic health care, nutrition, and education. In the face of this disparity, it is striking that leadership in the field of global health is highly skewed towards men and that global health organizations neglect the issue of gender equality in their own leadership. Randomized trials demonstrate that women in leadership positions in governmental organizations implement different policies than men and that these policies are more supportive of women and children.

Other studies show that proactive interventions to increase the proportion of women in leadership positions within businesses or government can be successful. Therefore, the authors assert that increasing female leadership in global health is both feasible and a fundamental step towards addressing the problem of women's health. In this Perspective, the authors contrast the high proportion of young female trainees who are interested in academic global health early in their careers with the low numbers of women successfully rising to global health leadership roles. The

authors subsequently explore reasons for female attrition from the field of global health and offer practical strategies for closing the gender gap in global health leadership. The authors propose solutions aimed to promote female leaders from both resource-rich and resource-poor countries, including leadership training grants, mentorship from female leaders in global professions, strengthening health education in resource-poor countries, research-enabling grants, and altering institutional policies to support women choosing a global health career path.

Worldwide, nearly one million young women die each year because of maternal complications, breast cancer, or cervical cancer—deaths mostly preventable in resource-rich settings.¹ Women in Sub-Saharan Africa have a lifetime maternal mortality risk of 1 in 31—100-fold higher than women in wealthier regions.² Maternal deaths particularly devastate families: children whose mothers die are three times more likely to die than other children.³ Neglect of women's health is causally related to discrimination in access to education, employment, and economic opportunities.⁴ Because of high rates of preventable mortality among women in resource-poor countries, women's health is a central focus of global health. Of the eight Millennium Development Goals established by the United Nations to eradicate extreme poverty by 2015, two specifically target women's health.⁵

We define global health as a multi-disciplinary field of service, research, and training that seeks to improve the health of both individuals and populations and to achieve health equity for all people worldwide, especially for the resource-poor.⁶ Given the importance of women's health to global health, it is surprising that female leadership in the field is sparse. For instance, women constitute only 26% (14/54) of African ministers of health and 24% (12/50) of directors of global health centers at the top 50 U.S. medical schools. We espouse the principle stated recently by Anne-Marie Slaughter in *The Atlantic*: “Only when women wield power in sufficient numbers will we create a society that genuinely works for all women.”⁷ Although a gender gap in leadership exists in many fields, including government, business, law, and education, the gap in global health is particularly troubling because women's health and reducing unjust health inequalities are central to the field. Closing the gender gap in global health leadership will not in itself solve all women's health problems. But it is an overdue first step.

The potential benefits of female leadership have been cogently demonstrated in development work. A recent study in India examined neonatal mortality by district, comparing only districts in

which an elected official of one gender defeated a politician of the opposite gender by a margin of <3.5%, based on the assumption that the gender of the elected official in these very close elections is “quasi-random.” Investigators showed that, for every one-standard-deviation increase in the number of female-held seats in the district council, neonatal mortality dropped by 1.5%.⁸ Women leaders were also more likely to support health facilities, antenatal care, and immunizations.⁸ Another study in India exploited the randomization created by a 1993 constitutional amendment that required rural villages, based randomly on a village's long-standing administrative number, to have or not to have their village councils headed by a female leader. After controlling for multiple confounders, investigators demonstrated that women tended to invest in public works more closely linked to women's concerns, such as clean drinking water, while men invested in works more aligned with men's concerns, such as irrigation systems for farming.⁹ Ten years after the implementation of these random leadership assignments, adolescent girls in the villages with female leaders received significantly more education, had higher job aspirations, and spent less time on domestic chores than girls

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in the villages without female leaders.¹⁰ A similar study in rural Afghanistan showed that women living in villages that had been randomly assigned to a program requiring 50% female council representation, compared with women in villages without the requirement, were significantly more likely to generate their own income and to rate their village leaders as acting in the best interest of the entire village.¹¹ These field analyses and others support the principle that leaders' genders influence both their decisions and the welfare of women in their jurisdictions.¹²⁻¹⁴

On the basis of this tenet, we believe that striving for gender parity in global health leadership will affect global health policy and practice. In this article, we investigate reasons for the female leadership shortage in global health and propose solutions. We focus on academic global health as an example, recognizing that global health is a broad field additionally encompassing disciplines such as human rights, development, and politics. We draw on both the literature and our experience in Africa and the United States.

The training pathway for academic global health typically begins with an advanced graduate degree (MD, PhD, MPH, etc.) followed by postdoctoral field work and, ultimately, a career in academia, government, or multilateral, or nongovernmental organizations. Global health careers for individuals from resource-rich countries usually require a significant time commitment to international field work. Individuals from resource-poor countries frequently must travel abroad long-term to obtain graduate education and advanced training. Additionally, the field of global health necessitates a broad skill set including scientific capability, facility with foreign language, cultural sensitivity, flexibility, diplomacy, leadership, team building, and physical stamina to work in remote, resource-poor areas.

Women in Global Health at Various Career Stages

At Cornell University, where we work, 84% of undergraduate and 70% of graduate students interested in global health are women. However, the percentage of women progressively decreases at each step in the global health career ladder, such that fewer than 25%

of leadership roles in the field are held by women (Table 1). In many resource-poor countries, women in global health are scarcer at all stages of their careers. At the Tanzanian medical school where we serve as faculty, women constituted only 36% of matriculating medical students and 17 of 58 physicians (29%) pursuing specialization from 2010 through 2012. Only one of Tanzania's four regional referral hospitals and one of its five major medical schools have female directors. We share this perspective of the women in global health at our two institutions in the United States and Tanzania with the concern that this represents a larger trend and with the hope that this demonstrates that there are many young women committed to filling the gender gap in global health leadership if career obstacles can be overcome.

We believe that women leave the global health career pipeline partly because they encounter gender-based obstacles as their careers advance. We recognize that some generational differences may exist. More young women in 2013 are interested in global health than in 1973,^{15,16} and percentages of female leaders may increase as this generation ages. But clearly we have not reached parity in leadership despite the overwhelming interest of young women and the centrality of women's health to the field. We postulate that, despite increased numbers of interested young women, we will not reach parity without proactive efforts to remove obstacles that uniquely hinder the ability of women to pursue careers in global health.

Strategies have been successfully implemented to expand female leadership

in business and politics. One company, named by McKinsey and Company as one of the top 12 gender-diverse companies of 2012, offers intense training to promising midlevel career women, giving them protected time away from work for executive leadership conferences; most of these women are ultimately promoted to senior management positions.¹⁷ After the 1994 Fourth World Conference on Women in Beijing, 189 governments signed the Beijing Platform for Action, agreeing to a target that at least 30% of their national decision-making positions should be held by women.¹⁸ The worldwide percentage of females in national assemblies has nearly doubled since then, with highest female leadership rates in countries that have added a female quota requirement to their constitutions.^{19,20} These examples demonstrate that the enactment of programs and policies designed to increase female leadership does, in fact, achieve this goal.

Below, we describe gender-based obstacles and suggest possible solutions, applicable both in resource-wealthy and resource-poor settings, to overcome these impediments. We group issues into three categories: (1) challenges climbing institutional career ladders, (2) tensions between career and family responsibilities, and (3) health and safety issues. Some of these issues affect women in other disciplines of academic medicine and also affect men, but these issues are more acute for women in global health because of international travel, prolonged periods overseas, health and safety concerns in developing countries, and the lack of payment for providing service to poor patients who cannot pay for clinical care.

Table 1
Career Stage and Percentages of Women in Global Health in U.S. Undergraduate and Medical Schools, 2010-2012

Career stage	No. (%) of women
Cornell University undergraduates obtaining global health minor	124/148 (84)
Weill Cornell Medical College students and residents who rotate to international programs ^a	65/82 (79)
Weill Cornell Medical College students pursuing global health concentration	31/44 (70)
Faculty members at centers for global health at top 50 U.S. medical schools ^b	384/988 (39)
Directors of centers for global health at top 50 U.S. medical schools ^b	12/50 (24)

^aInternational programs in Brazil, Haiti, and Tanzania.

^bThe top 50 medical schools for research in 2012 were selected from the U.S. News & World Report (<http://grad-schools.usnews.rankingsandreviews.com/best-graduate-schools/top-medical-schools/research-rankings>). An Internet search was conducted to determine the percentage of female deans, directors, and faculty members at centers for global health at each of the top 50 medical schools.

Obstacle 1: Challenges Climbing Institutional Career Ladders

The problem

Professional women in global health commonly confront gender bias and discrimination at work.^{21,22} In resource-poor settings, discrimination is frequently overt. Female colleagues in Africa report enduring sexual harassment, being discouraged from becoming pregnant during training, and encountering difficulty being promoted if they are perceived as outspoken.^{23,24} In resource-rich countries, bias is often covert. A recent randomized, double-blind study demonstrated that science faculty members at American universities viewed men as more competent and deserving of a higher starting salary than equivalently qualified women.²⁵ American female physicians are promoted less often than men, even after adjusting for number of hours worked, productivity, and specialty choice.²⁶

Financial constraints can further impair the ability of both men and women to pursue careers in global health. Funding for global health work is relatively scarce, and competition for financial support can be fierce even at the medical student level.²⁷ After achieving faculty appointments, those working internationally cannot easily make up a portion of their salary through clinical work because they are working with poor populations who cannot pay clinical fees. Therefore, these individuals may require more departmental financial support. Those who attempt to balance clinical or teaching work in their home country with time overseas may face the complication of repeatedly asking colleagues to cover for them. In our experience, this issue is exacerbated for women in their childbearing years, whose colleagues may also be required to provide coverage during their maternity leaves.

Potential solutions

Leadership grants for women from resource-poor countries. We urge donors to fund career development grants or scholarships to cultivate female leadership in health care institutions within resource-poor countries. These grants should provide time for women to focus on training, including (1) didactic courses to acquire technical skills; (2) mentored service, research, or training projects; and (3) leadership and management training. Grants should ensure sufficient

protected time from clinical/teaching responsibilities, with flexible schedules to accommodate maternity leave. Grants should be contingent on institutional commitment to promote dedicated and productive women to positions of leadership.

Mentorship. Mentors and role models strongly influence career advancement. We suggest that global health organizations and centers create mentorship and career guidance teams specifically for women. Because female mentors in global health are limited, we recommend involving female mentors from other global or international professions. Mentors can suggest strategies for balancing career and family, advise on prioritizing work that will enhance mentees' leadership and career, and help mentees discern when and how to say "no" when supervisors ask them to assume responsibilities that are not in their career interest.²⁸ Global health organizations in both resource-wealthy and resource-poor countries should formalize and financially support mentorship for female trainees and young professionals.

International conferences should organize small sessions at which women can discuss career development. Opportunities for women to share their experiences and challenges may enable the formation of relationships and bolster women's resolve to remain committed to global health. In addition, academic institutions should ensure that women in global health have funding to attend international meetings. This may facilitate their ability to meet other women in the field and permit networking with women leaders who can serve as role models, provide informal mentoring, and share strategies they have used to negotiate obstacles as they have risen to leadership in the field.

Obstacle 2: Tensions Between Career and Family Responsibilities

The problem

The critical career-building years between receiving a graduate degree and obtaining a leadership role are also women's reproductive years, "when the fast track and the reproductive track are on a collision course."²⁹ This can be challenging for both male and female young faculty members, but the "baby penalty" is higher for women, many

of whom leave behind their careers at this time.^{30,31} Female scientists at top U.S. universities have fewer children than their male counterparts and admit to having fewer children than they desire.³² For women interested in global health, whether from resource-poor or resource-rich settings, tensions between career building and family are further exacerbated by the need to spend considerable time abroad. Women from dual-career households need partners who also work internationally, partners with flexible careers who can continue their own work while abroad, or willingness as a couple to spend significant time apart while child rearing. Similarly, single women who desire children frequently have difficulty meeting partners abroad and, worried about fleeting childbearing years, seek appointments in their home countries. Although some of these issues can also be problematic for men, they are often more acute for women whose fertility declines earlier^{33,34} and who, even when their academic degrees are comparable to their partners, typically bear the larger burden of household work.^{35,36}

Potential solutions

Strengthen health education in resource-poor countries. If educational opportunities exist in-country, women from resource-poor countries will not have to travel to obtain advanced training. Donors should invest in health education capacity building in resource-poor countries, making support contingent on respect for gender equity. Online education is revolutionizing international education by providing world-class course work and training to anyone who can access the Internet. For women from resource-poor countries, distance learning permits access to advanced instruction and mentoring without prolonged travel. Such human capacity building in resource-poor countries is widely recognized as an effective and sustainable investment and is a major strategy of international organizations including the United Nations Development Program; the Fogarty International Center; the Global Fund to Fight AIDS, Tuberculosis, and Malaria; and the President's Emergency Plan for AIDS Relief.³⁷⁻⁴³

Global health research-enabling grants. Glimcher pioneered small "research-enabling grants" that provide women

researchers with funding during “perhaps the most vulnerable time in a young female scientist’s career.”⁴⁴ Global health-enabling grants could support expenses including bringing dependents along for periods of extended field work or graduate study, employing an assistant to continue research during maternity leave, providing child care or children’s educational expenses that would not be incurred in the home country, or covering travel for family events or emergencies that would otherwise not be possible. Global health professionals working in resource-poor countries cannot supplement their income through clinical work and typically earn less than their peers working in wealthy countries. Small grants may make the difference between women remaining in or abandoning global health.

Time extensions to accommodate maternity leave and child rearing.

Training periods, career clocks, and grant periods need to be more flexible for women in global health. Many academic institutions now routinely offer one-year tenure extensions to faculty with new children, as well as either shared tenure-track positions for two part-time faculty members or a part-time tenure track that allows women to segue back to full-time work after their children are older.⁴⁵ Women working internationally may need longer extensions, permitting them to return home in late pregnancy, when risks of complications and preterm delivery are highest, and to remain home during the early neonatal period. Tenure-clock extensions need to be funded, and time and no-cost extensions to grants should be easily obtainable.

Obstacle 3: Health and Safety Issues

The problem

Gender-related health problems make work in resource-poor countries a health risk for women. Sexual violence against women working internationally is an all-too-common reality. Between 2000 and 2009, female Peace Corps volunteers reported more than 1,000 sexual assaults, of which 221 were rape, for a rape rate of 5.3 per 1,000 female volunteer-years.⁴⁶ This rate is higher than in any single nation reporting to the United Nations.⁴⁷

Pregnant women working in resource-poor settings are also at increased risk of

maternal and fetal complications from tropical infections and poor prenatal and obstetrical care. For example, the United States Centers for Disease Control and Prevention recommends that pregnant women avoid travel to areas with malaria transmission, if possible.⁴⁸ This is not possible for health care workers living and working in resource-poor settings. Female health care workers in these settings suffer from many of the same health problems as the populations they serve.

Potential solutions

Women working in most resource-poor settings will be more vulnerable to health and safety risks than women working in wealthier settings. Although many of these risks cannot be controlled, they can be strategically managed and mitigated. We suggest that institutions provide women in global health with supplemental health insurance that includes coverage for emergency evacuation in the event of a health or civic emergency and preventive travel medications and vaccinations. Global health research-enabling grants for women should be flexible enough to support expenses such as travel vaccinations and prophylactic medications for their family members, timely procurement and administration of age-appropriate vaccinations for their children, or traveling to obtain obstetrical care not available in resource-poor settings.

Conclusions

We recognize that women committed to global health and service in resource-poor countries may assume some personal risk and sacrifice, earn less than their peers, and face an arduous training and career pathway. This is all the more reason to support women making this commitment. Randomized trials demonstrate that women in leadership positions in governmental organizations implement different policies than men and that these policies are more supportive of women and children. Other studies show that proactive interventions to increase the proportion of women in leadership positions within businesses or government can be successful. Therefore, increasing female leadership in global health is feasible and a critical step towards addressing the problem of women’s health globally. The advancement of women in global health careers will be bolstered by strategic investments to provide leadership training grants, mentorship from female

leaders in global professions, strengthening for health education in resource-poor countries, and research-enabling grants. Further institutional changes in academic promotion, maternity leave, and provision of mentorship can also have meaningful impact. We believe that making a small investment to retain talented, highly motivated women in global health will prove to be a low-cost intervention that will yield a new generation of female leaders who will change global health practice and improve the health of women worldwide.

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References

- 1 Lozano R, Naghavi M, Foreman K, et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: A systematic analysis for the Global Burden of Disease Study 2010. *Lancet*. 2012;380:2095–2128.
- 2 Hamel G, Heene A, eds. *Trends in Maternal Mortality: 1990 to 2008*. Geneva, Switzerland: World Health Organization; 2008.
- 3 Ronsmans C, Chowdhury ME, Dasgupta SK, Ahmed A, Koblinsky M. Effect of parent’s death on child survival in rural Bangladesh: A cohort study. *Lancet*. 2010;375:2024–2031.
- 4 Grépin KA, Klugman J. Maternal health: A missed opportunity for development. *Lancet*. 2013;381:1691–1693.
- 5 United Nations. We can end poverty: Millennium development goals and beyond 2015. <http://www.un.org/millenniumgoals/bkgd.shtml>. Accessed April 14, 2014.
- 6 Kopljan JP, Bond TC, Merson MH, et al; Consortium of Universities for Global

- Health Executive Board. Towards a common definition of global health. *Lancet*. 2009;373:1993–1995.
- 7 Slaughter A. Why women still can't have it all. *Atlantic*. July/August 2012. <http://www.theatlantic.com/magazine/archive/2012/07/why-women-still-cant-have-it-all/309020/>. Accessed April 14, 2014.
 - 8 Bhalotra S, Clots-Figuera I. Health and the political agency of women. 2011. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1977802. Accessed April 14, 2014.
 - 9 Chattopadhyay R, Duflo E. Women as policy makers: Evidence from a randomized policy experiment in India. *Econometrica*. 2004;72:1409–1443.
 - 10 Beaman L, Duflo E, Pande R, Topalova P. Female leadership raises aspirations and educational attainment for girls: A policy experiment in India. *Science*. 2012;335:582–586.
 - 11 Beath A, Christia F, Enikolopov R. Empowering Women: Evidence from a Field Experiment in Afghanistan. Washington, DC: World Bank; 2012.
 - 12 Beaman L, Duflo E, Pande R, Topalova P. Political reservation and substantive representation: Evidence from Indian village councils. In: Bery S, Bosworth B, Panagariya A, eds. *Indian Policy Journal 2010/2011*. Vol 7. New Delhi, India: Sage Publications; 2011.
 - 13 Munshai K, Rosenzweig M. Networks, commitment, and competence: Caste in Indian local politics. 2010. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.187.2846&rep=rep1&type=pdf>. Accessed April 14, 2014.
 - 14 Powley E. Rwanda: The impact of women legislators on policy outcomes affecting children and their families. UNICEF. 2006. http://www.unicef.org/policyanalysis/files/Rwanda_the_impact_of_women_legislators.pdf. Accessed April 14, 2014.
 - 15 Drain PK, Primack A, Hunt DD, Fawzi WW, Holmes KK, Gardner P. Global health in medical education: A call for more training and opportunities. *Acad Med*. 2007;82:226–230.
 - 16 Greysen SR, Richards AK, Coupet S, Desai MM, Padela AI. Global health experiences of U.S. physicians: A mixed methods survey of clinician–researchers and health policy leaders. *Global Health*. 2013;9:19.
 - 17 Barsh J, Yee L. Unlocking the full potential of women at work. McKinsey Co. 2012. http://www.mckinsey.com/client_service/organization/latest_thinking/women_at_work. Accessed April 14, 2014.
 - 18 United Nations Entity for Gender Equality and Empowerment of Women. Beijing Declaration and Platform for Action. Fourth World Conference on Women. 1995. <http://www.un.org/womenwatch/daw/beijing/platform/>. Accessed April 14, 2014.
 - 19 Inter-Parliamentary Union. Women in Parliament in 2012. 2012. <http://www.ipu.org/english/perdcls.htm#wmn-year>. Accessed April 14, 2014.
 - 20 UNIFEM. Progress of the World's Women 2008–2009. 2009. <http://www.unifem.org/progress/2008>. Accessed April 14, 2014.
 - 21 Cell Associates. National survey conducted by AAAS and Science confirms continuing obstacles to women in science. AAAS. 2010. <http://www.aaas.org/news/national-survey-conducted-aaas-and-science-confirms-continuing-obstacles-women-science>. Accessed April 14, 2014.
 - 22 Shen H. Inequality quantified: Mind the gender gap. *Nature*. 2013;495:22–24.
 - 23 Ogunsemi OO, Alebiosu OC, Shorunmu OT. A survey of perceived stress, intimidation, harassment and well-being of resident doctors in a Nigerian teaching hospital. *Niger J Clin Pract*. 2010;13:183–186.
 - 24 Gardner SV, James MF, Evans NR. Gender issues among South African anaesthetists. *S Afr Med J*. 2002;92:732–736.
 - 25 Moss-Racusin CA, Dovidio JF, Brescoll VL, Graham MJ, Handelsman J. Science faculty's subtle gender biases favor male students. *Proc Natl Acad Sci U S A*. 2012;109:16474–16479.
 - 26 Tesch BJ, Wood HM, Helwig AL, Nattlinger AB. Promotion of women physicians in academic medicine. Glass ceiling or sticky floor? *JAMA*. 1995;273:1022–1025.
 - 27 Panosian C, Coates TJ. The new medical “missionaries”—grooming the next generation of global health workers. *N Engl J Med*. 2006;354:1771–1773.
 - 28 Yedidia MJ, Bickel J. Why aren't there more women leaders in academic medicine? The views of clinical department chairs. *Acad Med*. 2001;76:453–465.
 - 29 Mason MA, Goulden M, Frasch K. Keeping women in the science pipeline. *Ann Am Acad Pol Soc Sci*. 2011;638:141–162.
 - 30 Mason MA. The baby penalty. *Chron High Educ*. 2013. <http://chronicle.com/article/The-Baby-Penalty/140813/>. Accessed April 14, 2014.
 - 31 Mason M, Wolfinger N, Goulden M. *Do Babies Matter? Gender and Family in the Ivory Tower*. New Brunswick, NJ: Rutgers University Press; 2013.
 - 32 Ecklund EH, Lincoln AE. Scientists want more children. *PLoS One*. 2011;6:e22590.
 - 33 Hassan MA, Killick SR. Effect of male age on fertility: Evidence for the decline in male fertility with increasing age. *Fertil Steril*. 2003;79(suppl 3):1520–1527.
 - 34 Rothman KJ, Wise LA, Sorensen HT, Riis AH, Mikkelsen EM, Hatch EE. Volitional determinants and age-related decline in fecundability: A general population prospective cohort study in Denmark. *Fertil Steril*. 2013;99:1958–1964.
 - 35 Mason M, Stacy A, Goulden M. The UC Faculty Work and Family Survey. 2003. <http://ucfamilyedge.berkeley.edu>. Accessed April 14, 2014.
 - 36 Schiebinger L, Gilmartin S. Housework is an academic issue. *Academe*. 2010;96:39–44.
 - 37 Frenk J. The global health system: Strengthening national health systems as the next step for global progress. *PLoS Med*. 2010;7:e1000089.
 - 38 Anand S, Bärnighausen T. Human resources and health outcomes: Cross-country econometric study. *Lancet*. 2004;364:1603–1609.
 - 39 Palen J, El-Sadr W, Phoya A, et al. PEPFAR, health system strengthening, and promoting sustainability and country ownership. *J Acquir Immune Defic Syndr*. 2012;60(suppl 3):S113–S119.
 - 40 Travis P, Bennett S, Haines A, et al. Overcoming health-systems constraints to achieve the Millennium Development Goals. *Lancet*. 2004;364:900–906.
 - 41 United Nations Development Programme. Capacity development. <http://www.undp.org/content/undp/en/home/ourwork/capacitybuilding/overview.html>. Accessed April 14, 2014.
 - 42 Frenk J, Chen L, Bhutta ZA, et al. Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *Lancet*. 2010;376:1923–1958.
 - 43 Fogarty International Center. Our mission and vision. <http://www.fic.nih.gov/About/Pages/mision-vision.aspx>. Accessed April 14, 2014.
 - 44 Glimcher LH, Lieberman J. Harvard's women four years later. *Nat Immunol*. 2009;10:559–561.
 - 45 Williams JC. Part-timers on the tenure track. *Chron High Educ*. October 14, 2004. <http://chronicle.com/article/Part-Timers-on-the-Tenure/44606>. Accessed April 14, 2014.
 - 46 Peace Corps Office of Safety and Security. Safety of the Volunteer 2009. December 2010. <http://multimedia.peacecorps.gov/multimedia/pdf/policies/volsafety2009.pdf>. Accessed April 14, 2014.
 - 47 Peace Corps Office of the Inspector General. Final Audit Report: Peace Corps Volunteer Safety and Security Program. 2010. <http://www.eisf.eu/resources/item/?d=2635>. Accessed April 14, 2014.
 - 48 Arguin P, Tan K. Chapter 3: Infectious diseases related to travel: Malaria. In: Centers for Disease Control and Prevention Yellow Book. 2014. <http://www.wnc.cdc.gov/travel/yellowbook/2012/chapter-3-infectious-diseases-related-to-travel/malaria.htm>. Accessed April 14, 2014.