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## Training health professionals on climate change communication and advocacy through applied social science

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Across the United States, climate change impacts are intensifying and accelerating with hardly an area of the country unaffected. While wildfire frequency is growing exponentially on the West Coast [1], people on the East Coast suffer from hurricanes, heavy rainfall, and floods. Each of these events takes a toll on the health of impacted communities. Wildfires, for example, are linked to increased hospital visits for respiratory illness [2], higher rates of mental health impacts such as depression [3], and PTSD [4], and 2022 research shows that wildfires may increase the risk of lung and brain cancer [5]. Other health impacts of climate change include heat-related illness and water, food, and vector-borne diseases [6]. Climate change-fueled events take a toll on human health, in addition to growing financial burdens. It is reported that the health costs of climate change and air pollution are greater than \$800 billion per year [7].

Despite these impacts, there are mitigation efforts that can reduce the worst impacts of climate change. Reducing emissions by decarbonizing the economy and restoring natural ecosystems are two paths forward. As transitioning to renewable energy has gained traction, a number of countries have begun producing much of their electricity generation from renewables. These include Paraguay, Norway, and Costa Rica, which source 93–99% of their electricity from hydropower [8]. Transportation is beginning to shift, too. Electric car sales were up 109% globally from 2020 to 2021, demonstrating the move away from fossil-fuel vehicles [9]. Restoring nature through implementing techniques often referred to as “Natural Climate Solutions” or “NCS” has the potential to sequester 21% of the United States’ greenhouse gas emissions [10]. There is also growing recognition within the health sector of its own emission contributions. Within the healthcare sector, MacNeill et al., suggest a framework that includes reducing the incidence and severity of disease, thereby reducing the demand for health services, providing the appropriate level of care and avoiding unnecessary care, and minimizing the carbon footprint within the health-care supply chain [11].

One of the most important actions individuals can take in addressing climate change is talking about it [12,13]. 45% of Americans report feeling “very concerned” about climate change, but only 14% think that others around them are “very concerned” [14]. This gap in real versus perceived concern can be referred to as “pluralistic ignorance”, the phenomenon in which an individual’s beliefs about their social group’s consensus differs from what the group actually believes, and may be contributing to silence on the issue [15,16]. Goldberg et al. found that talking about climate change with friends and family can result in a positive feedback loop of discussion that in turn, may encourage engagement on the issue [13]. Dr. Katharine Hayhoe is a leader in climate communication research. In her 2018 TED Talk, Hayhoe says “The bottom line is this: climate change is affecting you and me right here, right now, in the places where we live. But by working together, we can fix it. Sure, it’s a daunting problem. Nobody knows that more than us climate scientists. But we can’t give in to despair. We have to go out and actively look for the hope that we need, that will inspire us to act. And that hope begins with a conversation today.” [12]

Communication, particularly from those in the health profession, proves to be meaningful. Compared to other professions, nurses, doctors, and pharmacists are highly trusted in terms of honesty and ethical standards [17]. A 2021 ecoAmerica survey revealed that 64% of Americans say they trust health professionals as sources of climate change information [18]. It should be a priority to equip health professionals with the education and tools they need to advocate, act on, and talk about climate change solutions in a number of ways.

The Climate for Health Ambassador Training is a four-hour course based on applied social science and comprised of six chapters. The training was reviewed by a committee of ten medical doctors, public health professionals, and researchers [see Appendix] who were selected for their recognized work at the intersection of climate change and health. Reviewers were invited to share feedback on the presentation and joined convenings to discuss their comments and recommendations on the training. The program was initially piloted

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in 2019 and based on successful feedback, was scaled in 2020. The training is a comprehensive intervention that brings forth psychology, psychographics, social psychology, epistemology, linguistics, and behavioral economics to inspire and empower health professionals to move up a ladder of engagement from concern to visible leadership and advocacy. It is offered in two formats: in-person at conferences and convenings and online through a Litmos Learning Management System. The training is instructed by trained ecoAmerica staff. When conducted at conferences, instructors are joined by staff of the partner organizations to provide context for their members.

The primary aim of the training is to equip health professionals to speak about, act on, and advocate for climate solutions. Four central goals include:

- (1) Ensuring a baseline knowledge of what we need to know and do about climate change as a health issue.
- (2) Building confidence by preparing for public speaking with important communication strategies.
- (3) Giving prospective Ambassadors the tools and materials necessary to plan and conduct advocacy actions in their communities.
- (4) To provide opportunities to connect with, learn, and share with others in the broader Ambassador community and within their own health profession.

The six chapters include: (1) Introduction, (2) Climate Changes Health, (3) Solutions and Benefits, (4) Talking Health and Climate, (5) Advocacy and Engagement, and (6) Getting Started. The introduction provides a climate science overview to ensure participants have a baseline knowledge of the drivers of our changing climate. Chapter 2, Climate Changes Health, covers the myriad of impacts climate change has on physical and mental health with a focused module that describes climate and health equity. While climate change will harm everyone to some level, certain groups are vulnerable and at higher risk of health impacts than others. This topic is central to ensuring climate action and solutions that benefit all people, especially those who have contributed the least to the problem but are burdened the most by its impacts. The solutions and benefits section in Chapter 3 covers electrifying energy, restoring nature, and solutions specific to the health sector: decarbonizing healthcare, greening healthcare facilities, and health organizations committing to 100% clean energy. The most active and participatory section is communications. Chapter 4 shares examples of messaging that apply learnings from values research and has gone through several rounds of intensive testing spanning across focus groups, online dial surveys, and a phone survey. Through lectures, active engagement and exercise, participants practice their messaging techniques to ensure they can reach their audiences appropriately to inspire action. Participants become familiar with knowing their audience, and connecting with their personal concerns — helping advance the priority of climate change [19]. Advocating for climate action in Chapter 5 reviews advocacy in a wide array of settings: with friends, family, neighbors, policymakers, in the workplace, policy, and online. Finally, the training concludes with guidance on how to get started in the Ambassador Program and community.

By October 2022, the Climate for Health Ambassador program successfully trained over 1200 health professionals across the United States and incorporated over 575 into the program. Officially joining the program is designated by signing an agreement to do the following: each Ambassador is asked to give three peer-to-peer talks (such as publicly speaking with their association's members or presenting at conferences) and complete a minimum of two advocacy actions

per year. Advocacy actions might be taken in the form of writing letters to the editor, meeting with policymakers, and posting advocacy messages on social media. Ambassadors are also publicly listed and may be asked to host a talk or presentation about health and climate change within their region. The Ambassador's actions are currently self-reported, which has proven to be a challenge for the program — ways to improve reporting are being explored. Public participation on climate change is critical from the health sector. Research suggests that to build engagement on climate change, Americans need to see leaders they trust, such as health professionals, addressing the crisis [19]. The Climate for Health Ambassador Program has collaborated with a number of partners including, but not limited to, the American Academy of Pediatrics, the National Environmental Health Association, the American Public Health Association, and NorthCal Kaiser Permanente. The most attended training was conducted virtually in September 2021 with Harvard's Center for Climate, Health, and the Global Environment (Harvard Chan C-Change) which resulted in 173 attendees and 113 signed ambassadors.

There is strong urgency for health professionals to feel confident, prepared, and inspired to act and advocate for climate solutions. The Climate for Health Ambassador Training offers an opportunity for health professionals to connect with a network of climate activists in their field to share experiences and learn from. The growing Ambassador community suggests that a diverse range of health professions and organizations want to take action to curb the climate crisis and that momentum is growing. The result of the training and now an ongoing program is that trusted health professionals are widely sharing values and behaviors for climate action. Future work may (1) examine the most impactful actions taken by Climate for Health Ambassadors to encourage engagement in those areas, and (2) analyze how the empowerment of health professionals on climate may help shift the narrative nationally to be increasingly personal as communications focus on health.

### Declaration of Competing Interest

Alison Nicole Hill reports a relationship with ecoAmerica that includes: employment. Meighen Speiser reports a relationship with ecoAmerica that includes: board membership and employment. ecoAmerica is a 501(c)(3) non-partisan not for profit organization.

### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.joclim.2022.100184.

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