Climate change is possibly the greatest public health challenge of the 21st century; its effects are already felt around the world and predicted to only intensify. The interconnected nature of ecosystem, animal, and human health – all harmed by a degrading climate – results in complex and compounding adverse consequences. The search for solutions needs to be a systems-based, whole of society approach involving extensive collaboration across disciplines, sectors, borders, and all levels of government. To optimize our collective capacity, efficiency, and impact, we will need to clearly, and thoughtfully, define the roles and responsibilities of various fields, including understanding the essential functions performed by public health professionals and systems that are related to climate change and health. Public health has a vital and unique role to play in both mitigating further climate change and helping communities adapt to unavoidable outcomes, particularly for those at greatest risk. Success will rely on advancing our understanding, building partnerships, securing funding, and advocating for change.

Recognizing the urgency of climate change and damage to public health, the Association of Schools and Programs of Public Health (ASPPH) established the Task Force on Climate Change and Health, bringing together leaders in academic public health to develop this report, Responding to the Climate Change and Health Crisis: A Framework for Academic Public Health. The framework examines climate change and health (CCH) in four primary domains – Education and Training, Research, Practice, and Policy and Advocacy – and considering three cross-cutting themes: Environmental Justice, Social Justice, and Health Equity; Interprofessional and Interdisciplinary Collaborations; and Partnerships for Impact (Fig. 1).

The framework concludes with a set of evidence-based principles and recommendations – for both schools and programs of public health (SPPH) and ASPPH as a whole – to take collective action and work with vested partners to reduce the impacts of climate change on population health (Fig. 2). We hope that this framework will serve as a call to action for ASPPH members and SPPH around the world. In the coming years, ASPPH will take steps to implement the recommendations for the association and support our members in developing the resources and capacities needed to implement the recommendations for SPPH.
Educating and training a public health workforce capable of tackling challenges posed by climate change is critical. Effective training will capture the innately interdisciplinary nature of this challenge, clearly articulate the unique role of public health, and provide practical approaches, including the development of standardized competencies related to climate change and health. Prioritizing cross-disciplinary collaborations, capitalizing on partnerships for increasing impact, and integrating issues of environmental justice and health equity will be vital for success. There is a growing demand from both students and employers for CCH preparedness. A mismatch remains, however, between the training that students currently receive, and the knowledge and skills required of them as public health professionals to take on CCH. Addressing this mismatch will involve identifying appropriate competencies, better understanding the functions of the public health workforce around CCH, and facing barriers to implementation of needed training, including ensuring capacity in faculty and funding, prioritizing of CCH among SPPH, and offering resources for the approach and process of integrating related content and skills into curricula.

Research in climate change and health serves a critical purpose in providing the scientific basis for developing policy, formulating approaches, and taking action in the fields of education, practice, and advocacy for public health. Objectives for SPPH will include quantifying the risks and benefits of mitigation and adaptation strategies; examining health disparities resulting from climate change; innovating to better manage the complexities of CCH using modeling, big data, large scales of space and time, systems thinking, and more; building technical and financial capacity; and improving the coordination and communication of data between SPPH, policy makers, and communities. Given the scope and urgency of addressing climate change and its impacts, CCH research has been notably limited and poorly funded. However, recent federal commitments to CCH including an NIH-wide initiative, unprecedented engagement by the medical community, burgeoning resolve to address CCH at SPPH, and increasing funding opportunities, make this a timely moment to mobilize a national effort.

Given the relationship between science, policy, and practice, the translational process of supporting action at all levels is pivotal in implementation of strategies and interventions. Engaging directly with communities therefore serves more than one crucial purpose in the translational process: it simultaneously gives voice to those impacted while ensuring that potential benefits are actualized in a thoughtful and impactful way. There has been limited CCH practice-based scholarship and an absence of robust evidence on translation science within this context. As a result, we are without a strong and tested framework to guide implementation and inform the development of tangible action steps or their standardization at a national level. Fortunately, SPPH have acquired expertise, effective tools, and methods for partnership that can serve as a starting point from which to build. Important objectives will include performing risk assessments and planning, directing funding to practice-based scholarship, increasing visibility of community experience, taking urgent action on environmental justice, better documenting and connecting resources, and becoming savvy at addressing the needs and areas of traction across a range of levels and partners.

With evolving research and community engagement, the opportunity to advocate for and implement relevant CCH policies continues to gain traction. Climate change has been recognized as a major global health threat by organizations such as the World Health Organization and the United Nations and has been recently addressed in the U.S. by Executive Order 14008, which established a National Climate Change Task Force and a government-wide action plan. Major challenges remain including political polarization, uncertain conditions, poor incentive structures, and reconciling the long-term challenge of CC with the intrinsically short-term appointments of political leaders. To combat this, all of public health needs to engage in ways that balance interests and promote complementary, rather than redundant, roles. We must come together to recognize the power and potential of collective action, reaching across the political divide to form collaborations that integrate diverse perspectives and priorities. We raise the alarm concerning the need for action now, balancing ambition with ability, and remaining cognizant of how framing issues of CCH will have a major effect on how policy and advocacy are received and responded to.
EXECUTIVE SUMMARY

ACADEMIC PUBLIC HEALTH LEADERSHIP IN CLIMATE CHANGE AND HEALTH

ASPPH and SPPH can and should serve as leaders in addressing the climate change and health crisis.

**STRATEGIES**

ASPPH and SPPH can and should serve as leaders in this area

**PARTNER**
Partner with communities, businesses, non-profit organizations, and government agencies at local, national, regional, and global levels to achieve the greatest impact

**EDUCATION**
Educate and train public health students and professionals, as well as decision-makers and the public, on the health impacts of climate change and how they can be reduced through evidence-based action

**ALIGN**
Improve alignment of the public health and healthcare sectors, including education and training of public health practitioners and healthcare providers, capitalizing on opportunities for cross-disciplinary efforts

**RESEARCH**
Conduct research into the impacts of climate change on health and how those impacts are disproportionately experienced by certain populations

**INNOVATE**
Innovate and create effective, adaptive approaches to prevent adverse impacts of climate change on health

**COMMUNICATE**
Employ public health communications science and expertise to create more effective approaches to inform about health consequences of climate change and options for addressing climate change

**ADVOCATE**
Advocate for policies that will help to reduce the health impacts of climate change, especially for those most at risk

**CHAMPION**
Champion social and environmental justice

**EMPOWER**
Engage with and empower communities, especially those heavily impacted by climate change, to mitigate and adapt to those impacts

**CONVENE**
Convene across disciplines and sectors to foster cross-training and collaboration

**PARTNER**
CONVENE
CHAMPION
ADVOCATE
EMPOWER
EDUCATION
ALIGN
RESEARCH
INNOVATE
COMMUNICATE
EXECUTIVE SUMMARY

PRINCIPLES

- Member SPPH are diverse in their capacity to act
- ASPPH commits to partnering with organizations working on CCH
- SPPH have unique characteristics and needs
- Environmental justice and health equity should be foundational
- ASPPH and SPPH will advocate for policies that address CCH
- ASPPH and SPPH can offer evidence, best practices, and guidance

OVERARCHING RECOMMENDATIONS

ASPPH

- coordinate internal CCH efforts
- advocate for CCH-specific competencies for training programs
- foster interdisciplinary SPPH engagement
- develop a broad CCH statement and action plan
- develop a platform or resource bank for SPPH

ASPPH and SPPH

- establish relationships with local, national, and global partners
- advocate for interdisciplinary training

EDUCATION AND TRAINING

ASPPH

- Identify a core curriculum in environmental justice and CCH
- Develop curricular resources for SPPH
- Help SPPH to update and/or expand CCH curricula
- Develop training for ASPPH staff on CCH
- Continually refine curricula and training materials
- Collaborate with other leaders in CCH

SPPH

- Join the GCCH
- Integrate CCH and EJ into curricula
- Inventory faculty expertise on CCH and address key gaps
- Lead in advocating for institutional CCH plans
- Continue to integrate CCH in curriculum
- Identify and train frontline community members as collaborators
- Build intergenerational partnerships on CCH education

RESEARCH

ASPPH

- Ensure dissemination of research findings to policymakers
- Develop guidance and action steps for CCH research
- Inventory and track CCH research at SPPH
- Support interdisciplinary CCH research
- Seek collaborative consortium research applications

SPPH

- Advocate for funding of training programs for CCH researchers
- Support faculty in CCH research collaborations
- Expand and improve upon data sharing
- Expand training for future CCH researchers across disciplines

PRACTICE

ASPPH

- Inventory potential funders
- Advocate for funding locally and nationally
- Collaborate with funders to include practice in grants
- Develop a toolkit for CCH work with communities
- Aid publication of community-based CCH case studies
- Increase visibility of grey literature
- Advocate for sustainable pathways for a CCH workforce

SPPH

- Build relationships with local community partners
- Reward faculty generating practice-based CCH scholarship
- Use the ASPPH platform as a resource bank for asset sharing
- Develop a guide of collaboration between SPPH and policymakers
- Provide resources and expertise to the broader community
- Build sustainable pathways for a CCH workforce

POLICY AND ADVOCACY

ASPPH

- Respond to and support legislation affecting this agenda
- Track member progress on fossil fuel divestments
- Advocate CCH research and amelioration funding
- Work with SPPH on carbon neutrality, creating viable solutions
- Support policies that speed the transition to clean energy

SPPH

- Engage with state and local policymakers on CCH
- Support divestment from climate-harmful endowments
- Use the ASPPH platform to share models of engagement
- Develop sustainability and climate action policies and platforms
- Align university actions with health-based institutional actions
- Ensure climate resilience is considered in risk assessments
- Use the ASPPH platform to share universities’ best practices