Dear Planetary Health Alliance Members,

Thank you for another successful year in advancing planetary health research, education, policy, public outreach, and other initiatives. In the presence of 2018’s various prolific articles and reports showcasing the scale and breadth of environmental change and its consequent health impacts, it has been largely through our collaborations with all of you that we have found hope. We are, as a global community, working on some of the most urgent challenges of our time, and we of the Planetary Health Alliance team are not only sincerely impressed by your individual efforts, but also deeply grateful for your continued willingness to work together.

In our mission to support the growth of the field of planetary health, we are excited to continue to organize forums to catalyze and share cutting-edge interdisciplinary research and its application to a broad spectrum of solutions. We look forward to continuing to work with you in advancing planetary health education, streamlining and expanding collaboration through the formation of five education working groups – focused on primary and secondary programs, undergraduate programs, master of public health programs, medical and nursing school programs, and other graduate programs – and developing foundational resources, such as an anthology of planetary health case studies, a planetary health textbook, a planetary health competency framework, planetary health workshops, and an expanded online planetary health education platform. We are eager to continue conversations with you about integrating planetary health into policy across local, national, and multinational levels, as well as expand upon various public outreach efforts, including the recently-launched Clinicians for Planetary Health initiative. And we are thrilled to increase our engagement with indigenous traditions, faith communities, and the arts through community events, artistic competitions, media collaborations, and other avenues that explore different ways of understanding the world around us.

The Planetary Health Alliance now consists of over 140 member institutions from over 30 countries. Our monthly newsletter reaches over 3000 subscribers from across 50 countries. 17 planetary health clubs have been established by students and early career professionals, and we’ve recently created the Planetary Health Student Ambassador Program to support students in educating their campus communities about planetary health through a competitively-awarded leadership opportunity.

As we work our way further into 2019, we present this annual member newsletter to reflect back to you some of 2018’s highlights and developments within the PHA community. In the next few pages, you’ll find updates on global efforts in planetary health, largely drawn from your responses in the annual member survey, as well as opportunities to engage and suggestions for streamlining our efforts going forward. We encourage all of you to keep in touch with us with any and all suggestions, inquiries, and feedback.

Warm wishes,
Erika and the Planetary Health Alliance team
**Governance:** A major point of focus is facilitating the Planetary Health Alliance governance structure to evolve for further ownership and leadership by PHA member institutions in charting our strategic vision. What we’ve heard from you is a desire to democratize leadership, expand geographic representation within our governing committees, and maintain ties to Harvard, at least in the short-term. We look forward to sharing a proposal of potential approaches to evolve the PHA governance structure, to be discussed further with all of you through virtual exchanges and at the membership convening on September 4 at the 2019 Planetary Health Annual Meeting. We will rely on the input and decision-making of PHA members to determine the best path forward.

**2019 Planetary Health Annual Meeting:** This year’s Planetary Health Annual Meeting will be held September 4-6 at Stanford University in Palo Alto, California. The conference will aim to strengthen the scientific case for planetary health framing, learn from efforts to solve planetary health problems, and convene stakeholders from academia, the private sector, civil society, and government to support catalytic conversations to address these crises. We are reviewing submitted programming proposals for plenary sessions, skills workshops, satellite sessions, and abstract submissions with our international programming and review committees. The agenda, crafted to reflect the interests of the broad planetary health community, will be announced in the coming weeks, and registration opens April 15.

**Education:** Five working groups have been established to facilitate connections, share resources, and build new collaborations across all levels of planetary health education. These groups are included below, along with their group leads. Another community-led effort is the Planetary Health Education Competency Framework Project, led by Dr. Carlos Faerron Guzmán of the InterAmerican Center for Global Health, which aims to create a common framework to help establish a diverse spectrum of educational programs that are relevant to the practice of planetary health science and to guide the creation of learning and assessment resources in planetary health education. Beyond these projects, we have been working to develop a planetary health textbook, an anthology of planetary health case studies, an expanded online planetary health education platform, and planetary health workshops geared towards students from primary to graduate schools. We hope that through the development of foundational planetary health resources, strategic collaborations, and effective network-building, we can help infuse planetary health concepts into a broad array of disciplines across all levels of education around the world.

- **Primary/secondary programs**
  - **Group lead:** Naglaa El-Abbadi, Tufts University, naglaa.el_abbadi@tufts.edu

- **Undergraduate programs**
  - **Group lead (interim):** Naglaa El-Abbadi, Tufts University, naglaa.el_abbadi@tufts.edu

- **Master of public health programs**
  - **Group lead:** Ashley Aimone, University of Toronto, ashley.aimone@mail.utoronto.ca

- **Medical and nursing school programs**
  - **Group lead:** Jo Middleton, Brighton and Sussex Medical School, j.middleton@bsms.ac.uk

- **Other graduate programs**
  - **Group lead:** Manolis Kogevinas, Barcelona Institute for Global Health, manolis.kogevinas@isglobal.org
Clinicians for Planetary Health: The Clinicians for Planetary Health initiative works to galvanize clinicians and their patients around the importance of recognizing and acting upon increasingly urgent planetary health challenges through lifestyle modifications and activism. This April, *The Lancet* will be publishing a call-to-action to increase awareness of planetary health and mobilize clinical communities to get engaged, broadly supported by medical associations and healthcare organizations around the world and by the Clinicians for Planetary Health Working Group, which includes clinicians, researchers, educators, public health practitioners, community leaders, and students. Earlier this year, we also worked with the World Organization of Family Doctors (WONCA) to release a declaration calling family doctors around the world to act on planetary health, which has since been widely circulated and translated into numerous languages. We invite individuals and new partner organizations to join the Clinicians for Planetary Health initiative to create and distribute patient-facing materials, collaborate and share best practices, and engage in other channels of planetary health activism. More information can be found at www.planetaryhealthalliance.org/clinicians.

Supporters of “A Call for Clinicians to Act on Planetary Health”:
The World Organization of Family Doctors (WONCA), Health Care Without Harm, the World Federation of Public Health Associations, the International Federation of Medical Students’ Associations, the American College of Lifestyle Medicine, the American Public Health Association, the Alliance of Nurses for Healthy Environments, the Canadian Medical Association, the Canadian Association of Physicians for the Environment, the Caribbean College of Family Physicians, the Brazilian Society of Family and Community Medicine, the Brazilian College of Lifestyle Medicine (CBMEV), the Brazilian Society of Family and Community Medicine, the Brazilian Ministry of Health Oswaldo Cruz Foundation (Fiocruz), the Uruguayan Society of Family and Community Medicine (SUMEFAC), the UK Health Alliance on Climate Change, the Royal College of General Practitioners, the Centre for Sustainable Healthcare, Irish Doctors for the Environment, the Association of Public Health Registrars of Ireland, the Brookfield Centre for Lifestyle Medicine of Nigeria, the Society of Lifestyle Medicine of Nigeria, the African Lifestyle Medicine Association, Doctors for the Environment Australia, the Public Health Association of Australia, Health Professionals for a Healthy Climate, the University of Minnesota School of Nursing & MHealth/Fairview Nursing Collaboratory, Climate for Health, Health In Harmony, the True Health Initiative, and the Consortium of Universities for Global Health

Emerging Scholars Network: The Planetary Health Emerging Scholars Network has continued to evolve, involving over 300 students and early career investigators around the world and 17 formally-established planetary health clubs, listed below. Some examples of these clubs’ activities include: discussing research articles; planning lecture series, workshops, and other events; establishing awareness campaigns; working with faculty and other student groups to implement planetary health policies at their universities; and engaging in other local planetary health interventions.

Drawing from a brainstorming session at the 2018 Planetary Health Annual Meeting, students put together the “Building A Planetary Health Club: A Ten-Point Guide” to help other university and regional communities create their own efforts. Another new initiative, the recently-launched Planetary Health Student Ambassador Program, helps to further support students in integrating planetary health into their campus communities, developing their careers through being paired with mentors, and expanding leadership skills. The
upcoming Planetary Health Annual Meeting, as previous ones, will continue to build upon our goal of supporting the next generation’s involvement and leadership in planetary health through special mentorship and networking opportunities.

**Planetary Health Clubs:**
- Bangladesh Planetary Health Club
- The Caribbean Planetary Health Club
- Health and Environment at Yale
- Human and Planetary Health Society at Doane University
- Human Health and Climate Change at UCSF
- LSHTM Planetary Health Network
- Planetary Health Network at University of British Columbia, Vancouver
- The Students for Planetary Health Berlin
- SUNY Downstate Planetary Health Club
- Sustainability & Health Student Forum at Harvard School of Public Health
- Sustainable Healthcare Education Network
- Standing Committee on Climate Change and the Environment (Honduras)
- University of Eldoret Planetary Health Society
- Wisconsin One Health Forum at University of Madison-Wisconsin
- Brandeis Sustainability Ambassadors
- Statale a Impatto Zero at the University of Milan
- Thailand Planetary Health Club

**The Constellation Project:** The Constellation Project is a new collaboration that brings together science, faith, arts, and indigenous voices, proposing that, in order to solve our global environmental and health challenges, we must first address the underlying wounds in our spirituality, fractures between our disciplines, and dissolution of our communities. The project, focused on convening community events and developing multimedia resources, is a key new part of our Planetary Health Storytelling initiative, which aims to reach a broad public audience and engage them in meaningful discussion, reflection, and action. These efforts are supported by Planetary Health Storytellers: writers, photographers, filmmakers, speakers, and artists committed to depicting our entanglement with the natural world. Through showcasing humanity’s profound impacts on the Earth and the consequent effects on our health and wellbeing, Planetary Health Storytellers help us ask bigger questions about our place in the world and imagine a better future. To learn more about the Constellation Project, our soon-to-be-announced first cohort of Planetary Health Storytellers, and ways to get involved, visit www.planetaryhealthalliance.org/the-constellation-project.

**Opportunities for connecting:** We’ve continued to explore ways to bring together the planetary health community to connect and collaborate across disciplines, sectors, geographic regions, and generations. Beyond forming working groups in education and the Clinicians for Planetary Health initiative and helping to establish planetary health regional hubs, we have also been excited to support webinars to facilitate shared learning and exchange (e.g. building planetary health programs at universities, developing a planetary health competency framework, discussing relevant books). We hope to see many of you at the 2019 Planetary Health Annual Meeting, and, in the meantime, we invite you to join the planetary health online community and its subgroups for education, emerging scholars, and clinicians.
A selection of common themes that have emerged in our conversations with all of you:

**The tree vs. the fruit:** Especially throughout the past year, you have raised distinctions between planetary health as a field and planetary health as a movement (metaphorically, the tree and its fruit, respectively). The former focuses more on developing foundational research, frameworks, and resources; the latter emphasizes on-the-ground, bottom-up action through local interventions and community-organizing efforts.

How does the Planetary Health Alliance fit in? Discussions with you have been enormously helpful in parsing this out. In short, the Planetary Health Alliance team supports the growth of the planetary health field and of a worldwide planetary health community, helping to establish the foundation for a planetary health movement. We are engaged in supporting the development and mainstreaming of planetary health research, education, policy, and outreach and in creating a robust worldwide network committed to planetary health challenges; and we depend on all of you and on the broader planetary health community to not only contribute to the ongoing development of these field-building efforts, but also to translate all of this to local contexts and engage in your local communities in advancing a global movement.

We are eager to assist all of you however possible. Beyond connecting you with relevant actors and resources to help understand and address planetary health challenges in your particular contexts, we are committed to help you bring planetary health to your local communities, mobilizing a broad swath of individuals and organizations committed to tackling these important and deeply urgent issues. We are eager to support your leadership in conceptualizing community events, developing educational opportunities, advancing research and policy collaborations, engaging the next generation of planetary health leaders, providing assistance around creating and disseminating media resources, and invoking local action.

**Other ways of “knowing”**: A major theme of 2018, as highlighted in book discussions, Annual Meeting planning, and community feedback, has been other ways of “knowing.” How can we incorporate a broad spectrum of voices from a vast array of geographies and traditions to not only understand the full scope of planetary health, but also imagine a better future? Planetary health emphasizes the disproportionate effects of global environmental change, largely wrought by the high-income world, on the world’s most vulnerable and future generations, and it pays homage to the “challenge of imagination” (as mentioned in the Rockefeller-Lancet Commission report on planetary health). How can we incorporate environmental and social considerations into our economic models? How can we better measure human progress? How can we emphasize long-term over short-term considerations in our policies and actions?

We continue to place emphasis on incorporating Global South voices into the planetary health community. While we are thrilled that about a quarter of our membership is based in low- and middle-income countries, we would love, with your help, to further expand this,
increasing the involvement of underrepresented regions in the planetary health community and forging North-South partnerships. We are excited to continue to support efforts like the development of regional hubs, the translation of resources, the drafting of global statements, and the establishment of scholarship programs to involve a larger part of our world in planetary health, and we urge all of you – particularly those of you from the Global South – to continue to inform and build upon our efforts. Please encourage colleagues at organizations that you think should get involved in planetary health to apply for membership through our website.

Additionally, we have increased our emphasis on showcasing indigenous voices and systems of traditional knowledge through the Planetary Health Annual Meeting, the case study anthology, book recommendations, and blog posts, and we have plans to continue to expand these in 2019. We are working with a number of you in thinking through ways to meaningfully showcase indigenous worldviews through multimedia resources, the 2019 Planetary Health Annual Meeting, and other events, and we welcome all of your suggestions and contributions.

Embedded in “other forms of knowing” are also the arts, humanities, and faith traditions. As we continue, through the above-mentioned Constellation Project, to build collaborations with artists, filmmakers, writers, photographers, storytellers, faith leaders, indigenous communities, and others who can help us understand and address our global environmental and health challenges through the poetic, aesthetic, philosophical, moral, and spiritual, we encourage you to do the same in your own communities and to let us know of any of your efforts or ideas that we can help support.

**Solutions:** What does an ideal world look like, and how do we get there? This question has arisen many times in various forms over this past year in conversations with members, emerging scholars, and others in the planetary health community. The need to apply planetary health science to solutions and to ground our discourse in action is a massive priority, both to streamline top-down research, policy, innovation, and intervention efforts and to inspire a broader public often paralyzed with doomsday messaging. To this end, we are showcasing planetary health solutions in the case study anthology, the 2019 Planetary Health Annual Meeting, and a new (currently-in-progress) section of our website.

Beyond incorporating solutions into planetary health messaging, many of you have also emphasized the need to integrate more action-focused entities in the Planetary Health Alliance. Two major challenges in the planetary health community are funding and translating research to action. How can we better involve donor communities, governments, and multilateral agencies in the planetary health community? As we continue to think through this question ourselves and to expand our partnerships with relevant organizations, we call upon you to take leadership. If we can support you in your efforts to engage with local funders and policymakers, please let us know.
Creating opportunities: If students study planetary health, what kinds of career paths await them? Many of you have expressed concern about the relative lack of opportunities in planetary health and the potential barrier that this poses for individuals’ – particularly students’ – engagement. Over the past year, we have been outlining various potential pathways to address this issue, and we hope to make available to the students and early career professionals of the Planetary Health Emerging Scholars Network opportunities for internships based at Planetary Health Alliance member institutions. We will be following up with those of you who indicated existing opportunities or interest in creating new ones in the coming months.

The echo chamber: We all need, as many of you have expressed, to get outside of our echo chambers. As we work to expand communications beyond the academic and research communities through the Clinicians for Planetary Health initiative, the Constellation Project, and multimedia collaborations, we encourage you to do the same. As you draft key messages, seek relevant connections, plan media appearances, or conceptualize community events, please feel free to reach out to us or to the planetary health online community for assistance (and be sure to stay tuned to additional resources that we’re currently developing for the Planetary Health Alliance website).

When announcing new efforts in planetary health research, policy, education, and outreach, please connect with us to amplify your messaging. We would be happy to share news with the planetary health community and, where appropriate, help connect you with media contacts and other storytellers.

Streamlining and mainstreaming: Collaborating across disciplinary and geographic boundaries calls for efforts in both mainstreaming planetary health and streamlining community collaborations. We have been working to better organize the Planetary Health Alliance’s network through the establishment of working groups and regional hubs, increase opportunities for engagement, and seed out leadership to the broader community. Part of this involves the formation of the five education working groups, the Planetary Health Education Competency Framework Project, and the Clinicians for Planetary Health initiative. This also involves the formation of regional collaborations, with the first being the Latin America/Caribbean Planetary Health Regional Hub. You have also expressed interest in creating thematic working groups – we encourage you to take leadership in establishing these and to let us know how we can support you.

In terms of mainstreaming planetary health – we see this as a crucial point of focus in our ongoing activities. How can we incorporate planetary health into global educational, research, and policy frameworks? We are eager to work with all of you in developing robust partnerships with multilateral organizations, universities, research centers, funding bodies, governments, and private sector entities to communicate the value of the planetary health lens and help frame key messages and strategic areas of focus.
Please see below for a snapshot of research updates from the planetary health community, as drawn from responses to the annual member survey. This section is meant to help showcase efforts from across the globe and help catalyze potential collaborations. If we can help you connect to other Planetary Health Alliance member institutions or provide more context on who’s doing what, where, please contact us.

**Food systems and nutrition:**
Various Planetary Health Alliance members have continued to expand research focused on food systems and nutrition this year, including the London School of Hygiene and Tropical Medicine (LSHTM), the Harvard T.H. Chan School of Public Health, the University of Sydney, the University of Edinburgh, the University of Wisconsin-Madison, the University of Washington, the Gund Institute for Environment at the University of Vermont, the Center for World Indigenous Studies (CWIS), Doane University, and the Center for International Forestry Research (CIFOR).

Some of LSHTM’s latest projects have centered on sustainable and healthy food systems and future diets and health, with particular focuses on diets in India, the palm oil industry, and the effects of climate change on vegetable and legume yields and nutritional quality. The Harvard T.H. Chan School of Public Health has published research on the negative impacts of rising carbon dioxide atmospheric concentrations on nutritional content of key staple crops, with broad implications for malnutrition worldwide. The University of Sydney has published work on a planetary health approach to secure, safe, sustainable food systems, the University of Edinburgh has studied the impacts that global dietary guidelines have on climate, and the University of Wisconsin-Madison has conducted research on sustainable food, with an emphasis on entomophagy.

Meanwhile, the University of Washington has studied undernutrition, the Gund Institute has recently published on dietary diversity increasing with nearby forests (dependent on households’ access to capital), and CWIS has looked at the negative impacts of elevated atmospheric carbon dioxide on traditional foods and medicines, with particular focus on implications for indigenous peoples. Doane University has recently collaborated with a group in Cyprus in understanding the health, environmental, and economic benefits of serving locally-produced organic meals to primary school children, and CIFOR has looked at relationships between forests and fish and between changing landscapes and changing diets in Indonesia.

**Infectious disease:** Infectious disease has continued to be a prominent area of planetary health research, with recent contributions from the Global Health Asia Institute, PIVOT, the Harvard T.H. Chan School of Public Health, the London School of Hygiene and Tropical Medicine (LSHTM), the International Center for Diarrhoeal Disease Research, Bangladesh (icddr,b), the University of Washington, George Mason University, the Grantham Institute at Imperial College London, the Cary Institute of Ecosystem Studies, the University of Copenhagen, the Gund Institute for Environment, the University of Sydney, the UC Davis One Health Institute, Royal Holloway, and others.
The Global Health Asia Institute, PIVOT, and the Harvard T.H. Chan School of Public Health have all continued work focused on malaria, exploring the disease’s environmental determinants and prevention. LSHTM, icddr,b, and the University of Copenhagen have conducted research on dengue, particularly as impacted by climate change and variability, with the University of Copenhagen also exploring leptospirosis in Sri Lanka and cholera in Bangladesh. The University of Washington, George Mason University, and the Grantham Institute have focused on the ecology of vector-borne and zoonotic diseases, and the Grantham Institute has also investigated the disease implications of climate change and the biogeography and mapping of human infectious disease. The Cary Institute has continued to research connections between the emergence and transmission of pathogens and changes in climate, biodiversity, and landscapes, with particular focuses on Lyme disease, machine learning, and urban ecology. The Gund Institute has continued to explore linkages between diarrheal diseases and forests, with a new study exploring the impacts of nearby forests on the efficacy of sanitation interventions, and the University of Sydney has explored an ecosystem approach to mitigating disaster relief and waterborne diseases. Finally, the UC Davis One Health Institute has launched a variety of projects, including the USAID Predict Project focused on Ebola and the Global Virome Project, and Royal Holloway, University of London has explored antimicrobial resistance.

**Family planning and reproductive health:** Pathfinder International and the Population Reference Bureau, among many others in the planetary health community, continue to explore the population health environment approach, which highlights issues of family planning and reproductive health in planetary health challenges.

Some of Pathfinder International’s latest research has focused on linkages between family planning and resilience in western Tanzania, income generation and empowerment pathways for rural women in Uganda, and integrated population health environment approaches across the Lake Victoria Basin. Similarly, some of the Population Reference Bureau’s most recent projects have also focused on family planning and resilience in western Tanzania, as well as on climate adaptation finance, youth engagement, and reproductive health.

**Urbanization:** Urbanization is the most dominant demographic trend of the 21st century. More than half of the world’s population lives in urban areas, with that number expected to increase to two-thirds by 2050. Various Planetary Health Alliance members have continued to expand research exploring linkages between urbanization and global environmental and health challenges, including the Institute of Urban Environment at the Chinese Academy of Sciences, the Africa Population Health Research Center (APHRC), the London School of Hygiene and Tropical Medicine (LSHTM), the Barcelona Institute of Global Health (ISGlobal), the Monash Sustainable Development Institute, Duke Kunshan University, and the Gund Institute for Environment.

The Institute of Urban Environment at the Chinese Academy of Sciences, APHRC, LSHTM, and ISGlobal all have continued to expand research that focuses broadly on ties between the urban environment, sustainability, and human health and wellbeing, with particular
areas of focus including greenhouse gas emissions, air pollution, noise exposure, green space, artificial light exposure, and sanitation. The Monash Sustainable Development Institute continues its work on revitalizing informal settlements and their environments, Duke Kunshan University has engaged in the Tsinghua-Lancet Commission on Healthy Cities in China, and the Gund Institute has focused on urban green space, with a new paper exploring its implications for mood, negativity, and self-orientation.

**Pollution:** The Lancet Commission on Pollution and Health has termed pollution “the largest environmental cause of disease and premature death in the world today.” In addition to the above-mentioned research conducted on pollution in the context of urbanization, Planetary Health Alliance members have continued to explore global pollution more broadly, with recent efforts including the work of Columbia University, the Barcelona Institute of Global Health (ISGlobal), and Sapienza University of Rome.

Columbia University has continued to explore the health effects of exposure to indoor air pollution from biomass fuels. Similarly, ISGlobal has been looking at the cardiovascular health impacts of particulate air pollution, focusing on Telangana India, with associated investigations of the impacts of land use change on cardio-metabolic health. Sapienza University of Rome has looked at linkages between air pollution exposures and socioeconomic status in Italy, decreasing trends in air pollution in the metropolitan area of Rome, and trends of atmospheric emissions within the road transport sector.

**Changes in biodiversity and land cover:** Conserving, restoring, and managing ecosystems is a key strategy in advancing planetary health. Various Planetary Health Alliance members have continued to lay the foundation for this work through their research on shifts in biodiversity, land cover, and other elements of changing ecosystems, including the Cary Institute of Ecosystem Studies, the Gund Institute of Environment, NatureServe, George Mason University, the UC Davis One Health Institute, Royal Holloway, and Health In Harmony.

As mentioned above, the Cary Institute for Ecosystem Studies has continued to expand efforts to understand the ecology of diseases, particularly Lyme, in the context of various environmental changes, including climate change, forest fragmentation and loss, and shifting species compositions. The Gund Institute has been working on a study assessing the impacts of protected areas on health outcomes in children across over 25 countries. NatureServe has been working to establish Biodiversity Observation Networks in the Tropical Andes, along with other efforts in data collection and the development of indicators that capture changes in biodiversity, particularly in the Americas. George Mason University has focused on issues of biodiversity governance, the UC Davis One Health Institute has explored the health of large carnivores in India, Royal Holloway has continued work in issues of biodiversity loss more broadly, and Health In Harmony has maintained focus on exploring issues of deforestation as they pertain to planetary health.
Climate change: The release of the IPCC special report underscored the importance of urgently taking action on climate change, citing the large cuts we must make in greenhouse gas emissions by 2030 (by about 45% from 2010 levels) in order to prevent temperature rises exceeding 1.5 degrees Celsius above pre-industrial levels, which would lead to even greater increases in various climate-related economic, sociopolitical, and health risks. Research on the linkages between climate change and health has been prolific, including amongst various Planetary Health Alliance members, such as the University of Washington, Columbia University, the Barcelona Institute of Global Health (ISGlobal), the University of Monash, the Cyprus International Institute for Environmental and Public Health, the Cary Institute of Ecosystem Studies, Royal Holloway, Ohio State University, the Earth Institute at Columbia University, the International Centre for Diarrhoeal Disease Research Bangladesh (icddr,b), Sapienza University of Rome, George Mason University, Stanford University, and the American Public Health Association.

The University of Washington, Columbia University, ISGlobal, and the University of Monash have all continued work around various health impacts of climate change, including heat-related mortality and shifting infectious disease dynamics. The Cyprus International Institute for Environmental and Public Health has researched other impacts of heat stress, including the effects of heat on metabolic hormones. The above-mentioned research of the Cary Institute incorporates analysis of the impacts of aspects of climate change on infectious disease – specifically, showing that longer periods of warm weather and warming northern latitudes allow ticks more time to find hosts and expand geographically. ISGlobal has also conducted research on implications of heat stress on non-communicable disease (like chronic kidney disease) and labor productivity in agriculture. Royal Holloway has focused on issues surrounding sea level rise, Ohio State University has investigated the effects of coastal climate change on migration in Bangladesh, and the icddr,b has continued to evaluate climate adaptation strategies, specifically focusing on the salinity of drinking water in coastal Bangladesh. The Earth Institute has conducted work on temperature fluctuations and climate change on human migrations. Sapienza University of Rome and the Cyprus International Institute for Environmental and Public Health have both explored public awareness and opinion around these issues, conducting national surveys on knowledge, attitudes, and behaviors around climate change and its health implications, George Mason University has continued work focused on sustainability strategies to mitigate climate change, Stanford University has studied the effects of rising temperatures on mental health, and the American Public Health Association has created a new center on Climate, Health and Equity.

Other: Other key areas of research in the planetary health community include active transport as a health and environment co-benefit (University of Wisconsin-Madison), energy (University of Wisconsin-Madison), social systems in the context of planetary health (Time + Tide Foundation; University of Minnesota School of Nursing), pastoralist communities (Population Health Environment Ethiopia), sustainable tourism (University of Copenhagen), the health impacts of oil extraction (ISGlobal), the physical and mental health consequences
of natural disasters (Tokyo Medical and Dental University), the use of the radical listening methodology in developing community-based planetary health interventions (Health In Harmony), and intersections between healthcare and sustainability (University of Milan Gaia 2050; Scottish Managed Sustainable Health Network; University of Sydney).

Journals and research frameworks: A number of journals focus on the intersections between health and global environmental change, including The Lancet Planetary Health, GeoHealth, Nature Sustainability, Nature Climate Change, One Earth, Frontiers Public Health (with a specialty section in planetary health), and soon Nature Food. We are also excited to see special issues in planetary health, such as one published by the Medical Journal of Australia, and the integration of planetary health into research frameworks, such as in the University of Minnesota School of Nursing and in the Gund Institute for Environment at the University of Vermont.

How have members brought planetary health to their home communities?

- **67%** Engaging in relevant collaborations with local and regional actors (e.g. businesses, governments)
- **49%** Providing planetary health educational opportunities (e.g. courses, degree programs)
- **42%** Hosting community events (e.g. lectures, film screenings)
- **36%** Creating relevant experiential learning opportunities (e.g. internships, summer programs)
- **24%** Establishing relevant funding opportunities
- **4%** Hosting a planetary health club through the Planetary Health Emerging Scholars Network
Please see below for recent updates in planetary health education at Planetary Health Alliance member institutions. For more information on planetary health education, please visit our website, and submit to the “Who’s Doing What, Where” map on our homepage to be featured.

**Planetary health-focused courses and lectures offered by:**

- University of Toronto Dalla Lana School of Public Health ("Planetary Health" course for graduate students)
- Harvard University ("Planetary Health: Understanding the Human Health Impacts of Accelerating Environmental Change" for undergraduate students)
- Project Zero’s Out of Eden Learn (planetary health curriculum)
- Monash University (planetary health integrated into sustainability courses)
- Duke Kunshan University ("Planetary Health and Environmental Epidemiology" course)
- University of California Planetary Health Center of Expertise (multi-campus planetary health online courses, including “Global Population, Health and Environment” and “Climate Change & Disaster Management”)
- Oregon Health and Sciences University-Portland State University School of Public Health (two graduate courses, “Climate Change and Human Health” and “Global and Planetary Health”)
- PHE Learning Lab at Pathfinder International and the University of Nairobi (Population Health Environment short course)
- London School of Hygiene and Tropical Medicine (MOOC on agriculture, nutrition, and health; in-house short course on planetary health)
- Makerere University (Population Health Environment curriculum)
- Mountains of the Moon University (Population Health Environment curriculum)
- University of Dar es Salaam (Population Health Environment curriculum)
- University of California Berkeley (Population Health Environment curriculum)
- Grantham Institute at Imperial College London (MOOCs on climate change and health)
- Institute of Urban Environment at the Chinese Academy of Sciences (new courses and lectures)
- Future Learn ("The Impact of Climate Change on Public Health" MOOC)
- University of Wisconsin-Madison (new undergraduate course for Global Health major)
- University of Barcelona (lectures on planetary health in the environmental health module in the Master of Global Health program)
- University of Pompeu Fabra (planetary wellbeing initiative)
- Sapienza University of Rome (undergraduate planetary health course)
- University of Milan Gaia 2050 (proposals for planetary health courses in Department of Medicine)
- Tokyo Medical and Dental University (new courses in Master of Public Health in Global Health program and integration of climate change and health lectures into medical curriculum)
- University of Nottingham (masterclass on planetary health)
- PIVOT ("Ecological and Epidemiological Modeling in Madagascar")
- George Mason University ("One Health: A Transdisciplinary Approach")
- University of California Davis One Health Institute (four-week short course in Tanzania through the RxOne Health Summer Institute)
- Khazar University (planetary health lecture included in life science course)
- Thammasat University (courses offered in BA Social Entrepreneurship & Global Studies and MA Social Innovation & Sustainability programs and yearly Border Health Field Immersion Summer Course)
- Royal Holloway, University of London (planetary health lectures incorporated into master’s programs)
Health In Harmony (new field courses for students and professionals in Borneo)
Centre for Sustainable Healthcare (masterclass for healthcare professionals, educators, and students focused on planetary health and sustainable healthcare)
University of Minnesota School of Nursing (open-access curriculum slides on “Climate Change and Health: An Interprofessional Response”)
Transition Earth (educational initiatives targeting high school students)
Smithsonian National Museum of Natural History (planetary health seminar)
Moscow Middle School, Idaho (“Art for Planetary Health: A Socially Engaged Art Project” course for middle school students)

Certificates and degree programs offered by:

- Yale Climate Change and Health Initiative (18-week online certificate program on climate change and health)
- Barcelona Institute of Global Health (minor in planetary wellbeing currently in development)
- Doane University (Sustainable Agribusiness MicroMasters focused on sustainable agri-food systems currently in development)
- University of Minnesota School of Nursing (planetary health certificate for healthcare professionals currently in development)
- Brunel University London planetary health track (as part of the undergraduate Global Challenges degree program)
- Cornell University (planetary health incorporated into the Master of Public Health program)
- University of Copenhagen (planetary health incorporated into the Master of Disaster Management program)
- University of Miami (graduate program Master of Science in Climate and Health)

New experiential opportunities offered by:

- APHRC and Pathfinder International (research opportunities between the University of California Berkeley and partner universities in East Africa; doctoral fellowships in Population Health Environment)
- Health In Harmony
- Global Health Asia Institute

Cross-university initiatives developed by:

- University of California Berkeley (establishment of the Population Health Environment Affinity group in collaboration with Pathfinder International)
- London School of Hygiene and Tropical Medicine (new center on Climate Change and Planetary Health)
- University of New England (incorporation of planetary health into university strategic plan)
- Pompeu Fabra University (launch of the planetary health wellbeing initiative in collaboration with Barcelona Institute of Global Health)
- Federal University for Latin American Integration (UNILA) (organization of the S3D Lab dedicated to promoting planetary health)
- Doane University (launch of Institute for Human and Planetary Health)
- Duke University (launch of the Duke Global Health Innovation Center)
Other programs developed by:

- American Geophysical Union (large education program to support students and early career investigators via travel grants, mentorship, etc.)
- Population Reference Bureau (webinars on population health environment topics, including family planning and climate adaptation)
- University of Washington (faculty capacity-building)
- Duke Kunshan University (development of planetary health case studies for planetary health course)
- International Federation of Medical Students (IFMSA) (vision for climate change and health incorporated into the curriculum of every medical school by 2020)
- University of New England (planning a planetary health-themed speaker and film series and brainstorming on a university-wide planetary health strategy)
- Columbia University (development of the Global Consortium on Climate and Health Education platform)
- University of Toronto Dalla Lana School of Public Health (establishment of departmental environment committees to map out and develop educational offerings)
- NatureServe (development of the Pulse of the Planet Webinar Series with the Group on Earth Observations Biodiversity Observation Network)
- Thammasat University (participation of students, with mentoring and coaching by faculty, in competitions focused on social and environmental issues relevant to planetary health)
- Sustainable Healthcare Education Network (supporting educators from UK medical schools in integrating sustainability topics into healthcare educational offerings)
- Royal Holloway, University of London (training Global South partners)
- University of Sydney (Planetary Health Platform for multidisciplinary research and education)
- Planetary Health Alliance (Planetary Health Student Ambassador program)
- Columbia University Global Consortium on Climate and Health Education (online knowledge bank with climate and health teaching resources).

Have educational resources you’d like to share with the planetary health community? Email us.
<<pha@harvard.edu>>
Planetary Health Alliance member institutions have advanced a number of policy developments and interventions, some of which are summarized here.

In family planning and reproductive health, Pathfinder International, the Population Reference Bureau, and the Population Media Center have all been active in developing local-, regional-, and national-level policies and interventions (including communications entertainment educational programming), particularly in the Lake Victoria Basin and broader East Africa.

The Institute of Urban Environment at the Chinese Academy of Sciences and the Institut Bon Pasteur in Mauritius have both been active in advancing policies and interventions focused on pollution control, waste management, recycling, and wastewater treatment.

In biodiversity-relevant developments, the Gund Institute for Environment has partnered with the World Wildlife Fund and USAID to orient their work around the intersection of biodiversity and health outcomes, George Mason University has advanced interventions around the environmental security and conservation of sea turtles and illegal wildlife trade, and the Cary Institute of Ecosystem Studies has helped to advance policy around Lyme disease in New York state.

In urban informal settlements, the Monash Sustainable Development Institute has developed policies and interventions to advance human health and environmental sustainability, and the APHRC has assessed policy options for mitigating the impacts of indoor air pollution and promoting waste management technologies.

In terms of healthcare sustainability, the Devon Local Nature Partnership has engaged in advocacy with clinical communities at the local and national levels to incorporate environmental sustainability into healthcare practices and continues to advance planetary-health minded clinical interventions. The Sustainable Healthcare Education Network continues to support educators in integrating planetary health and sustainability topics into medical schools across the UK, with recent efforts including the development of case studies, workshops, and the incorporation of sustainability into learning outcomes for all UK medical graduates. Health In Harmony has recently continued its work to make the case for doctors’ and health care workers’ responsibility to become “planetary healers.”

To have your work featured on our website, submit to the “Who’s Doing What, Where” map on our homepage.
In other news, the American Geophysical Union has developed a number of policy statements through its Science Policy Department and is working on developing a GeoHealth policy statement within the next couple of years, and the American Public Health Association is working to advance climate action and policy through its new Center on Climate, Health and Equity. The University of Washington has developed national health adaptation plans, the University of Wisconsin-Madison continues to advance energy policies, and Blue Ventures is supporting the replication of integrated health-environment programming across seven countries. The Barcelona Institute of Global Health is co-leading the HERA project, an EU-funded effort to set environmental health priorities in Europe based on the planetary health approach. The Center for World Indigenous Studies has engaged with the World Health Organization in an effort to define protocols for integrating traditional and conventional medicine. Doane University is advancing a planetary health-minded campus sustainability and wellness plan, with heavy involvement of the student-run Human and Planetary Health Society. Health In Harmony has worked to integrate planetary health practice into traditional public health practices. The One Health One Caribbean One Love project was implemented by the University of the West Indies (UWI) to address challenges and solutions in the Caribbean using an interdisciplinary One Health approach, the icddr,b is forming an environmental health and interventions group focused on planetary health, and the EAT-Lancet Commission on Food, Planet, Health has prescribed a planetary health diet.
The Physicians for Human Rights conference at Dartmouth held its fifth annual conference on planetary health January 11-12, 2019.

The Global Health Film Festival awarded the Planetary Health Film prize to Albatross on December 12, 2018.

The UNFCCC Momentum for Change Planetary Health awards took place on December 10, 2018.

The Midwest Universities for Global Health 5.0: Better Together included a session on planetary health in December 2018.

The Sydney Institute of Agriculture and the Planetary Health Platform at the University of Sydney co-hosted the Soil Security and Planetary Health Conference from December 4-6, 2018.


The International Conference on Family Planning, held in Kigali, Rwanda in mid-November 2018, highlighted several innovative research and integrated development initiatives on integrating voluntary family planning with other development initiatives.


The University of Exeter Medical School, in collaboration with the Devon Local Nature Partnership and other partners, held a “Waking up to Planetary Health” conference on November 7, 2018.

The inaugural Oceania Planetary Health Forum brought together researchers and practitioners in health, development, and the environment in Fiji from November 5-6, 2018.

The London School of Hygiene and Tropical Medicine showcased selected MSc Projects from the 2017-18 cohort that spanned topics in planetary health, which took place on October 25, 2018.

The Rockefeller Foundation Economic Council on Planetary Health at the Oxford Martin School hosted a series of talks on planetary health during the months of October and November.

The Planetary Health Alliance hosted a planetary health workshop at the Northeastern University Global Health Initiative conference on October 20, 2018.

The Fifth Global Symposium on Health Systems Research (HSR2018) organized a photovoice exhibition that highlighted planetary health research issues and the value of participatory research.

The American Geophysical Union hosted the The AGU JING (Joint International Network in Geoscience) Meeting on Atmospheric PM2.5 in October 2018.

The Imperial College London’s Grantham Institute and the affiliated planetary health club organized the “Health and Wellbeing on a Changing Planet” symposium on September 27, 2018.


UC Davis hosted a day-long symposium centered on the key Global Climate Action Summit themes, focused on land stewardship and sustainable communities, in September 2018.

Imperial College London hosted a seminar on “Health and Wellbeing on a Changing Planet” in September 2018.

University of Sydney held a “Strengthening food and nutrition security through a Planetary Health lens in resource-limiting settings” conference on July 10-12, 2018.

The International Institute for Environment and Development (IIED) held a panel discussion on “Climate change, health and well-being for cities and informal settlements in the Global South” on July 9, 2018.

Khazar University organized the 1st International Conference on One Health: Problems & Solutions, bringing together multiple health science professionals, at local, national and global levels to achieve the best for humans, animals, wildlife, plants and our environment, in June 2018.
The 2018 Planetary Health Annual Meeting was organized by the Planetary Health Alliance, the University of Edinburgh, The Lancet Planetary Health, The Lancet Countdown, The Rockefeller Foundation, Wellcome Trust, American Geophysical Union, Future Earth, and the International Development Research Centre in Edinburgh, Scotland from May 29-June 1, 2018.

The Cyprus International Institute for Environmental and Public Health, in collaboration with the Office of the EU Commissioner for the Environment, organized an event on planetary health in May 2018.

PIVOT organized and hosted a large planetary health meeting in Madagascar with collaborators and parties from many institutions in May 2018.

Oxford Martin held a “Planetary health: does our planet have boundaries?” with Prof Yadvinder Malhi and Kate Raworth on May 2, 2018.

The University of Minnesota Twin Cities hosted the 3rd International Conference on One Medicine One Science: Science and Policy at the Interface of Environment, Agriculture, and Medicine in April 2018.

The Prince Mahidol Award Conference featured a panel on planetary health in January 2018.

The theme of the Filipino Nurses Global Summit and the 11th International Nurses Conference was planetary health in January 2018.

UNILA presented on the links between lifestyle medicine and planetary health at the First Brazilian Conference of Lifestyle Medicine.
PHA Members

Adventures Scientists
African Population and Health Research Council
Alliance of Nurses for Healthy Environments
American Geophysical Union
American Public Health Association
Australian National University School of Regulation and Global Governance (RegNet)
Animal & Human Health for the Environment And Development (AHEAD)
Art of Change 21
Action for Social Development and Environmental Protection Organization (ASDEPO)
Barcelona Institute for Global Health (ISGlobal)
Ben-Gurion University of the Negev
Bioversity International
Blue Ventures
BREATHE-Africa
Brighton and Sussex Medical School (BSMS)
Brunel University London
California Academy of Sciences
Canadian Association of Physicians for the Environment
Cary Institute of Ecosystem Studies
Center for International Forestry Research (CIFOR)
Center for World Indigenous Studies
Centre for Sustainable Healthcare
Centre ValBio, Stony Brook University
Chinese Academy of Sciences Institute of Urban Environment
Chinese University of Hong Kong
Circumpolar Health Research Institute
Climate for Health
Columbia Climate and Health Program
Commonwealth Youth Health Network
Cornell University College of Veterinary Medicine
Cornell University Master of Public Health Program
Cyprus International Institute for Environmental and Public Health
Dartmouth University
Devon Local Nature Partnership
Doane University Institute for Human and Planetary Health
Duke Kunshan University
The Earth Institute, Columbia University
EcoHealth Alliance
Ecovet Global
Environment Protection Authority, Victoria
Ethio Wetlands and Natural Resources Association
George Mason Univ. Dept of Environmental Science and Policy
Emory Global Health Institute
The Global Health Academy, The University of Edinburgh
Global Health Asia Institute
Global Health Institute, Duke University
Global Health Institute, University of Wisconsin-Madison
Global Medic Force
GlobalPDX
Goddard College
Grantham Research Institute on Climate Change and the Environment
Gund Institute for the Environment
Haverford College
Harvard T.H. Chan School of Public Health
Harvard University Center for the Environment
Health In Harmony
ICES Foundation
ICLEI
Institute Bon Pasteur
Institut Pasteur
InterAmerican Center for Global Health (CISG)
International Centre for Diarrhoeal Disease Research, Bangladesh
Khazar University
Kumamoto University
The Lancet
The Lancet Countdown
London School of Hygiene and Tropical Medicine
MacEwan University
Madagascar Health and Environment Research (MAHERY)
Makere University
Mel & Enid Zuckerman College of Public Health, University of Arizona
Miller School of Medicine, Department of Public Health Sciences, University of Miami
Ministère de la Santé Publique, Madagascar
Monash Sustainable Development Institute
NatureServe
New York University Langone Health (Department of Population Health)
Nexleaf Analytics
Nottingham University School of Health Sciences
O’Neill Institute for National and Global Health Law, Georgetown University
Ohio State University Global One Health Initiative
OHSU-PSU School of Public Health
PHA Members

One Health Platform
Organization for Tropical Studies
Pathfinder International
PHAA
PHE Ethiopia
Prince Albert II of Monaco Foundation
PIVOT
Population Media Center
Population Reference Bureau
Population & Sustainability Network
Primate Conservation Alliance
Pure Earth
Royal Holloway University of London
Sapienza University of Rome
School of Earth, Society and Environment,
University of Illinois at Urbana-Champaign
Seacology
SMaSH
Smithsonian National Museum of Natural History
Stanford Center for Innovation in Global Health
Stockholm Environment Institute
Stony Brook Global Health Institute
SUNY Downstate Medical Center, School of Public Health
SweetLab
Thammasat University
Think Upstream
Time + Tide Foundation
Tokyo Medical and Dental University
Transition Earth
Tufts Institute of the Environment
UNILA
UC Davis School of Veterinary Medicine, One Health Institute
University of California Global Health Institute,
Planetary Health Center of Enterprise
UCSF Institute for Global Health Sciences
University of Copenhagen, School of Global Health
University of Ghana
University of Milan Gaia 2050
University of Minnesota School of Nursing
University of New England
University of Reading
University of Rochester
University of Sao Paulo
University of Sydney
University of Technology Sydney
University of Toronto Dalla Lana School of Public Health
University of West Indies
University of Wollongong
United Nations Foundation
United Nations University International Institute for Global Health
University of Washington School of Public Health
Urban Health and Wellbeing: a Systems Approach (ICSU)
US Fish and Wildlife Service
Vital Strategies
Wildlife Health Australia
World Federation of Public Health Associations (WFPHA)
World Federation of Academic Institution for Global Health (WFAIGH)
Yale Climate Change and Health Initiative
Yale School of Nursing
Zenab for Women in Development
Stay engaged:

Attend the Planetary Health Annual Meeting, September 4-6, 2019 and participate in the PHA membership meeting on September 4.
www.planetaryhealthannualmeeting.org

Engage in the Clinicians for Planetary Health initiative.
www.planetaryhealthalliance.org/clinicians

Join the planetary health online community.
www.planetaryhealthalliance.org/planetary-health-online-community

Encourage students and next generation leaders to get involved in the Planetary Health Emerging Scholars Network.
www.planetaryhealthalliance.org/emerging-scholars

Get involved in planetary health education, sharing resources with other educators and joining one of the planetary health education working groups.
www.planetaryhealthalliance.org/education

Submit your latest updates in research, education, policy, and other efforts to display on the interactive map on our website and share in our newsletter.
Email us at pha@harvard.edu

Share an idea for a guest blog post.
www.planetaryhealthalliance.org/blog
Thank you for your engagement in the Planetary Health Alliance