







Sheina Koffler
Andre Luis Acosta
Filipi Miranda Soares
Antonio Mauro Saraiva
(Editors)

2021 Planetary Health Annual Meeting and Festival Book of Abstracts

Planetary Health for All: Bridging Communities to Achieve the Great Transition



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Great Transition



São Paulo
2022

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Introduction

Planetary Health is a solution oriented transdisciplinary field and a global movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth. A core insight of the field is that the current Earth crisis is so extensive that it is now driving a global humanitarian crisis ([Planetary Health Alliance © 2022](#)).

The nature of our current problems, with global and local implications, requires that voices from all geographies, genders, and cultures be heard, and that those people be involved in the Planetary Health Alliance (PHA).

With that in mind, the PHA proposed that the 4th Planetary Health Annual Meeting (PHAM2021) would be hosted for the first time in the Global South. After a selection process, the University of São Paulo (USP) was chosen to host the PHAM2021, in the city of São Paulo, Brazil.

USP and PHA worked together to develop the program. The meeting motto reflects the overall concept: Planetary Health for all - bridging communities to achieve the Great Transition. Also on our minds was a sense of urgency to promote actions, as the Earth crisis continues to intensify all around the globe. Then came the COVID-19 outbreak to emphasize the importance of spreading the word about PH as a comprehensive framework to understand our current situation and to promote change.

Intended to be held in-person at the USP main campus, we had to shift to a virtual meeting due to the pandemic. We took that as an opportunity to expand the program across an entire week, to declare the last week of April Planetary Health Week, and call our event PH Meeting and Festival, including arts sessions in the program, as arts are an important way to connect people around PH. Our audience increased tremendously, while lowering our environmental footprint: we had more than 5,000 registrants from 130 countries.

The narrative of the event was especially tailored to be aligned with the underlying event concept, bringing foundations of PH - values and knowledge, and PH in action in the private sector, government and civil society. Each of them was the main theme of a day that week.

Finally, we felt it was time for the global PH community to issue a call-to-action for a deep change and urgent response: the [São Paulo Declaration on Planetary Health](#) was developed openly and collaboratively by the global community with assistance from the United Nations Development Program and was released after the event.

At the end, and after all the hard work, we felt very satisfied with the results, the ample participation, and with an innovative event that will certainly inspire the next editions.

Antonio Mauro Saraiva
University of São Paulo

Marie Studer
Planetary Health Alliance

Sam Myers
Planetary Health Alliance

Acknowledgments

Planetary Health is a broad, complex, and challenging concept. To achieve the Great Transition and secure the future of our planet, a community effort is needed, with each one contributing with their knowledge, skills, and, of course, good will. The success of the Planetary Health Annual Meeting and Festival 2021 highlighted the commitment of the Planetary Health community, despite the global crisis of the COVID-19 pandemics. Hence, we would like to warmly thank all of those who devoted their time to build this remarkable conference and contributed significantly to the Planetary Health network.

We thank the University of São Paulo (USP), which hosted the event for the first time in the Global South, bringing innovation, professionalism and joy, while honoring the traditional peoples from Brazil. We would like to specifically thank the President of USP Vahan Agopyan, Provost of Research Sylvio Roberto Accioly Canuto, and the USP Institute of Advanced Studies Director, Guilherme Ary Plonski.

We thank the Planetary Health Alliance, which also hosted the event and brought a strong commitment with equity, diversity of representation, besides building a solid background to achieve the Great Transition. We especially thank the Harvard T.H. Chan School of Public Health Dean Michelle Williams.

Nothing would be possible without the amazing team behind and in front of the scenes and we thank all the organizing committee members: Antonio Mauro Saraiva, Braulio Ferreira de Souza Dias, Carlos Faerron, Daniela Vianna, Nicole de Paula, Howard Frumkin, Jeremy Pivor, Joanna Wagner, Mandeep Dhaliwal, Marcia Chame, Marie Studer, Max Zimberg, Nicole Redvers, Paulo Saldiva, Rebeca Leite Camarotto, Sam Myers, Teddie Potter, Thelma Krug, Ana Paula Magalhães, Andre Luis Acosta, Arielle Blacklow, Bruno Albertini, Maria Cristina Vidal Borba, Eneus Trindade Barreto Filho, Fernando Xavier, Filipi Miranda Soares, Giovanna Mylena Honorato, Jailson Leocadio, Marcelo dos Santos Marcelino, Matthew Smith, Raquel Santiago, Sheina Koffler, Skyrats, and Thais Presa Martins.

We also thank Ricardo Chade and Fernando Farias, from InfService, who worked close to our team to provide a complete online platform where the conference took place, ensuring efficient communication and networking among the participants throughout the globe.

We thank Maria Cristina Vidal Borba, the translator team from Gama! Traduções e Interpretações coordinated by Gabriela Slaviero (Marly Moro, Renata Santos Silva Laureano, Silvia Dias Peres, Marisa Kazue Shirasuna, Maria do Carmo Garcia Carballal, Sylvie Giraud, Leslie Benzakein, Joana Andrea Martins, Lan Hui Fen, Vilson Yao), Rafael Borsanelli and all the Institute of Advanced Studies staff, the Planetary Health Brazilian Club, the Brazilian Ambassadors on Planetary Health, and the Planetary Health Campus Ambassadors for their contributions and support to our event.

Finally, we thank all the participants, for sharing their expertise and time with us. We hope all had as constructive experience as we did. Planetary Health relies on our actions and this community gives us the hope that we will reach a better future, committed to the conservation of ecosystems integrated with human societies, promoting ethics and equity in all instances, and ensuring that our planet will thrive with all its inhabitants.

This book of abstracts gathers the main contributions of this conference. Enjoy!

Sheina Koffler, André Luis Acosta & Filipi Miranda Soares

University of São Paulo

About the event

While the world was reporting losses due to the COVID-19 pandemic, a group of researchers from the Universities of Harvard and of São Paulo worked towards the organization of an international event, seeking to discuss alternatives for the post-COVID world. With technology as an ally, the joint effort resulted in holding the fourth and largest Planetary Health Annual Meeting of the Planetary Health Alliance – the first to take place not only in Brazil, but also in the Global South. Our thanks to all the participants!

The 2021 Planetary Health Annual Meeting & Festival (PHAM 2021), April 25-30, had more than 5,000 registrants from 130 countries, allowing the central theme “Planetary Health for All: Uniting Communities to Achieve the Great Transition” to become possible. Previous meetings took place at Harvard (2017), Edinburgh (2018) and Stanford (2019) Universities.

During the pre-event and on the five days of the Conference, one keynote address, nine panels, five interview sessions, 24 lightning talks, and more than 90 poster presentations were held. Of the 84 speakers heard, 60% were women. The sessions were simultaneously translated from English into Portuguese, Spanish, French and Mandarin.

The themes of the Conference involved the fundamental human values of planetary health (Day 1); knowledge of planetary health (Day 2); discussions on how to put planetary health into practice, with an emphasis on 21st century economies (Day 3); governance and international cooperation (Day 4); social movements and social change (Day 5). At the opening ceremony, there was the launch of the video “The Promise of Planetary Health”, subtitled in Portuguese.

In addition to the Conference, the 1st Planetary Health Week took place, with 54 parallel events and 22 artistic and cultural activities gathered at the Festival. Workshops, symposia, panels and debates were added to international attractions in music, dance, yoga, gastronomy, graffiti and poetry, as well as presentations by Brazilian indigenous peoples. All the content will be available on the virtual platform for one year.

Daniela Vianna

University of São Paulo

Thaís Presa Martins

Federal University of Rio Grande do Sul

Posters and Lightning Talks

Soliciting original presentations for the conference involved many steps of abstract review and adjudication. Abstracts were submitted online for both research projects (original scientific contributions) and projects (education, community, art or policy programs or organizations). Research abstracts were subjected to two rounds of review to determine whether they should be invited to participate and, if so, whether they should present as a poster or lightning talk. In the first round of review, each abstract was scored by two reviewers who were blinded to the authors' names and affiliations. Reviewers gave a grade of 0-10 to each abstract: 0-8 for scientific merit and 0-2 for style/grammar. The highest scoring abstracts in each thematic area were then sent to the second review stage, whereby subject-matter experts offered recommendations of their relevance and broad interest. Finally, a Planetary Health Alliance organizing committee reviewed the recommendations and scores to make a final decision on which five abstracts in each thematic area would be offered lightning talks, and the remaining were invited to present as a poster. Meanwhile, project abstracts were subjected to a single round of review and judged on whether the project or idea was entirely theoretical or had begun being implemented; all that were invited to participate were assigned poster presentations. After the reviewing process, the conference reached the mark of 116 abstracts presented at the PHAM 2021, highlighting ongoing frontier studies on Planetary Health by research and practitioner groups around the globe. Each participant provided a pre-recorded video, text abstract, and a poster file, allowing asynchronous interaction among participants during the conference. Twenty four abstracts were selected for the Lightning Talk, which sparked a thought-provoking discussion about their findings, in a live session led by experts in each respective research field. Ninety two abstracts were presented as posters in three sessions during the event, including research (61) and projects abstracts (31). In addition, 23 abstracts were selected for publication in a special issue in the renowned journal *The Lancet Planetary Health*. All the abstracts are published in this book, as well as links to access the videos and an [appendix](#) with all posters, in recognition of their significant contribution to Planetary Health.

Matthew Smith

Harvard University

Sheina Koffler

University of São Paulo

André Acosta

University of São Paulo

Side events and festivals

The PHAM 2021 program provided a space for parallel events to kindle discussions on the theme, involving different types of expertise and countries. The events were divided into Side events, focused on conversation rounds and discussion groups, and Festivals, focused on the experiences had. Distributed over the five days of the event, 52 side events and 24 festivals were held. The Side Events approached scientific topics of global trends, such as Climate Change, Sustainability, Citizen Science, Mental Health, Pandemic Covid-19, and many others. The Festivals brought voice to different communities to express their actions and about Planetary Health, such as their struggle to protect indigenous lands, to enable agroecology as an environmentally friendly system for food production, regeneration of rainforests, just to name a few. Another highlight of these events and festivals was the networking between different countries seeking to strengthen the Planetary Health Alliance's effort making PHAM a truly global event with positive impacts on the different stakeholders. Each of the side events had the collaboration of a team of speakers on specific topics, with a moderator conducting the session, most of them live. At the Festivals the organizers were asked to record their presentations on video for presentation on YouTube and on the PHAM Platform, for permanent availability. Considering the experience, the satellite events proved to be an important tool to involve different communities around the world in the discussion of Planetary Health, and an incentive to similar events in other conferences that address such relevant themes. To the organizers, speakers, and audience of the PHAM 2021 side events and festivals, a huge thank you for lightening the conference with your participation. We look forward to seeing you all next year!

Filipi Miranda Soares

University of São Paulo

Raquel Santiago

Federal University of Goiás

São Paulo Declaration on Planetary Health

The São Paulo Declaration on Planetary Health (SPD) was produced by the planetary health community at the 2021 Planetary Health Annual Meeting (PHAM), concluding with a global consultation of about 350 participants from 70+ countries supported by UNDP. It launched on October 6th in The Lancet with a virtual event just before the 2021 COP15 biodiversity summit and COP26 climate change negotiations featuring guest speakers including Achim Steiner, Dr. Nicole de Paula, Dr. Donald Li, Hindou Oumarou Ibrahim, and Paul Polman. Three organizations conducting planetary health work on-the-ground also presented their work. The SPD outlines actions necessary to achieve the Great Transition for 19 sectors. It is available in the 6 official languages of WHO, plus Portuguese and Japanese. Over 325 organizations from more than 50 countries are signatories (~50% from LMICs). 71% of these signatories are not yet PHA members, which offers exciting potential to build the Alliance community. Signatories provided case studies for the PHA website, and contributed to a video inviting others to sign on.

Jeremy Pivor

Harvard TH Chan School of Public Health

Conference Organizing Committee (Program Committee & Organizing Team)



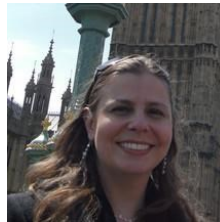
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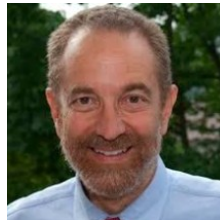
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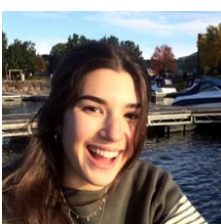
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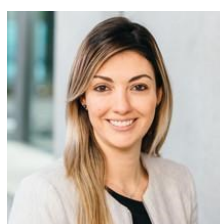
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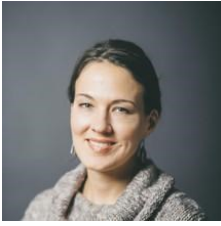


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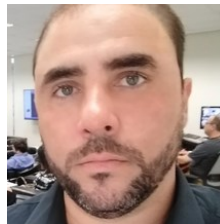
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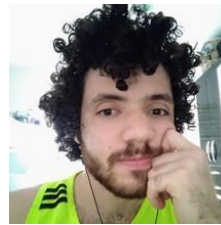
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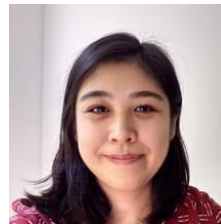
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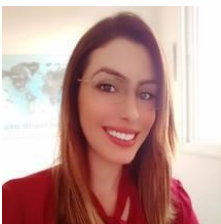
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Thais Presa Martins
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Conference program

Pre-Conference – Sunday, April 25th

Planetary Health Alliance Member Networking Day

Objective: Planetary Health Alliance community and program building

11:00 - 13:00	PHA Membership Meeting
13:30 - 15:00	<u>PHA Regional Hubs 2.0 Introduction & Launch</u>
15:30 - 17:00	Clinicians for Planetary Health (C4PH) - Trusted Voices, Trusted Message
17:30 - 19:00	<u>Hylo Session</u>

Day 1 – Monday, April 26th

Foundational values for Planetary Health

Objective: Bridging communities to promote planetary health

10:45 - 11:40	<u>Opening Ceremony</u>
12:00 - 12:50	<p>Keynote Session - <u>Towards the Great Transition: a value-driven approach</u></p> <ul style="list-style-type: none"> ● Dr. Robin Wall Kimmerer Distinguished Teaching Professor of Environmental Biology, Center for Native Peoples and the Environment at the SUNY College of Environmental Science and Forestry in Syracuse, NY
13:00 - 14:00	<p>Panel - <u>The change we need must be based on shared values</u></p> <p>Moderator</p> <ul style="list-style-type: none"> ● Mary Evelyn Tucker, Senior Lecturer and Research Scholar at Yale University <p>Panelists</p> <ul style="list-style-type: none"> ● Karena Gore, Founder and director of the Center for Earth Ethics (CEE) at Union Theological Seminary ● Lucy Mullenkei, Executive Director of the Indigenous Information Network (IIN) ● Jera Poty Guarani, Brazilian Indigenous Leader ● Nainoa Thompson, President, Polynesian Voyaging Society
14:10 - 14:50	<p>Interview - <u>What does it mean to be happy in the 21st Century?</u></p> <p>Interviewer</p> <ul style="list-style-type: none"> ● Herton Escobar, Journalist, Special Reporter at the USP <p>Interviewees</p> <ul style="list-style-type: none"> ● Dr. Julia Kim, Program Director at the Gross National Happiness (GNH) Centre in Bhutan ● Dr. John Helliwell, Professor Emeritus and Senior Fellow, University of British Columbia
14:50 - 15:00	<p>Closing Remarks</p> <p>Antonio Saraiva, Chair of PHAM 2021</p>
15:10 - 15:50	<p>Science Lightning Talks – <u>Mental Health</u></p> <p>Moderator</p> <ul style="list-style-type: none"> ● Dr. Marco Scanavino, Professor, Department of Psychiatry, University of São Paulo <p>Presenters</p> <ul style="list-style-type: none"> ● Ans Vercammen ● Emily York ● Katharine Zywert ● Ronan Foley ● Viveka Guzmán

Day 2 – Tuesday, April 27th
Knowledge for Planetary Health

Objective: Fostering science, technology, and education for planetary health

09:40 - 10:40	<u>Poster Session 1</u>
11:00 - 11:10	Opening Remarks
11:10 - 12:10	Panel - <u>Planetary Health, Transdisciplinarity and Academic Careers: new structures for a new science and education</u> Moderator <ul style="list-style-type: none">● Dr. Antonio Saraiva, President, Research Committee, Planetary Health Study Group, Institute for Advanced Studies, IEA-USP Panelists <ul style="list-style-type: none">● Agnes Binagwaho, MD, M(Ped), PhD, University of Global Health Equity (Rwanda)● Dr. Connie White Delaney, PhD, RN, FAAN, Professor and Dean, University of Minnesota (UMN) (US)● Dr Corinne Reid, Provost (interim) and Deputy Vice-Chancellor Research at Victoria University (Australia)● Melvine Anyango Otieno, University of Eldoret (Kenya)
12:20 - 13:20	Panel - <u>How to promote planetary health science and education: a funder's perspective</u> Moderator <ul style="list-style-type: none">● Braulio Ferreira de Souza Dias, Ecology Professor, University of Brasilia (UnB), former Executive Director of the Convention on Biological Diversity of the United Nations, CBD-UN Panelists <ul style="list-style-type: none">● Aileen Lee, Chief Program Officer, Environmental Conservation, Gordon and Betty Moore Foundation● Madeleine C. Thomson, Interim Head - “Our Planet, Our Health”, Senior Science Lead, Wellcome Trust● Luiz Eugenio Araujo de Moraes Mello, Scientific Director, FAPESP
13:30 - 14:20	Interview - <u>Tools for Planetary Health Education</u> Interviewer <ul style="list-style-type: none">● Carlos Faerron Guzmán, Associate Director, PHA, Co-founder and current director of the InterAmerican Center for Global Health (CISG) Interviewees <ul style="list-style-type: none">● Martin Herrmann, President, KLUG - German Alliance Climate Change and Health● Mayara Floss, Family Physician, WONCA Member, and responsible for the Telessaúde-RS PH Online Course● Omnia El-Omrani, Liaison Officer for Public Health, International Federation of Medical Students' Association (IFMSA – Egypt)
14:20 - 14:30	Closing Remarks Antonio Saraiva, Chair of PHAM 2021
14:40 - 15:20	Science Lightning Talks – <u>Food and Nutrition</u> Moderator <ul style="list-style-type: none">● Dr. Aline Martins de Carvalho, Professor, Faculty of Public Health, USP, and responsible for Sustentarea Presenters <ul style="list-style-type: none">● Anna Claudia Dilda● Canxi Chen● Liza Barbour● Rosemary Green● Simon Lloyd

Day 3 – Wednesday, April 28th**How can Planetary Health-based economies flourish in the 21st century****Objective: Understanding how planetary health economies can flourish in the 21st century**

09:40 - 10:40	<u>Poster Session 2</u>
11:00 - 11:10	Opening Remarks
11:10 - 12:10	<p>Panel - <u>New businesses for a new society</u> Moderator</p> <ul style="list-style-type: none"> ● John Fullerton, Founder and President, Capital Institute <p>Panelists</p> <ul style="list-style-type: none"> ● Bruce Friedrich, Executive Director and Co-founder, The Good Food Institute ● Kotchakorn Voraakhom, CEO and Founder, Landprocess/Porous City Network ● Silvia Lagnado, Sustainable Growth Officer, Natura&Co ● Tom Szaky, Founder and CEO Terracycle and Loop: Zero Waste Platform
12:20 - 13:10	<p>Panel - <u>The role of businesses in leading the protein revolution</u> Moderator</p> <ul style="list-style-type: none"> ● Diane Holdorf, Managing Director, Food & Nature, World Business Council for Sustainable Development (WBCSD) <p>Panelists</p> <ul style="list-style-type: none"> ● Ethan Brown, President & CEO, Beyond Meat ● Bruce Friedrich, Executive Director and Co-founder, The Good Food Institute ● Thomas Jonas, Co-Founder and CEO of Nature's Find
13:20 - 14:00	<p>Interview - <u>Valuing and measuring economic success: what is next?</u> Interviewer</p> <ul style="list-style-type: none"> ● Jonathan Rose, President, Jonathan Rose Companies <p>Interviewees</p> <ul style="list-style-type: none"> ● Dr. Riane Eisler, President, Center for Partnership Studies ● Will Evison, Director, Sustainability Strategy, PwC (UK)
14:00 - 14:10	<p>Closing Remarks Antonio Saraiva, Chair of PHAM 2021</p>
14:20 - 15:00	<p>Science Lightning Talks - <u>Non-Communicable Diseases</u> Moderator</p> <ul style="list-style-type: none"> ● Dr. Diana Lynne Madden, Associate Dean, School of Medicine, University of Notre Dame, Sidney, Australia <p>Presenters</p> <ul style="list-style-type: none"> ● Ana Ortigoza ● Anastasia Montgomery ● Aubrey Doede ● Miriam Marlier ● Nilanjan Bhor

Day 4 – Thursday, April 29th**Governance & Cooperation****Objective: Applying the planetary health framework to reinvigorate national & multilateral cooperation**

09:40 - 10:40	<u>Poster Session 3</u>
11:00 - 11:10	Opening Remarks
11:10 - 12:10	<p>Panel - <u>Planetary health diplomacy: saving multilateralism to save ourselves</u> Moderator</p> <ul style="list-style-type: none"> ● Dr. Nicole de Paula, Founder of the Women Leaders for Planetary Health; and Fellow, Institute for Advanced Sustainability Studies (IASS)-Potsdam, Germany <p>Panelists</p>

	<ul style="list-style-type: none"> ● Rolph Payet, Executive Secretary, Secretariat of the Basel, Rotterdam, and Stockholm Conventions ● Sandrine Dixson-Declève, Co-President, Club of Rome ● Stefanos Fotiou, Director of the Environmental and Development Division at UN ESCAP (Economic and Social Commission for Asia and the Pacific)
12:20 - 13:20	<p>Panel - <u>From theory to practice - how to implement PH solutions on the ground</u> Moderator</p> <ul style="list-style-type: none"> ● Cecilia Githaiga, GIZ ABS Capacity Development Initiative; Technical Advisor, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) <p>Panelists</p> <ul style="list-style-type: none"> ● Jane Davidson, Pro-Vice-Chancellor Emeritus, University of Wales Trinity Saint David, and Chair of the Wales Inquiry of the Food, Farming and Countryside Commission ● Dr. Vik Mohan, Medical Doctor, Director of Community Health at Blue Ventures Conservation ● Dr. Virgilio Viana, General Director of the Sustainable Amazon Foundation (FAS)
13:30 - 14:10	<p>Interview - <u>Leadership and PH lens in governance and policy</u> Interviewer</p> <ul style="list-style-type: none"> ● Dr. Teddie Potter, Director of Planetary Health, University of Minnesota School of Nursing <p>Interviewees</p> <ul style="list-style-type: none"> ● Dr. Courtney Howard, MD, Emergency Physician, Clinical Associate Professor, Cumming School of Medicine, University of Calgary, former President of the Canadian Association of Physicians for the Environment (CAPE), sits on the board of the Canadian Medical Association, the Editorial Advisory Board of the Lancet Planetary Health, and the steering committee of the PHA. ● Dr. Sandeep Maharaj, Associate Dean Distance Education, Planning and Projects, University of the West Indies, and Director of the Entrepreneurship and Business Transformation Office for the Faculty at the UWI STA.
14:10 - 14:20	<p>Closing Remarks Antonio Saraiva, Chair of PHAM 2021</p>
14:30 - 15:10	<p>Science Lightning Talks – <u>Infectious Diseases</u> Moderator</p> <ul style="list-style-type: none"> ● Felicia Keesing, Ecologist, and educator in the Bard College, Annadele, New York <p>Presenters</p> <ul style="list-style-type: none"> ● Andrea Lund ● Isabel Fletcher ● Rosa von Borries ● Ryan Harp ● Sophie Lee
<p>Day 5 – Friday, April 30th Social Movement & Social Change Objective: Civil society and movement building</p>	
11:00 - 11:10	<p>Opening Remarks Antonio Saraiva, Chair of PHAM 2021</p>
11:10 - 12:10	<p>Panel - <u>Civil society taking the lead</u> Moderator</p> <ul style="list-style-type: none"> ● Dr. Nicole de Paula, Founder of the Women Leaders for Planetary Health; and Fellow, Institute for Advanced Sustainability Studies (IASS)-Potsdam, Germany

	<p>Panelists</p> <ul style="list-style-type: none"> ● Eliana Sousa Silva, Founder and Director, Brazilian NGO Redes da Maré ● Dr. Nicole Redvers, Assistant Professor - Family & Community Medicine- INMED - School of Medicine and Health Sciences University of North Dakota ● Wanjira Mathai, Vice-President and Regional Director for Africa, World Resources Institute
12:20 - 13:20	<p>Panel - <u>Activating the mainstream: Our urgent planetary health mission to protect the future</u></p> <p>Moderator</p> <ul style="list-style-type: none"> ● Sarah Finnie Robinson, Senior Fellow, Boston University, Founding Director, The 51 Percent Project <p>Panelists</p> <ul style="list-style-type: none"> ● Hindou Oumarou Ibrahim, Co-Chair of the International Indigenous Peoples Forum on Climate Change ● Justin Worland, Time Magazine, senior correspondent covering climate change and the intersection of policy, politics, and society ● Herton Escobar ● Herton Escobar, Science and environmental journalist, Reporter for the University of São Paulo Journal, and also for Science Magazine (AAAS)
13:20 - 13:50	<p>Vision – São Paulo Declaration on Planetary Health</p>
13:50 - 14:00	<p><u>Closing Ceremony</u> Antonio Saraiva, Chair of PHAM 2021, and Sam Myers, PHA</p>
14:10 - 14:50	<p>Science Lightning Talks – <u>Displacement, Disruption, and Conflict</u></p> <p>Moderator</p> <ul style="list-style-type: none"> ● Dr. Eduardo Viola, Full Professor of the Post-Graduate Program in International Relations of the University of Brasília (UnB) and Senior Researcher Fellow of the Institute for Advanced Studies at USP <p>Presenters</p> <ul style="list-style-type: none"> ● Byomkesh Talukder ● Charles Ssemugabo ● Cheryl Margoluis ● Laura J Brown ● Nilanjana Ganguli

Note: for side events and festivals, see Part IX of this book.

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PART I: Mental Health



Changing worlds: Young people's psychological responses to climate change during COVID-19 and the impact on mental health

Emma Lawrance, Neil Jennings, Ans Vercammen, James Diffey, Rhiannon Thompson, Philippa Batey, Vasiliki Kioupi

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Background: The WHO has recognised climate change as a significant threat. Despite increasing scientific and policy interest in climate-related health impacts, the mental health burden remains relatively under-researched. It is hypothesised that even in geographic locations where people have not directly experienced severe negative effects, awareness of global impacts and future uncertainties may result in psychological distress. Young people appear to be particularly vulnerable to this. **Methods:** To gain an understanding of the range of psychological responses to climate change in young people (16-24 years) in the UK, we conducted an online survey (n=530) in August-September 2020, targeting a socio-demographically diverse sample. We queried respondents on their experiences, feelings, mental health, and sense of agency with respect to climate change and the COVID-19 pandemic. The survey was co-created with a Young Persons Advisory Group. **Findings:** Young people were concerned about the effects of both crises on their future, worrying 'frequently' about COVID-19 (60%) and climate change (40%). Those who reported no/low pre-existing anxiety perceived climate change as more concerning than COVID-19, while those who had experienced anxiety were showing similarly elevated levels of distress in relation to both crises. Especially in the context of climate change, the experience of negative emotions (shame, guilt) did not appear to be a barrier to agency. **Interpretation:** The young people we surveyed showed strong emotive responses and enduring concern to the threats posed by climate change, even in the context of an arguably more pressing and disruptive public health emergency (COVID-19). Distress over climate change did not appear to simply be an exacerbation of pre-existing anxieties, but the concurrent crises may put additional strain on those already experiencing anxiety. Further research is needed to determine whether emotional engagement in the issue could be leveraged to build resilience and support greater youth agency.

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Social resilience and climate change: findings from community listening sessions

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Nurturing health across social-ecological scales: Investigating how therapeutic gardening, care farming, and the soil health movement can improve human and planetary health

Katharine Zywert

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Background: Sustaining flourishing human civilizations into the long-term future will require paradigmatic systems changes that enable societies to meet basic human needs within planetary boundaries. Health systems can contribute to sustainability transitions by shifting resources toward low-throughput, community-based initiatives that generate co-benefits for physical and mental health, social inclusion, and ecological regeneration. This study aims to demonstrate how approaches to health that combine gardening or farming with health and social care can improve human and planetary health outcomes across social-ecological scales. Methods: The study draws on 14 semi-structured interviews conducted between 2017 and 2020 with practitioners working in the fields of care farming, therapeutic gardening, and the soil health movement, complemented by a comprehensive literature review. Findings: Practitioners in the soil health movement report that nurturing a biodiverse, living soil sponge makes the land more resilient to climate change, increases human nutrition, sequesters atmospheric carbon, and improves the water cycle. Care farmers show that contributing to a working farm can improve the physical and mental health of participants, build social connections, create opportunities for people with long-term disabilities and mental illnesses to engage in meaningful work, and regenerate local landscapes. Integrating gardens into healthcare facilities can similarly forge social bonds and facilitate connections to nature that enhance healing and improve wellbeing. Private and community gardens can also meet local needs for healthy food, herbal medicines, social connection, mental health, physical activity, and meaning, particularly in times of uncertainty. Interpretation: Insights from diverse fields of practice that combine cultivating the land with health and social care demonstrate the significant potential of such initiatives to improve human health, build inclusive communities, and regenerate ecosystems. With the imperative to scale up practices that achieve health outcomes across scales at low ecological and economic costs, these approaches could become a core component of post-growth health systems.

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The role of nature and the built environment for health and well-being during COVID-19: A mixed-methods analysis from the GreenCOVID study

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Background: Globally, public health efforts to contain the COVID-19 pandemic have confined individuals to their home or reduced catchment areas. Within this context, proximate environmental factors can be particularly influential for well-being and mental health outcomes. The aim of this study is to describe the associations of well-being and mental health with characteristics of the immediate natural and built environment, and to explore how adults in Ireland perceived and experienced nature during the first wave of the COVID-19 pandemic. **Methods:** A convergent mixed methods study is being conducted utilizing data collected through the GreenCOVID online survey from June to July 2020 (n=243; mean age 43+16; female 72%). Multiple linear regression is used to explore associations of well-being and mental health with home views, outdoor spaces at home, household issues, number of bedrooms and number of co-habitants. An ongoing thematic analysis explores participants' perceptions and experiences with nature during lockdown and if/how these related to their mental health and well-being. **Findings:** Household problems are significantly associated with lower well-being scores (b=-9.78, CI 95% - 15.675 to -3.885) and increased likelihood of mental disorders (b= 0.583, CI 95% 0.284 to 0.889). Preliminary results show that participants perceive that diverse contact with the outdoors, such as views to green and blue spaces, contributed to coping with restrictions. **Interpretation:** Our preliminary findings indicate that adults in Ireland perceive that contact with nature positively influenced their well-being and mental health during the first wave of the COVID 19 pandemic, which was facilitated by certain household characteristics.

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‘Catch the sun coming up, wave it off as it goes down’: A qualitative exploration of later life therapeutic landscapes during the first wave of the COVID-19 pandemic

Viveka Guzmán, Gabriela Bustamante, Lindsay Kobayashi, Jessica Finlay

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Background: Therapeutic landscapes can function as spaces of sanctuary and retreat often offering simultaneous opportunities to exercise and interact with others. During the COVID 19 pandemic, movement restrictions to contain the virus which can lead to significant changes in everyday life have been more stringent for populations in risk of developing severe symptoms, such as older adults. The aim of this study was to advance the concept of therapeutic landscapes by exploring how contact with nature and outdoor spaces influenced older adults’ health and well-being during the first months of the COVID-19 pandemic in the US. Methods: A secondary thematic analysis was carried out with data collected between April and May 2020 as part of the COVID-19 Coping Study (n= 6938). A qualitative database was created by screening open-ended questions for keywords related to participants’ experiences, attitudes and behaviours about engaging with outdoor spaces and nature during the pandemic (n=769). Findings: Preliminary results suggest that older adults purposefully engaged with nature in diverse ways, ranging from the household (through garden views and tending potted flowers) to the broader community (talking long walks or photographing wildlife in the local park). Participants appreciated that outdoor spaces provided opportunities for exercising, community engagement and maintaining a routine at a safe physical distance from others, which boosted their social, mental and physical well-being. Interpretation: Understanding the role of nature and outdoor spaces provides opportunities to identify and magnify community and environmental interventions that promote health and well-being of older adults during pandemics and their aftermath.

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PART II: Food and Nutrition



Qualitative Analysis of Action Plans submitted in the Brazilian MOOC on Planetary Health

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Background: The change in individual and collective behavior that contributes to the conservation of the Earth's natural systems is urgent. A recent study shows that climate change leading to extreme events influences human behavior to reduce the emission of greenhouse gases, which in turn reduce the impact on climate change. This model creates a rationale for expecting human behavioral changes to affect the climate sufficiently to significantly reduce future global temperatures. Based on this, we analyzed within the activity proposed by the Brazilian MOOC on Planetary Health what behavioral changes people are more likely to make to impact planetary health. **Methods:** The authors made a Qualitative Analysis of optional action plans submitted in the first edition of the Brazilian MOOC on Planetary Health, offered by TelessaúdeRS-UFRGS. 241 plans were submitted, 231 signed the consent form and two different researchers classified the plans through key words. **Findings:** In a summary analysis by the title of the projects, we found that 81 (35,06%) of the participants' contributions were aimed at interventions that include the entire food system. We highlight the expressive number of action plans for healthy eating, with education in schools, changing menus in school and university cafeterias, changing habits in the family itself, building community gardens and introducing composting in domestic and work environments. **Interpretation:** It seems that food and nutrition interventions can be an acquainted and potent way for individuals and communities to transform the reality of Planetary Health.

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How much can food waste reduction in each country contribute towards global nutritional and environmental sustainability?

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Background: It is challenging for today's food system to feed the increasing population with limited environmental resources, meanwhile significant amounts of food products are wasted at the consumption end. Previous food waste assessments were limited in their nutritional and environmental impact details on a global scale. **Methods:** We first estimated the individual wasted amounts (in grams per capita per day) of more than 200 food items for 151 countries. Then we assessed the environmental impacts associated with food waste using five indicators (greenhouse gas, land, water, nitrogen and phosphorus fertilizers) and nutritional losses using two indicators (wasted nutrient days and wasted daily diets) considering embedded dietary energy and 24 essential nutrients. **Findings:** The global average food waste per capita per year (65 kg by weight) contains 18 healthy diets meaning its embedded nutrients can fulfill the dietary recommended intake (DRI) levels of one person for 18 days. Daily wasted amounts of vitamin C, K, Zinc, Copper, Manganese and Selenium are especially high representing 25-50% of their DRIs. Cereals, fruits and vegetables are the three major food groups contributing the most to wasted nutrients followed by meat, dairy and eggs. Azerbaijan, Armenia, and Georgia along with USA, Canada, Ireland, New Zealand, Austria, Denmark and China had consistently high wasted amounts for most of the nutrients. The embedded environmental footprints account for 7-10% of daily per capita food-related environmental planetary boundaries and are highest for USA, EU, China, East Asia and Pacific and lowest for African and South Asian countries. Nutritional interventions targeting reduction in wastage of cereals, meat, and sugar can lead to environmental savings. **Interpretation:** Our country-specific results identified the global hotspots and pictured the heterogeneity of the food-wasting and associated impacts. This study highlights the different priorities across countries and food groups and calls for effective waste reduction interventions.

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The role of local government authorities in facilitating the uptake of healthy and environmentally sustainable diets: A scoping review.

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Background: Globally, the food system is contributing to poor health, climate change and the depletion of natural resources, threatening our planet's ability to sustain the growing population beyond 2050. Urgent transformation of our food system is critical to achieve many global targets set within Agenda 2030. Such transformation requires a shift in population-level diets, which can ultimately trigger systemic changes to the food supply chain from farm to fork and beyond. **Aim:** This scoping review sought to describe the policy interventions that local governments globally have invested in to facilitate the uptake of healthy and sustainable diet-related practices. **Methods:** First, five databases of peer-reviewed literature were searched for studies which cited policy interventions implemented by local government authorities within 199 signatory cities of the Milan Urban Food Policy Pact (MUFPP). Policy interventions were included if they involved local governments, were dated after 2015 when Agenda 2030 was developed and targeted at least one healthy and sustainable diet-related practice. Second, grey literature was searched to retrieve the most recent policy documentation linked to included interventions. Finally, data were charted to map the strategy options included in each intervention against the MUFPP's monitoring framework. **Findings:** From 2624 screened peer-reviewed studies, 27 met inclusion criteria and cited 36 relevant policy interventions. The diet-related practice most commonly targeted was sourcing food produced using sustainable methods (n =31; 83%). Of the 66 strategy options identified, food procurement policies within public facilities (n=16; 44%), school feeding guidelines (n=12; 33%) and urban agriculture activities for people experiencing disadvantage (n=11; 31%) were most commonly implemented. **Interpretation:** Local government authorities globally are targeting all phases of our food system to shift population diets and trigger broader food system transformation. This research supports existing evidence that with enhanced capacity, local governments can lead action towards global planetary health targets.

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Pathways to "5-a-day": modelling the health impacts and environmental impacts of meeting the target for fruit and vegetable intake in the UK

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Background: Consumption of fruit and vegetables in the United Kingdom (UK) is currently well below recommended levels, with a significant associated public health burden. The UK has committed to reducing its carbon emissions to net zero by 2050, and this transition will require shifts towards plant-based diets. **Objective:** To quantify the health effects, environmental footprints and cost associated with four different pathways to meeting the UK's "5-a-day" recommendation for fruit and vegetable consumption. **Design:** Epidemiological modelling study. Dietary intake data from 4,528 individuals (18,006 food diaries) participating in the UK National Diet and Nutrition Survey (2012/13 2016/17) constituted the baseline diet. The impact of the hypothetical adoption of diets optimized to meet the 5-a-day (400g) recommendation was assessed according to four pathways differing in their prioritization of fruits vs. vegetables and UK-produced vs. imported varieties. Energy content of the modelled diets was held constant and increases in fruit and vegetable consumption were substituted for consumption of sweet snacks and meat respectively. Greenhouse gas emissions (GHGE), blue water footprint (WF), life expectancy and total diet cost associated with the different 5-a-day diets were quantified. **Results:** Achieving the 5-a-day target in the UK could increase average life expectancy at birth by 7-8 months and reduce diet-related GHGE by 6.1 to 12.2 Mt carbon dioxide equivalents/year; blue WFs would change by -0.14 to +0.07 km³/year. Greater reductions in GHGEs were achieved by prioritizing increased vegetable consumption over fruit, while the greatest reduction in WF was obtained by prioritizing vegetable varieties produced in the UK. All the pathways increased diet cost (£0.34-£0.46/day) **Conclusions:** Benefits to both population and environmental health could be expected from consumption pathways that meet the UK's 5-a-day target for fruit and vegetables. Our analysis identifies cross-sectoral trade-offs and opportunities for national policy to promote fruit and vegetable consumption in the UK.

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Climate change, hunger and rural health through the lens of farming styles: an agent-based model to assess the potential role of peasant farming

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PART III: Non-communicable diseases



Association between ambient PM_{2.5} and under-5, infant, and child mortality in Latin America, 2010–15: a longitudinal analysis

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Health Benefits of Electrifying Chicago's Municipal Vehicle Fleet

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Impact of Drought and Airborne Pollutants on Pediatric Asthma Emergency Department Visits in Imperial County, California, USA

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The pediatric population is at a unique and increased risk of immediate and long term negative health effects of asthma from air pollution. 2012-16 marked the worst drought in California, USA, in over a century. Imperial County's landlocked Salton Sea is almost entirely dependent on agricultural irrigation runoff, though the water level has diminished with drought conditions. Lakebed exposure may cause increased airborne particulate matter (PM), exacerbating asthma. Emergency department admissions and diagnosis codes for asthma were obtained for children ages 2-18, alongside population data to create population-weighted ZIP code buffers. Trajectory analysis, dispersion modeling, and meteorological data were used to determine likely PM exposure days. Drought severity data were used to establish a relationship between drought, exposure, and admissions. Conditional Poisson regression was used to determine the risk of Salton Sea dust exposure to asthma and moderating effects of drought. There is a significant relationship between exposure from the Salton Sea and admissions on exposure days (ERR 18.70%, $p=0.012$, 95%CI=3.936–35.623). Moderation analysis for drought indicated no significant effect from two indicators (ERR 1.005%, 95%CI=-0.084–1.111, $p=0.714$; ERR 104.44%, 95%CI=8.44–285.426, $p=0.316$). This indicates the possibility of the Salton Sea's influence on pediatric asthma. The large confidence interval is notable, suggesting additional variables or pollutant sources, which is consistent with the study area, where several factors may contribute to air quality. Drought severity was not a significant moderator in the relationship between exposure and admissions, possibly due to the slow-response impact of drought that could not be captured.

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Air Pollution from Extreme Wildfire Events in California

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Background: Wildfires in western United States have increased in frequency and severity over the past several decades due to climatic and anthropogenic influences. In addition to devastating impacts on the natural environment, climate system, and public safety, wildfire emissions contribute to widespread air pollution that is dangerous to public health. Fires emit tiny particles, or fine particulate matter (PM_{2.5}), that have been linked to negative health outcomes. The objective of this study is to quantify population-level exposure to air pollution from extreme wildfire events in California. **Methods:** We couple satellite-derived wildfire emissions estimates with complementary atmospheric modeling techniques to quantify the contribution of wildfires to surface level PM_{2.5} concentrations. We first explore the contribution of individual large wildfire events to downwind PM_{2.5} concentrations in California and the broader region. We then analyze the impact of all fire emissions across California on daily PM_{2.5} concentrations using the GEOS-Chem chemical transport model. **Findings:** We first estimate the contribution of extreme wildfire events in California to regional PM_{2.5} pollution in the western U.S. We then compare the influence of the most extreme wildfire events in the extreme 2018 fire season to the 2015-2019 average and map vulnerable populations to air pollution exposure. **Interpretation:** We add to existing research that has demonstrated the growing influence of wildfires on air quality in the western U.S. by focusing on connections connecting specific fire events to downwind air quality impacts. This is critical as wildfire risks are expected to increase with future climate change and population growth.

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Urban Air Pollution and Burden of Non-Communicable Diseases in South Asia: Call for action on social determinants

Nilanjan Bhor

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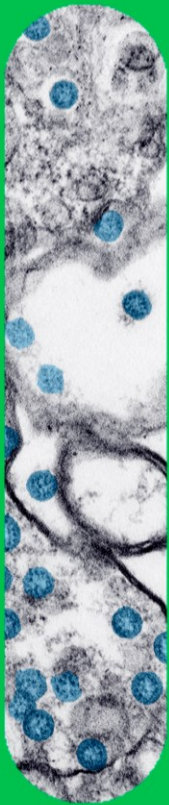
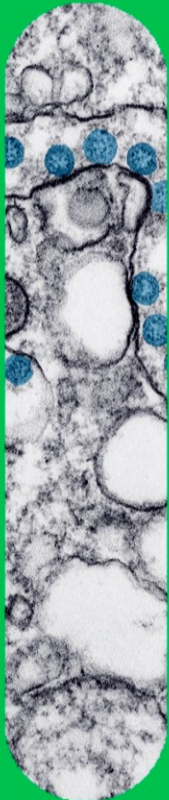
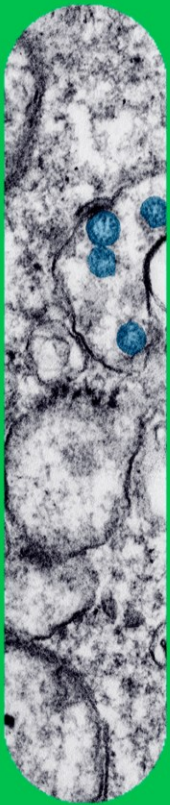
Bhor, N. (2022). Urban Air Pollution and Burden of Non-Communicable Diseases in South Asia: Call for action on social determinants. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (p. 43). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance. <https://doi.org/10.5281/zenodo.6373367>

Background: Air pollution (both ambient and household) significantly heightens the risk of developing cardiovascular and respiratory diseases. South Asian countries, in particular, are affected by severe air pollution and high mortality and disability rates associated with these diseases. The objective of the study is to identify the major factors contributing to urban air pollution and its causal link with Non-Communicable Diseases (NCDs) burden in the South-Asia region. **Methods:** An analysis was performed between the socio-demographic index (SDI) and NCD-specific indicators of South-Asian countries drawn from the Global Burden of Diseases study spanning 1990 to 2017 using machine learning technique. Further, a literature review was performed to identify the sources of air pollution in this region. **Results:** The machine learning-based predictive model showed a positive and strong correlation between SDI and NCD mortality, air pollution mortality, household air pollution and occupational risk burden. The review identified the following sources of air pollution: rapid urbanization and industrialization, and biomass burning as the primary sources; and fossil fuel combustion, re-suspension of dust in residential areas, dust from construction and vehicle movements, road dust as secondary sources. **Implications:** 1. Strengthening urban local government administrations is vital (i) to effectively plan and implement nature-based solutions such as green spaces in cities, which can help regulate urban heat and air pollution, improve NCD behavioral and metabolic risk factors and promote mental health. (ii) to take charge of social determinants of health and act on mitigating the sources of ambient and household air pollution 2. It is essential to include the environmental dimension in the 2008 World Health Organization Social Determinants of Health Framework, which recommended the improvement of daily living conditions as the first of three main recommendations for action.

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PART IV: Infectious diseases



Exposure, hazard, and vulnerability and their contribution to *Schistosoma haematobium* re-infection in northern Senegal

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The effect of environmental degradation and land use change on malaria re-emergence in south Venezuela: a spatiotemporal modelling study

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Disentangling the impact of weather conditions on COVID-19 transmission dynamics: A systematic review

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Background: The effects of weather conditions on SARS-CoV-2 transmission and COVID-19 severity have been extensively studied since the beginning of the COVID-19 pandemic. However, the magnitude and direction of associations between meteorological variables and COVID 19 transmission as well as the underlying mechanisms remain predominantly unanswered. This study aims to evaluate the robustness of statistical modelling analyses that assessed the impact of weather conditions on COVID-19 transmission, to identify robust evidence which can reliably inform policy on the sensitivity of COVID-19 to weather conditions. **Methods:** Peer-reviewed statistical modelling studies, published until November 2020 that assessed effects of temperature and humidity on COVID-19 transmission were systematically reviewed. A scoring robustness tool was developed, examining selected criteria of response, exposure, confounding, uncertainty and limitations. Scores were categorized on a scale from low, medium to high, indicating the extent to which studies could provide reliable evidence. **Findings:** Most studies scored low to medium, primarily because they excluded relevant confounding factors (e.g., population density and age structure) and did not explain uncertainties and limitations (e.g., reporting delays and varying testing capacity). Study findings did not reveal a clear pattern of meteorological influence on COVID-19 transmission, suggesting that a systematic weather influence could not be identified in the early phases of the pandemic. **Interpretation:** Inconsistent findings across studies highlight the need for future analyses employing robust analytical methods to produce reliable and consistent evidence. As the novel virus continues to rapidly spread on a global scale, meteorological signatures might become more apparent at future stages, emphasizing the relevance of pursuing the investigation of the impact of weather on COVID- 19 transmission and the potential for climate information to support the COVID-19 response efforts.

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Towards using climate to increase lead time of a malaria early warning system in Mozambique

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Effect of climate change, connectivity, and socioeconomic factors on the expansion of the dengue virus transmission zone in 21st century Brazil: an ecological modelling study

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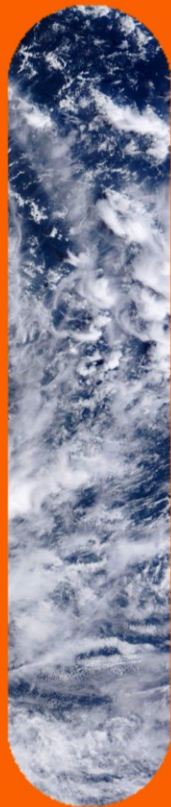
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PART V: Displacement, disruption, and conflict



Water–Food–Energy Nexus Effects on Farmers Health of the Southwest Coastal Agricultural Systems in Bangladesh

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The southwest coastal Bangladesh is often cited as a vulnerable area where the farmers are farming in a unique condition characterised by extreme weather events (e.g., sea level rise, salinity, cyclones, storm surges, floods), coastal erosion, deforestation, upstream water withdrawal, natural resource degradation, rapid land use and land cover change, embankment, and water logging. These farming can be categorised as shrimp farming, semi-integrated (rice + shrimp) and integrated (shrimp + rice + vegetables). Water-Food-Energy nexus of these agricultural systems are playing a vital role to shape the ecological conditions and farmers' health of the southwest coast. Therefore, in this study by using indicators of productivity (yield, diversity, energy, protein) and efficiency (water, energy, land) the water–food–energy nexus of the agricultural systems are compared, and their associate health risks are identified among farmers in four dimensions: calorie intake from self-grown staple food, water borne infectious disease, physical activities and non-infectious diseases. To compare the water–food–energy nexus of the agricultural systems and to understand the health impacts of the agricultural practices among farmers, this study utilizes data from a questionnaire survey, field observations, key informant interviews and focus group discussion. The investigation reveals that all the nexus indicators related to integrated agricultural system are better than the other two systems and with respect to shrimp farming higher percentage of farmers are affected by water-borne infectious disease and the percentage of calories contained in the self-grown food is low for these farmers. Moreover, an integrated systems approach involves the most physical activity. Therefore, this study recommends that special interventions is needed to reduce the health effects in shrimp based agriculture systems for long-term sustainability of the coastal agricultural systems of Bangladesh.

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Health Risks in Our Environment: Urban Slum Youth' Perspectives Using Photovoice in Kampala, Uganda

Charles Ssemugabo, Sarah Nalinya, Grace Bijinzi Lubega, Rawlance Ndejjo, David Musoke

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Background: Due to increasing urbanization, many people find themselves living in slums that expose them to several health risks. We explored urban health risks that fall short of the planetary boundaries in an urban slum in Kampala, Uganda using photovoice. **Methods:** We selected, trained, and assigned ten youth (five females and five males) to take photos on urban health risks. The photographs were discussed, and transcripts were analyzed based on the doughnut economics model using content analysis in NVivo 12. **Findings:** Environments and actions of slum dwellers expose them to health risks, and cause them to live at the edge of planetary boundaries. Environmental sanitation challenges, including solid and liquid waste management, excreta management, and food hygiene and safety expose slum dwellers to risks at the edge of the lower boundary of the planet. Urban conditions expose slum dwellers to poor physical infrastructure, undesirable work conditions, pollution, and health and safety challenges. Crime, violence, and substance use were also viewed as vices that make slum environments dangerous habitats. On the other hand, practices like inhabiting wetlands and using biomass fuels in addition to traffic fumes expose slum dwellers to effects associated with living above the planetary boundaries. **Interpretation:** Urban youth reflected on health risks that have immediate effects on their health and day-to-day living. Urbanization, especially in low resource settings, needs to be cognizant of the ensuing risks to health and thus ensure sustainable growth

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Improving wellbeing by integrating health and conservation: findings from cross-sectional surveys

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Perceptions, priorities, and project delivery problems in women's and environmental health in Peru: a qualitative study

Laura J Brown, Elaine C Flores

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Climate Change, Land Degradation and Planetary Health: A Systematic Literature Review

Nilanjana Ganguli, Byomkesh Talukder

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Background: Land is one of the vital natural resources for socio-ecological well-being. All around the world land is degraded due to various natural and anthropogenic factors such as flood, wind erosion, agriculture, settlement, and anthropogenic climate change. Degraded land is directly or indirectly impacting planetary health. Land degradation and planetary health are inextricably interwoven by multiple interconnected pathways. While significant research has been conducted on the separate dyads of (i) anthropogenic climate change and land degradation, and (ii) land degradation and health, limited consideration has been given to the causal effect of anthropogenic climate change, land degradation and planetary health. The aim of this study is to synthesize the complex causal relationships of anthropogenic climate change, land degradation and its planetary health consequences. Methods: Using a pre-defined protocol, a systematic literature search was conducted in Web of Science and Google Scholar to find the peer reviewed as well as grey literature to investigate the association of land degradation and planetary health in the context of anthropogenic climate change. Using the DPSEEA (Driving Force, Pressure, State, Exposure, Effect, and Action) framework, it was aimed to furnish the findings under two categories (i) anthropogenic climate change and land degradation and (ii) planetary health consequences. Findings: The findings clearly illustrate that “anthropogenic climate change and land degradation” has been more extensively researched than its link with planetary health. Additionally, quite predictably, climate induced soil degradation and its impact on food security has been popular in the search results compared to other planetary health impacts as mentioned in interpretation section for example, such as communicable and non communicable diseases. Interpretation: From data analysis, the planetary health impacts have identified into seven groups: (i) food insecurity (ii) non- communicable and communicable diseases (iii) livelihood insecurity (iv) physical and mental health (v) ecosystem degradation, (vi) extreme weather events, (vii) livelihoods and (viii) migration & conflicts. The finding of this study will help the policy maker to think for integrated actions to mitigate the planetary health impact of climate change induced land degradation.

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PART VI: Poster Session 1



Project

Pedra Circular Center of Planetary Health: developing actions to build a rapid response model to disasters

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Natural disasters result from the combination of important factors for collective health, such as the occurrence of a natural threat, a population exposed to conditions of socio-environmental vulnerability and insufficient measures to reduce potential damage to health. Still little researched in the field of health, disasters generate immediate, medium and long-term health impacts on populations, with almost all disasters recorded in Brazil originating from climatic processes. Both the frequency and the effects of these extreme events tend to increase with the occurrence of global climate changes, such as global warming. Believing that knowledge saves lives, that is, knowing what to do before, during and after a disaster can reduce or prevent damage. In 2017 startup Pedra Circular was create, today inserted in the ecosystem of the Technological Park of the Pontifical Catholic University of Rio Grande do Sul (TECNO PUC), from a local ethnographic study that sought to identify, with the communities affected by floods, which elements were present in the disaster cycle and which solutions were possible. Understanding that each age group, or segment, is affected in a different way in the dynamics of the disaster, startup coordinates several teams, including Pc © Pedrinha.Club (children from 0 to 9 years old, their parents and schools), Pc © Pc PWR (teenagers from 10 to 19), Pc © labSD (young people from 20 to 29), Pc © XPc (adults from 30 to 59) and Pc © Senior (adults over 60). All of these teams, their laboratories and research institutes, act in a coordinated manner in the cycle of disasters, structuring the production of evidence from the three centers, among them the Pedra Circular Center of Planetary Health, a research unit in the structuring phase and with online platform already published, aimed at producing scientific evidence and prototyping solutions for immediate use through the Pedra Circular teams.

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Project

The Take a Bite out of Climate Change Project

Alana Kluczkowski, Joanne Cook, Rebecca Lait, Jacqueline Tereza da Silva, Helen F. Downie, Alison Fletcher, Lauryn McLaughlin, Carla Adriano Martins, Andrew Markwick, Wayne Martindale, Angelina Frankowska, Ali J. Birkett, Sara Summerton, Rosemary Green, Francesca Harris, Joseph T. Fennell, Pete Smith, John Ingram, Zoe Woffenden, John Lynch, David Johnson, Jason C G Halford, Melissa Lord, John McLaughlin, Julian Leon Huppert, Jade Ajagun-Brauns, Christian J. Reynolds, Ximena Schmidt Rivera, Sarah L. Bridle

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Food systems currently contribute to about a quarter of global greenhouse gas emissions (GHGE). Since emission intensity varies greatly between different foods, changing food choices towards those with lower GHGE could make an important contribution to mitigate climate change. 'Take a Bite out of Climate Change' (TakeaBiteCC) is an innovative project aimed to address this issue by developing fun outreach and educational materials to engage with the public in order to raise awareness of this topic, promote sustainable food consumption behaviours and empower citizens to understand how they can help to reduce their climatic impact. The TakeABiteCC team includes researchers in various disciplines from different UK and international universities. In 2019, an exhibit was run at various science festivals around the UK and adapted for use in workshops in India, Gambia, Brazil and Myanmar. In 2020, we ran a lockdown compliant #TakeABiteAtHome, developing free online materials (activity-sheets and walk-through videos) aimed at children (ages 7-14). Materials developed included: 1) Climate Food Flashcards, a free downloadable resource about the variation of GHGE caused by producing different foods, including some useful nutritional value information, to start conversations about healthy sustainable diets; 2) Climate Food Challenge, an online game to learn which food choices have the biggest climate impact; 3) Farming For The Future, a board game to show where GHGE are produced on a farm and how to make it more sustainable, producing fewer emissions and achieving other environmental benefits e.g. promoting biodiversity; 4) a free online Climate Calculator to help us add up the GHGE of different food choices. Beyond informing the public, our aim for future projects is to involve people as citizen scientists, so giving an opportunity to lead other generations into urgent transformation of the food system.

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Project

PlaHNet: Building a young professional community to spread Planetary Health awareness

Ambrogio Zanzi, Pearl Anne Ante-Testard, Marisol Iglesias, Katie Palmer, Maria Cristina Gonzales, Rose Wang

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The concept of Planetary Health is still at a starting point, especially outside of the academic world. For this reason, attempts to raise the attention of the public should be encouraged. Following these needs, at the beginning of 2020, a network of young professionals and students founded PlaHNet, a non-profit organization that envisions getting youngsters involved in Planetary Health through education, advocacy, creativity and collaboration. PlaHNet is focused on the dissemination of the Planetary Health concept, with the main goal of increasing awareness and putting into practice its principles, thus representing one of the first endeavours to actively involve young people in Planetary Health. Despite COVID-19 limitations, the association has seen growth and development, hosting a wide range of activities, such as: free webinars with prominent experts in the field of Planetary and Environmental Health; Photo Advocacy Contest for Nature, to depict environmental changes during the lockdown; and a Medium account for members to express themselves through blogging about Planetary Health and/or COVID-19. Through these blogs, we have also contributed to the COVID-19 Resource Pack hosted by the Northern Europe Regional Hub and Students for Planetary Health. Moreover, during 2020, PlaHNet welcomed new additions to the Leadership Board and created an independent Advisory Board, composed by 7 recognized experts, to mentor the association. These activities resulted in an increase of active members, now 30 from 17 countries. Furthermore, PlaHNet has achieved recognition from the PHA as an official member. This has prompted new goals and opportunities for the association: namely, to become established and distinguished promoters of several initiatives. Thanks to closer collaboration with other PHA members, we can create long-lasting collaborations in active research in the multiple fields of PHA, and in spreading Planetary Health concept to young professionals, to help pave the way towards a sustainable future.

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Research

Coronavirus from cities to forests: mapping vulnerable interfaces and hotspots for SARS-CoV-2 spillover from humans to biodiversity

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Project**Earth's distress calls in the psychic space***Asli Sonceley***How to cite:**

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Could Earth's consciousness be connected to the human psyche in more immediate ways than we think? By rehabilitating public mental health can we restore our Planet's health? My transdisciplinary practice investigates this. Following a burnout in 2018, I began to draw in automatism. I purged my anxieties on paper. The abstract forms that came out of this meditation represented psychic beings that troubled my mind. They felt as real as synapses between neurons, as mycelium among tree roots. What Jung would have called “psychoid archetypes” these subtle bodies roamed both spiritual and material realms. I began to wonder: Could this be how Earth sends us distress calls? If so, could art be the key to translating Earth-speak? Before the pandemic, I staged two psychology experiments using one of my drawings as a variable. These were initial attempts at inspiring science to decipher the language spoken between Earth's Mind and the human mind. Art therapy not only restored my mental health but enhanced its capacity and endurance. As I continue my research, I ask, could it do the same for our Planet? Could psychoids work in reverse? By treating our mental illnesses, could we send healing signals back to Earth? How do we begin? We prioritize the emotional stamina of environmentalists, indigenous communities, and young generations who are particularly vulnerable to depression. We strategize to win the emotional war against planet destroyers. We call it as it is: A willingness to sacrifice one's home for financial gain is a mental disorder. The consumerist society is suffering from an addiction epidemic. We treat the mental illnesses infesting positions of power, and the global economy. By leveraging art's influence, we reframe our reality, rewire minds to survive the climate crisis, and remind humanity how to live symbiotically.

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Research

Planetary health and nursing: Analysis in the light of bioethics*Barbara Braga Cavalcante***How to cite:**

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Background: A quarter of all illnesses and deaths that affect humans can be attributed to environmental factors. Research in the health field is stimulated mainly by innovations in complex medical technologies, genetic advances and nanotechnology, with little reflection on their possible environmental consequences and, specifically, on the ethical, political and educational role that health professionals have in relation to environmental awareness. This conflict can potentially impact the quality of life of individuals and compromise the survival of the next generations, which justifies the need for nursing to be involved in sustainability issues and develop projects that promote an environmentally safe professional category, aligned with planetary health. Sustainability initiatives aim to break a cycle and assume a responsible role in the current scenario of health and illness in Brazil and in the world. Health services are important organizations from an environmental point of view, not only because of the environmental impacts generated, but also because they play an important role in promoting health and life. In addition, it involves processes similar to those found in other service areas, such as transportation, food, cleaning, clothing processing and also specific ones, related to nursing, medical, diagnostic services, among others, which consume a large amount of disposable medical hospital products and generate infectious, chemical and radioactive residues, harmful to the environment and human health. The nursing team represents the largest portion of health professionals, being big consumers of available resources and generators of health waste. Although there are advances in the development of research and actions aimed at reducing the environmental impact caused by man, it is observed that there is still little participation of health services and professionals on these issues, pointing out the need for discussions and reflections that promote an accurate and critical view of the current environmental crisis in the Anthropocene. It is not just a socio-political-economic commitment of the profession, but also an ethical obligation. Bearing in mind that the discussion on bioethics arises (...) to contribute to the search for balanced responses to current conflicts, the debate in its scope about sustainable development, as a professional competence is justified in health services, as it fosters elements for discussion, from a holistic perspective, in addition to converging with the efforts of the new emerging field of research, planetary health. The objective of this research project is to know the perception of the nursing team professionals on sustainable development and its relationship with Bioethics, aligned with the theme of planetary health. **Methods:** It is an exploratory research, with descriptive characteristics, with a qualitative approach. A structured questionnaire will be prepared by the author, with open and closed questions, with a focus on the chosen theme, making it possible to know the participants' perception and understanding of sustainable development in the light of bioethics. **Interpretation:** This research is expected to collaborate with discussions related to the theme of planetary health in Nursing and to deepen strategies that favor the team's commitment to ecologically sustainable action practices, based on the need for a new paradigm of perception of the world and, in particular, from nature.

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Research

Cooling places for urban climate adaptation: the role of urban planning and design linking green and built-up structures

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Currently more than half of the world population lives in urban areas, being more than 80% in Latin America. This number is expected to increase in the next decades. In addition, climate change has strong correlation with the increase of climatic extremes such as heat waves threatening the health of people globally. Mitigation and adaptation measures are urgent to make urban areas more resilient, energy efficient and healthier. Among these measures, the provision of climatic amenities (cooling places) linked with policies for urban design; greening, transport-oriented development and many other strategies embodies the strategic role of urban planning aiming more resilience and health for urban communities. Vegetation brings many benefits: it provides relevant ecosystem services reducing pollution, regulating climate and water management, promoting and protecting biodiversity and bringing well-being to people; however, the impact of heat-stress over the plants' health is still under investigation. Other strategies can be put in place in the built environment including shading, urban furniture, architecture and urban design. Then, this research aims to develop guidelines for proposing cooling places in São Paulo city, encompassing green and built-up structures. The method includes: 1) surveys of the current climate adaptation plans systematizing the measures related to Architecture and Urbanism, international agreements and national and subnational legislation, 2) microclimate simulations of the green and built strategies to be proposed for the current and future climate, highlighting thermal comfort and plant's health, 3) spatialization of the proposals for São Paulo, 4) critical analysis of the results. The outcomes, aligned with active mobility, proper ventilation and physical distancing due to epidemics, can contribute to the Climate Action Plan for São Paulo under development by the Municipality. Qualitative and quantitative results will be spatialized, in order to propose a network of cooling places for climate adaptation in São Paulo.

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Research

Anthropometric conditions of schoolchildren in Bahia, Brazil: preliminary results of a cohort evaluating an initiative to promote human and planetary health

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How to cite:

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Background: In order to mitigate the global syndemic of obesity, undernutrition and climate change, in 2018 the Public Ministry of Bahia implemented the “Sustainable School Program” (SSP), which aimed to improve school meals quality, promote health and prevent diseases, rationalize public environmental and financial resources, and strengthen family farming. In 2019, the “sustainable menu” was implemented in 155 schools of 4 cities, including plant-based meals twice a week for more than 32,000 students. This study aimed to evaluate the impact of these changes on the anthropometric status of this population. **Methods:** In this prospective cohort, a random sample of 770 subjects aged 5 to 19 years old was selected for anthropometric assessment in march and November of the 2019. Weight, height, and waist circumference data were collected to assess linear growth, body mass index and Waist-Height Ratio (WHtR). Measures and interpretation were done by validated parameters. **Findings:** Satisfactory linear growth was observed (86%), especially in rural population (89%) which is more affected by food and nutrition insecurity. There was a reduction from 19% to 15% in underweight prevalence and an increase from 27% to 31% in overweight prevalence. Despite this, a reduction in the prevalence of increased WHtR (14% to 11%) was observed. **Interpretation:** The proposed interventions were effective to promote weight gain among underweight schoolchildren. Although there was an increase in overweight, the reduction in prevalence of increased WHtR suggests improvement in body composition and a potential reduction in cardiovascular risk. Considering these findings and the environmental impact of plant-based diets, SSP seems to be a promising strategy to improve human and planetary health.

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Research

Countering the obesity and non-communicable diseases epidemic in the Pacific region: a critical policy review

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Research

Anthropic pressures threatening sea turtles on the southern coast of São Paulo State, Brazil

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Sea turtles belong to a group of the oldest living reptiles on the planet. This research aims at investigating five species in Brazil: *Caretta caretta* (loggerhead sea turtle), *Chelonia mydas* (green sea turtle), *Eretmochelys imbricata* (hawksbill sea turtle), *Dermochelys coriacea* (leatherback sea turtle) and *Lepidochelys olivacea* (olive ridley sea turtle), all appearing on the IUCN red list of threatened species. Anthropic pressures are associated with the lack of urban planning in Brazilian coastal cities, disordered fishing, predation, climatic changes, sea turtle meat illegal trade and pollution. The SOS Tartarugas Marinhas project, carried out by IBIMM – Institute of Marine Biology and Environment (ICMBio license 50132, BioCeua-IBIMM 006/2020), evaluated the biological and ecological aspects of sea turtles in the environmental protection area of Cananéia-Iguape-Peruíbe, Jureia-Itatins mosaic of conservation units and the ecological station of Tupiniquins. The results accounted for approximately 164 specimens of stranded and dead sea turtles; 148 of which were *Chelonia mydas*, 4 *Caretta caretta*, 1 *Eretmochelys imbricata* and 11 could not be identified due to the accelerated stage of decomposition of their carcasses and loss of plastrons and skull bones that would assist in the specie's recognition. During the necropsy procedure, 80% of the animals presented a high presence of solid residues into their gastrointestinal tract, being plastic the most abundant material and suggesting that the cause of death is related to the ingestion of these polymers. It concludes that, among all the anthropic pressures to the marine and coastal ecosystems, the most serious is the disposal of plastics such as trash bags, shopping bags, disposable cups and drinking straws. Therefore, this work expects to provide subsidies for carrying out environmental education projects, such as responsible tourism campaigns on the coast of São Paulo State, in addition to develop mitigating actions for the local people.

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Project

Nontraditional Approaches to Offsetting Carbon

Cheryl Margoluis, Cara Honzak, Robin Marsh

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Background: Pathfinder International is among the first global sexual and reproductive health and rights organizations to commit to tackling the climate crisis. In 2020, Pathfinder adopted a Women-Led Climate Resilience Strategy to enable millions of women and girls living in key climate hotspots as climate resilience change agents, to catalyze their communities to adapt and thrive through crises and change the trajectory of climate change. Early steps have included a partnership between Pathfinder and the University of California at Berkeley to determine how integrated health and conservation programming might contribute to UCOP's pledge to become carbon neutral by 2025, while also building women's climate resilience. This approach offers a new way to scale up efforts to build women's resilience, while enabling private and public sector institutions meet their carbon commitments. Methods: Activities that build women-led climate resilience in our programming that also generate carbon offsets are creating new prototypes for ecostoves for households and entrepreneurs, training forest scouts, building capacity at schools to create nurseries and kitchen gardens, and supporting climate smart agriculture with a landscape approach. Findings: The activities are an effective way to generate carbon offsets while building resilience but require technical expertise to meet reporting requirements needed by offset programs. Interpretation: Working through integrated health and conservation programs creates a new mechanism to provide carbon offsets to global organizations who are interested in, and often mandated, to do so. And working through these programs generates important co-benefits for long term climate adaptation, such as building capacity. It also offers integrated programs more opportunities to build climate resilience in communities throughout the world, and not just those surrounded by large scale forests. But organizations must be prepared to seek outside support to successfully measure and monitor the offsets to ensure legitimacy.

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Research

Pharmed Fish: The need for disposal guidance on pharmaceutical packaging

Christine Vatovec

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Background: Pharmaceuticals provide many benefits to humans, yet as chemicals of emerging concern they pose several risks to the environment and human health. In surface waters, pharmaceuticals pose a number of risks to aquatic species, ecosystem health, and public health. Through our previous research we identified a lack of disposal information as a primary driver of the inappropriate disposal of unused medications that leads to surface water pollution. The aim of this research was to investigate how disposal information is provided to consumers on drug packaging. **Methods:** Our approach included a directed content analysis of drug packaging for 53 pharmaceutical compounds we previously detected in wastewater. Each compound name was searched in the NIH Daily Med database and we analyzed the top 20 results for each drug; the resulting search results included images of drug packaging and informational inserts. **Findings:** Our results indicate that of the 53 pharmaceuticals analyzed for disposal guidance, the packaging of only 2 compounds provided directions for how to discard unused portions of the drug; one of these (morphine) directed consumers to return the drug to a take-back program which is the environmentally-preferred disposal route, the other (methadone) recommended flushing the drug down the drain. Of the remaining 51 compounds, 46 provided no disposal information, 1 referred the consumer to their pharmacist for disposal information (Abacavir), while the remaining 4 included statements related to disposal but did not provide directions (Albuterol, Methocarbamol, Piperonyl butoxide, Verapamil hydrochloride). **Interpretation:** These findings suggest that providing directions for environmentally-preferred disposal on drug packaging is a point of intervention that could minimize pharmaceutical pollution in the aquatic environment.

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Research

An asset ecosystem approach to maternal health and wellbeing: systematic review and synthesis

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Background: Beyond the constraints of the health system, maternal health is shaped by rich informal economies, systems of social and material support, and non-human environmental factors, which often remain under-recognized and under-articulated. As such, important opportunities to engage with local assets and activities for health - and the way these come together into broader salutogenic systems - are lost. To better understand these factors, we developed a community health asset ecosystem approach to mapping maternal health and wellbeing, drawing on systems thinking and asset-based methods. **Methods:** We performed a systematic review and descriptive synthesis to construct a conceptual framework of the community health asset ecosystem, factors that support or hinder the realization of maternal health and wellbeing. We focused on literature with a community-level focus and framed our search in relation to MDG targets of reducing maternal mortality and increasing skilled birth attendance. We applied a systems-minded, asset-based approach to the analysis, which encourages the discovery of community assets (versus deficits) and how they fit together in dynamic, non-linear ways. **Findings:** We included 150 papers in the review, including original research articles, systematic reviews, and policy reports. We identified community assets for maternal health spanning informal community and formal health systems settings, across micro, meso and macro levels. Assets were conceptualized as primary, secondary, tertiary, and bridging. Primary assets were inherent to the individual or community (human, environmental resources). Secondary assets represented ways in which primary resources were harnessed (knowledge, technologies, and rules). Tertiary assets reflected higher-level community processes such as quality, governance and coordination. **Interpretation:** A community health asset ecosystem approach to maternal health and wellbeing creates a fuller picture of the systems of assets and resources that women draw on to pursue maternal health, spanning both the formal health system and informal systems of community support. This approach helps facilitate more effective systems-minded decisions to enact local and trans-local changes.

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Project

Planetary Health and Education for Sustainable Healthcare: Developing an AMEE Consensus Statement

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Background and project description: To achieve planetary health, education is required across all sectors to promote action. Health professionals must be prepared to implement and deliver system-wide changes to mitigate (such as reducing healthcare's environmental footprint) and adapt to the current ecological crisis. Supported by the Association for Medical Education in Europe (AMEE), a multidisciplinary team of geographically representative health professional educators and students was invited to develop a Consensus Statement (CS) on Planetary Health and Education for Sustainable Healthcare (ESH). Goals and target audience: The primary goal of the CS was to provide an evidence-based, transdisciplinary set of guiding principles for institutions, professional organizations and individual health professional educators globally to plan and integrate contextually relevant planetary health and environmentally sustainable healthcare into their various curricula. A second goal was to inform national and global accreditation standards. Outcomes: Developed over 10 months, with several iterations reviewed by all contributors, plus two rounds of review by three independent experts, the CS was accepted for publication in *Medical Teacher* in December 2020, appearing in print in early 2021. The CS includes: • Learning outcomes and objectives (knowledge, skills, mindset, values, agency), with suggested educational strategies and assessment approaches • Recommendations for faculty development, including the need for eco-ethical leadership • A focus on equity, inclusivity (e.g. Indigenous traditional knowledge) and human rights • A list of resources including curriculum competency frameworks, e.g. 2030 United Nations Sustainable Development Goals, global health consortia and planetary health projects • A glossary of relevant terms • A proposed road map (timeline), with recommendations for ESH implementation at various levels. Interpretation: This CS thus provides a global, collaborative, representative and inclusive vision for educating a transdisciplinary healthcare workforce that can deliver environmentally sustainable healthcare and promote planetary health, simultaneously respecting the inherent human dignity enshrined in human rights.

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Research

Association between polyphenol intake and hypertension in adults and elderly in a Brazilian cohort

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Background: Hypertension is a multifactorial condition characterized by sustained elevation of blood pressure. Epidemiological studies have shown associations between consumption of polyphenols, and reduced risk of chronic diseases, such as cardiovascular diseases. Therefore, the aim of this work is to assess the association of the total polyphenol intake with the prevalence of hypertension in a Brazilian population. **Methods:** This was a cross-sectional study performed with the baseline data from the “Cohort of Universities of Minas Gerais” (CUME project). Polyphenol intake was calculated by matching usual food intake and the polyphenol content in foods from the Phenol-Explorer, USDA database and original articles. Odds ratios and their 95% IC of hypertension comparing the various categories of exposure were calculated by performing bivariate and multivariate-adjusted logistic regression models. **Findings:** Those who consume at the second quintile [9.54 mg/day (9.45 - 9.63)] of Other Polyphenols, are 17% less likely to be hypertensive. Regarding subclasses, those who consume at the second quintile [0.79mg/day (0.77 - 0.81)] of Alkil Methoxyphenol are 23% more likely to be hypertensive. **Interpretation:** There is an inverse relationship between the consumption of some polyphenols and their subclasses with the presence of hypertension. Therefore, the consumption of their food sources is encouraged.

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Project

The Planetary Health Friendship Team

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Project Initiative Concept & Details: The Planetary Health Friendship Team is a new initiative to connect our global community on shared values and interests. We are a small group from different countries and contexts engaging in heart-led conversations over Zoom each month. This group started over coffee at the September 2019 PHA Annual Meeting in Stanford and evolved in 2020 to include new friends from Brazil. We recognize the urgency of our environmental and human health crises, and want to counteract the overwhelm, apathy, complacency, immersion in technology, and mental health issues by cultivating a community to support healing and hope. We are passionate about enhancing our global community's connection to indigenous wisdom and sharing human knowledge beyond the dominant scientific/academic lens, in order to broaden and deepen our understanding of planetary health solutions in practice. **Target Audience:** Our group is open to people who want hope and a supportive community to heal together. It's relevant for those who are interested in connections between modern science and ancient knowledge; particularly the stewardship of wisdom about humanity's place in nature. **Goals:** The goal is to build our community with even more diversity, equity and unity, while raising awareness about topics related to Traditional Ecological Knowledge. We want to proactively meet people where they are at, especially the wisdom bearers and those who are currently marginalized and underrepresented. We plan to promote intergenerational wisdom exchange and highlight community-centered solutions to heal ourselves and planet Earth. **Results:** We identified many points of resonance such as consciousness, systems thinking, and Traditional Ecological Knowledge. We hosted five meetings and established a platform for sharing resources related to these topics of interest. We are mapping stakeholders to broaden engagement and will use this opportunity to connect with wider audiences to explore synergies.

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Project

Learning for the planets future - Transformational planetary health education in the Eastern African Region

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Awareness of Planetary Health concepts is low in the African Region, despite the continents' close link to nature and the immense threat of climate change consequences. Starting in mid-2020, the Planetary Health Eastern Africa Hub (PHEAH), supported by the German Climate Change and Health Alliance, developed a multisectoral capacity building program for the region. It consisted of planetary health lectures and interactive workshop sessions, which were conducted virtually due to the COVID-19 pandemic. The sessions sought to have a balance of regional and international expertise as well as encourage active discussions. The program aimed at providing not only knowledge on planetary health and pandemic perspectives, but also forming change agents in the Eastern African Region and building up trans-regional networks to exchange planetary health solutions. The activities provided were open to a broader audience including students, health care professionals, environmental and agricultural experts, religious leaders as well as academia. The program met a lot of local interest and at the end of 2020, we established an email network of nearly 200 participants. To further increase visibility, we set up a website as well as social media channels where all our lectures can be re-watched online. To establish sustainable planetary health awareness, we partnered with a range of local NGOs, academic institutions and community projects which will help to shape the future of the Hub. Key thematic areas for future engagement emerged from workshops and discussions with partners throughout the year which include interdisciplinary planetary health education and research, inclusion in school curricula, increased planetary health awareness, community outreach and primary healthcare services. The PHEAH's increased visibility has shown positive impacts already. New networks have opened with other Hubs such as the Planetary Health Western African Hub and the formation of new Planetary Health Hubs within the African Region has been fostered.

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Research

Correlation between air pollution in São Paulo with hospitalizations in cardiac patients with COVID-19

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Air pollution is responsible for a significant increase in mortality annually worldwide. In addition to the direct effects of air pollution on different organs and systems, air pollution increases the susceptibility and severity of heart disease. Another disease that disproportionately affects cardiac patients is viral infection by Sars-Covi-2. Air pollution can preserve the viability of Sar-Cov-2, increase its potential for infection and facilitate transmission through interaction with particulate matter in the air. Therefore, a small increase in long-term exposure to pollutants can lead to a large increase in the mortality rate due to COVID-19, especially in groups already susceptible to the harmful effects of pollution. Based on a short-term assessment, we intend to correlate the prevalence of the COVID-19 hospitalization rate in people with risk factors such as heart disease with air pollution rates on the same date and days before admission. For that, air quality data obtained by CETESB and hospitalization and mortality data by COVID-19 obtained by daily bulletins issued by the State of São Paulo will be used. The results obtained are expected to demonstrate that the pollution associated with COVID-19 favors the population's illness.

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Research

A Review of Zoonoses Associated with Consumption and Use of Wildlife in Arctic and Boreal Systems in the Context of Emerging and Pandemic Disease Risk

Lucy Keatts, Martin Robards, Sarah H. Olson, Karsten Hueffer, Stephen Insley, Damien O. Joly, Susan Kutz, David S. Lee, Cheryl-Lesley B. Chetkiewicz, Stéphane Lair, Nicholas D. Preston, Mathieu Pruvot, Justina C. Ray, Donald Reid, Jonathan M. Sleeman, Raphaela Stimmelmayer, Craig Stephen, Christian Walzer

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Background: COVID-19 has re-focused attention on mechanisms leading to zoonotic disease spillover. Commercial wildlife trade and associated markets are recognized drivers for zoonotic disease emergence, resulting in global conversations around reducing spillover risks from hunting, trade, and consumption of wild animals. These discussions are relevant for people relying on wildlife for nutritional and cultural needs, including those in Arctic and boreal regions. Global policies around wildlife use and trade can impact food sovereignty and security, especially of Indigenous Peoples. Methods: We reviewed zoonoses with potential for transmission to humans via the use and consumption of wildlife in North American Arctic and boreal biomes; evaluated their epidemic and pandemic potential; and considered future concerns, and monitoring and mitigation measures. Findings: While multiple zoonotic pathogens circulate in Northern systems, risks to humans are mostly limited to individual illness or local community outbreaks. These regions are relatively remote, subject to very cold temperatures, have relatively low wildlife, domestic animal, and pathogen diversity, and mostly low density, including of humans: Favorable conditions for amplification of a spillover event are currently not present. Interpretation: The greatest risk to northern communities from pandemic pathogens is via introduction with humans from other areas. Arctic and boreal ecosystems are undergoing rapid changes through climate warming, habitat encroachment, and development; altering host and pathogen relationships, and affecting the probability of emergence and re-emergence of zoonoses. Future monitoring, research, and response must employ inclusive One Health approaches that draw on all knowledge systems and types of expertise, incorporating the complexity and interrelatedness of the environmental, biological, economic, political, cultural, and social dimensions of zoonoses emergence in northern biomes. Indigenous leadership and engagement are vital from the outset, to improve success, and ensure the protection of Indigenous rights as outlined in the United Nations Declaration on the Rights of Indigenous Peoples.

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Research

Dengue history in a large metropolis: spatio-temporal analysis in Belo Horizonte and vector monitoring by ovitraps, 1996-2019

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Dengue is an infectious disease transmitted by the *Aedes aegypti* mosquito that occurs in a seasonal pattern and is a major concern in public health. In this work, we aim to understand the spatio-temporal dynamics of dengue in the municipality of Belo Horizonte, Minas Gerais, Brazil. We used a database of dengue cases (1996-2019) and data from ovitraps (2007-2019), in addition to the health vulnerability index of the local population (HVI), which is composed by urban infrastructure and socioeconomic conditions. We performed the frequency distribution of the disease seasonal cycles and spatial analysis using the Kernel ratio and a space-time scan statistic. Our results showed the occurrence of five epidemic cycles in the municipality. The analysis allowed us to identify some areas close to urban agglomerations that have a higher incidence and to infer that the northern region of Belo Horizonte presents a persistent pattern of risk for dengue. We found a homogeneous pattern regarding ovitraps positivity, probably explained by the mobility of hosts, vectors, and viruses. This investigation combined with spatial analysis can lead to other findings, contributing to the understanding of the interaction between host, virus, vector, and environment.

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Research

An acoustic treatment to mitigate the effects of aquatic plagues on biodiversity loss/agriculture and prevent collateral consequences in human health

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Background: Global change contributes to an increase of disturbance events on natural ecosystems with environmental drivers, like biological invasions, which constitute a threat to ecological communities' integrity. Invasive species massively contribute to biodiversity loss, as they are the second leading cause of species extinction. They modify the food web structure by decreasing species diversity and may constitute a risk to human health, by favoring the introduction of new pathogens that can lead to pandemics. They may also provoke severe economic consequences, as seen in agriculture. Methods: The apple snail (*Pomacea maculata*) is a freshwater gastropod mollusk from South America that has become a dangerous invasive pest worldwide because of its high fecundity, opportunistic feeding, wide abiotic tolerances and close associations with humans. It can devastate rice, and other aquatic or semi-aquatic crops, compete with native species, prey on native fauna and alter natural ecosystems. In addition, the apple snail acts as a vector of various parasites including *Angiostrongylus cantonensis*, a nematode that can cause human eosinophilic meningitis. As a gastropod mollusk it possesses a sensory system (statocyst) on each side of its foot. We analyzed the effects on statocyst sensory epithelia after sound exposure. Findings: This study shows the adult apple snail's sensitivity to artificial low-frequency sounds, causing pathological changes in its sensory system. The severity of the lesions increased over time in exposed individuals. Interpretation: As seen in other invertebrate species, sound-induced damage to the statocysts could likely result in an inhibition of an animal's vital functions and a dramatic reduction of its survival. The applications of targeted sound doses to invasive species while maintaining the integrity of the natural habitat could present a valuable method to mitigate and prevent the invasions of plagues that interfere with ecological communities' health status, as well as to regenerate damaged ecosystems.

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Research

Greenness and education inequalities in life expectancy in Latin American cities: an ecological study

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Research

The popularization of culinary skills as a tool to promote Planetary Health

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Background: Food systems are one of the greatest impact factors on Planetary Health and also one of the most powerful tools to optimize human and environmental health. In a more personal sphere, aspects such as information and culinary skills constitute potential obstacles for the adoption of dietary recommendations. So, this project aimed to promote the reflection and engagement in culinary skills among Nutrition students and professionals and the general population through the elaboration of sustainable recipes. Methods: This project was developed as one of the pillars of Sustentarea, an Extension Program of University of São Paulo. The “recipe group” was composed of six volunteer undergraduate, master's students and nutritionists, and led by three volunteer masters professionals. The group developed monthly and alternately recipes and culinary techniques guided by sustainability markers: reduction, substitution or exclusion of animal ingredients; adjustments in salt, sugar and fats amounts; integral use of food; respect for seasonality; recovery of culinary traditions; and valorization of local food. The elaborated materials were published in Sustentarea's profiles on social media and official website, aiming at encouraging more people to be in the kitchen. Findings: From May to December 2020, 20 recipes and 7 cooking techniques were developed, which resulted in 40 posts and one recipe ebook. The great volume of engagement and interactions in social networks (4,308 likes, 878 savings, 662 sharings, 409 comments) indicated the reach to the general population. During the entire process, the group members had a chance to improve their creativity, interpersonal collaboration, and culinary skills. Interpretation: The identified evolution of the group members helps them to become active subjects in the promotion of adequate, healthy and sustainable dietary patterns, besides recognizing the act of cooking as an important tool in professional practice to promote planetary health.

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Project**Big history and Planetary health: insights from our cosmic evolution**

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Global solutions to preserve planetary health need to understand the global picture. Big history is an interdisciplinary approach that helps in this understanding. In this approach, we examine the history from the Big Bang to the present, studying the rise and demise of complex systems at different scales, i.e. our cosmic evolution. By analyzing the past from this wider perspective, we can discern patterns, thresholds and unsolved scientific questions that might remain hidden if the analysis was done from a specific discipline. Such a comprehensive conceptualization of the past will almost inevitably also generate insights that shed light on the future of humanity, and can help elaborate theoretical foundations for other disciplines. The Big history approach becomes essential in order to implement scientific agendas that can address the complex social, economic and ecological problems we face in the XXI century. It can also grow into a strong pedagogical tool in which the student can achieve what is called secondary learning. In this type of learning, the concepts to learn are not as important as the new position that the learner attains in front of the problem to solve. In the combination of the study of natural and man-made systems at large scales, Big history may be in a unique position to help elaborate the theoretical foundations of planetary health science: only if we have an understanding of how complex, adaptive systems have emerged, functioned, interacted and collapsed in the past, we stand a chance of designing human systems that can co-exist with Earth's natural systems for the foreseeable future.

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Project

Medical Advocacy - Grassroot network “Doctors in Alert” and the “Guaíba Mine” open air coal mine.

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Background: Coal needs to be phased out in order to meet the objectives of the Paris Agreement. The largest open coal mine in Latin America is to be constructed in the Porto Alegre metropolitan area located in south of Brazil. The aim of this work is to describe the advocacy strategies implemented by a grassroots network called Medicine on Alert (MA) in order to tackle planetary health strategies on this issue. Methods: MA has been working since 2019, in order to engage the local medical community, as there is a need to raise awareness for protecting the health of 4 million inhabitants. All advocacy actions that have been taken were guided by the principles of evidence-based medicine, medical ethics and non-partisanship, considering the potential harmful effects to the community. Media and medical societies strategies were used. Findings: The MA's activities have produced an information newsletter as an alert and a video in which has described the health risks related to a Coal Mine. Subsequently, a letter focusing on the evidence related to air pollution and health was sent to the regional Medical Council. We have also produced several technical reports describing the harmful effects of a coal mine. Eight scientific health professionals societies (pediatrics, family and community medicine, genetics, cardiology, neurology and neurosurgery, psychiatry, bioethics and occupational and environmental health) accepted to be involved and produced clear positions in favor of an independent Health Impact Assessment, as WHO recommends. Interpretation: MA advocacy group has been successfully implementing several activities that can contribute to safeguard planetary health. This subject is still not being systematically covered by medical scientific societies, nor on the medical curriculum. There is an urgent need to emphasize ethical and scientific background on this topic.

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Research

FGD gypsum applications in production of eco-friendly cementitious matrices: waste management for sustainable construction

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Portland cement is one of the most manufactured materials in the world. The worldwide cement industry accounts for at least 5-7% of the anthropogenic CO₂ emissions and therefore is an important sector for CO₂ emission mitigation strategies to limit global warming. One of the strategies for reducing the carbon footprint of the cement industry is replace traditional Portland cement with other solid wastes. Flue-gas desulfurization gypsum (FGD gypsum) is an industrial by-product gypsum obtained by desulfurizing and purifying the flue gas generated after combustion of coal. Its composition is mainly calcium sulfate dihydrate. This common solid waste from coal-fired power plant is worthy of consideration because is generated in huge amounts and since recycling is insufficient, it is usually dumped at waste disposal sites. In the present study, the influence of the application of FGD gypsum in cement pastes was investigated. In the first stage, the physical and chemical characteristics of FGD gypsum, commercial sand and cement were determined (XDR, XFR, fineness modulus, granulometry, specific mass, loss on ignition and moisture content). Then, mortars were produced according to the standards and cylindrical specimens were molded with CII-F-32 Portland cement, sand and 0%(reference), 25%, 50% and 75% amounts of FGD gypsum. After curing time of 1, 3, 7, 28 and 91 days, the cementitious materials were submitted to tests to determine their physic-chemical and mechanical properties. The utilization of FDG gypsum for producing cementitious matrices can directly result in a lower usage of natural resource and encourage circular economy, since is a value-added way for waste management. Additionally, can contribute towards the achievement of SDGs, specifically, SDG 12 and FDG gypsum can be employed to minimize the GHG emissions associated with the construction sector.

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Research

Zoonotic infectious diseases as ecosystem disservices: a retrospective data review

Rory Wilson, Sonia Tiedt, Kris Murray

THE LANCET
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Research

Building Robust Evidence for Market-Centered Integrated Development: Initial Lessons from USAID's Health, Ecosystems and Agriculture for Resilient, Thriving Societies Program (HEARTH)

Samuel Sellers, Natalie Bailey, Sara Carlson, Robert Cohen, Kiersten Johnson, Clive Mutunga, Catherine Wahlen, Elizabeth Daut

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Background: While theoretically compelling, cross-sectoral, integrated development approaches that deliver planetary health solutions lack robust evidence supporting their effectiveness. In response, in 2019, the U.S. Agency for International Development (USAID) launched Health, Ecosystems, and Agriculture for Resilient, Thriving Societies (HEARTH), an initiative to co-design integrated activities with private sector partners to conserve high-biodiversity landscapes and improve the well-being and prosperity of communities that depend on these landscapes. As of April 2021, USAID has committed over \$60 million of cross-sectoral funding for 15 five-year HEARTH activities in 10 countries: Bangladesh, Cote d'Ivoire, Democratic Republic of the Congo, Ethiopia, Ghana, Indonesia, Kenya, Madagascar, Papua New Guinea, and Zambia. **Methods:** HEARTH is predicated on robust monitoring, evaluation, research, and learning (MERL) to generate evidence about the conditions under which market-based, cross-sectoral programming improves development outcomes. HEARTH activities will collect data on a common set of cross-sectoral indicators, and where appropriate, employ impact evaluations to measure biophysical and human well-being changes across sectors. Facilitated co-creation, including MERL design, addresses threats to biodiversity and human well-being, and uses standardized theory-of-change approaches to enable rigorous monitoring across geographies and sectors. Virtual sessions bring together USAID staff, private sector colleagues, and implementing partners. **Findings & Interpretation:** Ten HEARTH activities have completed initial design in six countries. Most activities seek to improve livelihoods and incomes, food security, nutrition, human health, governance, and community resilience. Threats mitigated include land/forest degradation from agriculture and charcoal production, wildlife poaching for bushmeat and high market value species, and overexploitation of marine resources. HEARTH partnerships propose similar interventions, including developing conservation enterprises, training and capacity building particularly in regenerative agricultural practices and business skills, improving health care quality and access, governance, and land use planning. Common approaches across diverse landscapes provide opportunities to fill knowledge gaps in cross-sectoral, market-based development.

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Project

The role of serious games and youth as co-designers in future healthy and sustainable city world-building

Sarah Bodmer, Cath Conn, Daysba Tonumaip'e'a, Daniel Fernandez, Radilaite Cammock

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Serious games are an innovative means of contributing to complex problem-solving. They provide opportunities to consider the many variables involved in a given problem and to develop innovative solutions. City-building games, such as SimCity and Cities: Skyline, are widely used in various settings including education; helping learners and facilitators understand cities as complex systems. Many of the urban issues presented in these games (traffic, pollution, natural disasters, waste accumulation, activity spaces) are closely related to the determinants of health and fit well with a planetary health model. An innovative study based in Auckland, New Zealand, and prioritizing youth leadership and sustainability, aimed to contribute to a future healthy and sustainable cities' agenda, through providing a serious games' space for public health students to work collaboratively with faculty. The study used an action-oriented focus group method to develop a prototype of a world-building game for future healthy and sustainable cities; for use by students, planners, professionals in educational and project design settings. Emerging findings are that serious games' codesign can be useful, methodologically and conceptually, to imagine/reimagine future cities. World-building serves as a valuable 'thought experiment', going beyond the status quo to alternative futures, to the potential of new technologies and values, including indigenous values/systems, such as Maori Kaitiakitanga (guardianship of the natural environment and Pacific Va (health spaces). World-building offers opportunities for creativity through the use of avatars, role play, different world scenarios. Serious games' codesign offers a more creative space than normative education for youth to explore key strategies and ideas. World-building allows those involved to move away from disciplinary/sectoral siloed norms. The study is ongoing but so far it is perceived as disruptive, fun, challenging and capacity-building enhancing problem-solving skills critically and creatively whilst reflecting real world complexities essential for developing urban futures.

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Research

Food and Sustainability: Food Waste at the Polytechnic of Coimbra

Susana Paixão, Ana Ferreira, Silvia Seco, António Loureiro

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Food waste represents a major economic, environmental and social problem. It translates into losses that occur in any of the stages of the food chain, from production to consumption, which imply that food does not fulfill the purpose for which it was produced: to be consumed. The urgent need to promote more sustainable behaviors in favor of better environmental health and, of course, a better quality of life, makes Sustainable Development a priority of the Polytechnic of Coimbra (IPC). Thus, the “Politécnico de Coimbra + Sustentável” project arose, with the objective of implementing actions for an environmentally more sustainable Institution. In order to eliminate / reduce food waste and fight hunger, the IPC established, in March 2019, a partnership with Re-food. This study focused on food waste in all IPC canteens and coffee shops and aimed to quantify food waste in the form of food surpluses donated to Re-food. The data collection lasted for 4 months, from March to June 2019. The surplus was collected by Re-food, taking place on Fridays, on the eve of holidays and, whenever justified, on days of events. It was found that, despite the food waste prevention measures already implemented in the IPC canteens and coffee shops, 408.00 kilograms of food surplus were collected during the study period (subsequently forwarded by Re-food to needy families and institutions, signaled by you). In addition to taking advantage of food surpluses in a social aspect, the IPC managed to reduce the amount of waste produced in its canteens and coffee shops, thus promoting its mission of contributing to a Polytechnic of Coimbra and a society increasingly sustainable.

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Research**“People who have their lives organized by nature and by our vital cycles”:
narratives about traditional communities, relationships with nature and
sustainability**

Thaís Presa Martins, Nádia Geisa Silveira de Souza

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Martins, T.P., Souza, N.G.S.d. (2022). “People who have their lives organized by nature and by our vital cycles”: narratives about traditional communities, relationships with nature and sustainability. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (p. 87). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance. <https://doi.org/10.5281/zenodo.6373367>

Subjects are historically constituted, marked and socially positioned by the ways they are narrated in relations of knowledge/power. I understand the nature and relations of traditional peoples with it as cultural constructions. I analyze sayings about the ways of life of traditional peoples as a model of balance with nature for the subjects of consumption, urban. For that, I use theoretical and methodological tools from the field of Cultural Studies. The examined audiovisual material “Nature and traditional cultures”, by Alana Organization, addresses the vision and place of nature in different cultures, being elected for being part of the constitutive network of “Nature Deficit Disorder” (NDD). NDD refers to health problems resulting from a lack of contact with nature: ADHD, anxiety, depression, etc. The video teaches viewers about: the lack of contact with nature and NDD; traditional peoples are in balance with nature and are sustainable societies.

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Research

Historical aspects of the development of cattle production in Brazil

Vanessa Theodoro Rezende, Ricardo Barboza Alves, Augusto Hauber Gameiro

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The development of human society is linked to the development of agriculture. In Brazil, the development of cattle production started during the colonial period (≈ 1500) being a secondary activity, which helped to occupy the territory due to its productive dynamics and followed the growth of the country's population. Moreover, even after the implementation of the Republic (1889), it continued to be encouraged by public policies. The decade of 1960 changed substantially the cattle production in Brazil. With the influence of the "Green Revolution", the Brazilian government invested in technologies and research in agriculture, which has changed the way of animal breeding. This paper aims to show the effects of the development of cattle production in Brazil and its relation to the Green Revolution that happened around the world. For that, data were analyzed regarding the evolution of the cattle herd in Brazil from 1961 to 2018, available in the FAO database. There was a constant increase in the number of bovine heads in the period, leaving a participation in the world herd from 6% in 1961 to 14% in 2018. This increase was more significant in the Cerrado biome at the Central-West region, as cattle were adapted to the region through government research, transforming it into a new agricultural frontier. However, this development occurred at the cost of severe environmental impacts on the ecosystem, with the adoption of techniques altering the local fauna and flora. Thus, Brazil has become a major producer of agricultural products and a major exporter of beef on a world scale. Currently, Brazilian products have been the target of criticism due to environmental and social impacts, so it is necessary to study the relation between the development of society and the production of cattle.

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PART VII: Poster Session 2



Research

Nutritional and environmental characteristics of plant-based school menus: analysis of an initiative to promote human and planetary health in Bahia, Brazil.

Alana Kluczkowski, Camilla Almeida Menezes, Renata Lago, Bruna Cerqueira, Bruno Cruz, Letícia Bastos, Rebecca Lait, Carla Adriano Martins, Angelina Frankowska, Jacqueline Teresa da Silva, Nelzair Vianna, Ximena Schmidt Rivera, Christian Reynolds, Sarah Bridle

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Background: The United Nations Framework Convention on Climate Change (UNFCCC) is the primary international forum dedicated to addressing the climate crisis. A past delegation of medical students to the 2011 meeting of the UNFCCC, the Conference of Parties (COP) assessed the views of attendees about the perceived importance of health to UNFCCC negotiations and outcomes. We conducted a survey to reassess attendees' views about health and climate change at the UNFCCC's COP25 in 2019. On the background of the EAT-Lancet Commission on healthy diets from sustainable food systems, we included an additional focus on healthy and sustainable food systems. **Methods:** A survey was distributed in public areas during both weeks of COP25. Data were analyzed using Microsoft Office Excel and compared to data gathered during the UNFCCC COP in 2011. **Findings:** We received 278 responses from 84 countries. We found a statistically significant increase in non-governmental organizations (5.32/10 in 2019 vs 3.85/10 in 2011; $p < 0.0001$) and Party delegates (6.04/10 in 2019 vs 4.77/10 in 2011; $p = 0.0006$) views about the importance of health in UNFCCC negotiations and outcomes. There was also a statistically significant increase in perceptions of how important health should be in UNFCCC processes in the non-governmental organization delegate group (9.02/10 in 2019 vs 8.19/10 in 2011; $p < 0.0001$). Additionally, we found that all delegate groups, including farmers and LMICs, supported UNFCCC catering in line with the EAT-Lancet at its events and incorporating dietary change into UNFCCC negotiations and outcomes. **Interpretation:** We recommend that to meet the Paris agreement, food systems, including dietary change, must be included in Nationally Determined Contributions (NDCs). We also call upon the UNFCCC to mandate that catering at all current and future events follows the latest guidance on healthy and sustainable diets.

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Research

Developing a local framework for the Brazilian food system incorporating socioeconomic, nutritional, and environmental aspects

Aline Martins de Carvalho, Dirce Maria Lobo Marchioni, Andrew D Jones

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Research

Association between leisure-time physical activity and socioeconomic context in Brazilian capitals

Amanda Cristina de Souza Andrade, Débora Moraes Coelho, Amanda Silva Magalhães, Bruno de Souza Moreira, Karina Simone de Souza Vasconcelos, Alessandra de Carvalho Bastone, Waleska Teixeira Caiaffa

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Background: Physical activity practice is a multifactorial behavior and involves interrelationships of multiple levels of influence, such as individual, social, environmental, and political. The objective of this research was to investigate the association between leisure-time physical activity and the socioeconomic context in Brazilian capitals. **Methods:** This is a cross-sectional study conducted with data from the National Health Survey (2013). Physical activity practice was measured by questions about the frequency and duration of physical activity spent on leisure. Individuals who reached at least 150 minutes a week of physical activity were considered active. The socioeconomic context was evaluated by the GeoSES that is a composite index that summarizes seven distinct dimensions of the Brazilian socioeconomic context: education, mobility, poverty, wealth, income, segregation, and deprivation of resources and services. This index was defined in an intra-municipal scale and ranges from 1 (high socioeconomic condition) to -1 (low). It was developed using principal component analysis with variables from the 2010 Demographic Census. Multilevel logistic models of two levels (individuals and capitals), adjusted for sex, age, education, family income, and demographic density were estimated. **Findings:** Of the 26,779 participants interviewed in the capitals, 55.0% were female, had an average age of 43.0 (± 17.0) years, and 26.4% (95% CI: 25.5-27.3%) were active in leisure. The capitals with the highest socioeconomic indexes are concentrated in the South, Southeast, and Midwest regions. A higher socioeconomic index is associated with a greater chance of being active at leisure (OR = 1.72; 95% CI: 1.32; 2.23). **Interpretation:** Our findings suggest that actions to promote physical activity must also consider socioeconomic inequalities.

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Research

Incorporation of the precepts of Planetary Health in Nutrition scientific makings

Ana Maria Bertolini, Nadine Marques Nunes-Galbes

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Background: The Modern Nutrition Science was built on bases of a reductionist paradigm and inspired in the precepts of the biomedical model as a field of practice. However, such bases and precepts have proved to be insufficient to respond to the current challenges that spread in different domains and scales over humanity and threaten life on Earth. Thus, it's necessary and urgent to improve and adopt a new paradigm, which proposes to transform Nutrition into a holistic, systemic and transdisciplinary in both the scientific and practical spheres, in which the principles and objectives of Planetary Health are preponderant. **Methods:** Understanding food and nutrition from the perspective of Planetary Health leads to comprehension that how we think, produce, handle and consume food today are extremely relevant topics to reach health, well-being and equity for Earth's human and natural systems. In this sense, researchers in Nutrition are revolutionizing their scientific practice by adopting innovative research methodologies, in order to integrate a multidimensional interpretation of sustainability. **Findings:** Two PhD projects, currently developed in the Environmental Health Department of School of Public Health, University of São Paulo, Brazil are examples of this new Nutrition Science, both grounded in an inter and transdisciplinary research approach, which translates into its qualitative and quantitative nature. The first one seeks to understand how the interactions between food, environment and health are expressed in urban contexts and their relations between global local. The second seeks to identify, through discourse analysis and machine learning techniques, the dominant scientific paradigm in the discourses of social actors in the food field and how sustainability is or isn't present in them. **Interpretation:** Through the development of these researches, we seek to improve Nutrition Science so the construction of scientific evidence can support adequate and feasible solutions for a more equitable, sustainable and healthy world.

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Research

Agroecology as a way of promoting human and environmental health in a region affected by mining

Anabele Pires Santos, Anelise Andrade de Souza, Marisa Alice Singulano, Maurício Leonard de Souza

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We present agroecology development projects in the municipalities of Mariana and Ouro Preto, located in the region of Quadrilátero Ferrífero in the state of Minas Gerais, Brazil. This region has historically been affected by mining and has recently been hit by some of the worst environmental disasters on the planet, caused by mining companies. In this context, we seek alternatives for the occupation of the territory based on activities capable of contributing to the health of the planet and the local population. The projects we present - the Center for Studies in Agroecology (NEA Inconfidentes) and Circular Agricultura - are guided by the understanding that agroecology is an activity with the potential to contribute to environmental recovery and to promote health and safety food and nutrition for the local population. The NEA supports agroecology development projects with local family farmers and Circular Agricultura promotes the commercialization of the agroecological production. The both projects also play an educational and cultural role related to clean production and healthy food consumption. The report we present consists of a systematization of experiences, in which practice is a potential part for the production of knowledge and for social transformation. Some of the main results achieved, after about five years of activities, are: productive diversification, creating alternatives for generating work and income through agroecological family production; recovery of areas impacted by mining, contributing to the maintenance of the region's socio biodiversity; promotion of the popular economy and safety food and nutrition, creating spaces that facilitate access to healthy food, free of pesticides and fairly to the local population. It is also noteworthy that these projects are the result of a collective construction between community and the local university and they can generate important changes in the socio-environmental, economic and health structure of the population.

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Research

Landscape connectivity for yellow fever: a proxy approach to detect displacement and circulation through environmental corridors and interfaces

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Research

Building design, comfort, and health: An urban refuge for heat waves*Bianca Bonachela de Oliveira, Denise Helena Silva Duarte***How to cite:**

Oliveira, B.B.d., Duarte, D.H.S. (2022). Building design, comfort, and health: An urban refuge for heat waves. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (p. 96). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance. <https://doi.org/10.5281/zenodo.6373367>

As a consequence of climate change, extreme weather events have become more intense and frequent; addressing this scope locally in São Paulo, this study focuses on the consequences brought by heat waves within the urban environment, highlighting the risks that prolonged exposure to intense heat can bring to the human body, primarily to the most vulnerable population (elderly and children), and, mainly, how the urban environment and the buildings can maximize or soften the adverse effects caused by heat waves ameliorating the urban microclimate. With the aim of designing an urban refuge for heat waves, the study was planned into two stages: the first part consists of theoretical research and data raising and the second consists of a design exercise. In the first stage, the main concepts of urban climate are discussed (climate change, heat waves, urban climate, microclimate and urban heat islands) and the work presents a brief contextualization on how some cities have been adapted to climate change and urban density expected for the coming years through large-scale urban planning premises. The second stage is the design exercise of a public buildings complex within the city of São Paulo that functions as a “cooling center” or “urban refuge” to the heat waves inside a hot spot location previously identified through a thermal surface temperature map of the city. The idea is that this urban refuge explores as main design premises: (1) interconnection and incorporation of vegetation in the building based on the literature that points out positive cooling effects that green can bring to the local microclimate, including immediate surroundings; (2) study of design and materiality for the building that provide comfort to the user; (3) explore and incorporate sustainable design concepts in the building that provide natural resources economies.

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Research

Food security and sustainable urban planning for resilient and healthy cities: a multiple case study on ten Brazilian cities using computer-assisted qualitative data analysis software

Debora Sotto, Arlindo Philippi Jr.

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Background. Urban resilience, or a city's ability to keep functioning while facing shocks and stressors, is an essential element for urban sustainability. In Brazil, 85% of the population lives in cities. The country faces significant environmental hazards, mostly related to climate change, as well as structural social inequities, economic and political instability. Against this background, Brazilian cities must introduce resilience strategies in urban planning and management to provide a safe, healthy, and sustainable environment for all their inhabitants. Food security is a crucial element of urban resilience. In Brazilian cities, estimates indicate that 7,7 million people already face severe food insecurity. Local food production and distribution strategies are essential for cities to efficiently respond to stresses and shocks whereas preserving public health and urban quality of life. Urban planning and local food security promotion are within Brazilian cities' legal scope of action. The coordination of these two public policies provides invaluable opportunities to strengthen urban resilience. **Methods.** In this context, the proposed investigation aimed to verify if and how Brazilian cities coordinate their urban planning and food security strategies to promote urban resilience and what accomplishments stemmed from this coordination. Developed through a multiple case study covering ten Brazilian cities, the investigation comprised data surveys on public policies documents and indicators followed by the qualitative analysis of the collected data using Computer Assisted Qualitative Data Analysis Software – CAQDAS. **Findings and Interpretation.** The results showed that eight of the investigated cities did set up coordinated strategies in urban planning and food security promotion in their respective public policies plans and programs, with some emphasis on climate change adaptation. However, an in-depth policy assessment proved to be unfeasible due to the lack of official data on policy implementation and monitoring, areas in which all the investigated cities need to make urgent improvements.

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Project

What are the environmental impacts of policy responses to the Covid-19 pandemic? A systematic evidence map

Olwenn V. Martin, Jashika Nirmalan

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Background: The COVID-19 virus has led to measures worldwide in response the developing pandemic including; the closure of schools and workplaces, the cancellation of public events, public transport closures and restrictions on internal and international travel, and face covering policies. These restrictions have also impacted the economy and the behavior of society, ultimately impacting the environment. Understanding the environmental impacts of such restrictions is crucially important at a time when governments are designing 'build back better' economic recovery policies. The aim of this systematic evidence map is to highlight both our current understanding of the environmental impacts of responses to Covid-19 and remaining research gaps. **Methods:** A systematic evidence map methodology will be employed to analyze the impacts of a variety of measures and restrictions and associated environmental impacts. Both beneficial (e.g. reduced air pollution) and detrimental impacts (increased medical waste) of Covid-related measures and restrictions have been reported in the scientific literature. Search strategies will be developed for at least 3 literature databases (Web of Science, PubMed, Scopus). The retrieved literature will be screened according to well-defined inclusion and exclusion criteria. Data will be extracted from eligible studies to develop a matrix of Covid-responses and environmental impacts, recording relevant information such as geographical location. Findings will be presented using interactive visualizations using the Tableau software to allow easy comprehension of the current state of the evidence including data gaps and retrieval of bibliographic and other information about eligible studies. **Interpretation:** This rapid evidence synthesis should inform economic recovery policies that actively avoid or limit environmental impacts that have contributed to the emergence of the virus in the human population and/or the severity of symptoms.

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Project**Conservation Units to promote Education and Well-being of students from public schools from São Paulo State, Brazil**

Flávio Berchez, Beatriz Laham, Camila Lira, Carmen Gattás, Donovan Humphrey Franco, Grayce Helena Souza, Luís Arruda, Maria Carolina Novaes, Vivian Viana

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Education in natural environments, in addition to creating emotional links with nature, also promotes gains in health and well-being, providing contextualized learning. The actions of the Coastal Ecosystems Project (Institute of Biosciences and Science and Technology Park of the University of São Paulo) are inserted in this context, based on educational networks linking the University, Protected Areas (PA) and surroundings public schools, under the integrator theme “global climate change”. The Project aims to develop, apply, evaluate, and multiply transdisciplinary and continuous educational models, using natural areas as environments for learning, involving all participants in the network. Each model has holistic and transformative objectives, based on students' active learning. In addition to the development of these protocols, the Project offers, for PA experts, students from USP and participating schools, training and certification as environmental monitors qualified to apply the models. PAs are responsible for making it possible for the students from the schools to travel and to develop activities supported by their team, previously trained by the university. Since the schools have received courses and support from the teams at PA, their role is to engage its students at pre-and post-visit activities. Between 2016 and 2019, the Project engaged 144 public schools (mainly at Ubatuba, Peruíbe, and São Paulo Municipalities), 344 teachers, 6,508 students, and 135 monitors, including 3 Centers of Indigenous Culture and Education and related schools, 7 educators and 15 students. Therefore, the Project has promoted the strengthening of this network, fostering public access to the PA through the public schools' engagement to Environmental Education activities, under the role of university extension practices. This collaborates, thus, with cognitive gains and participant's wellbeing, consolidating the bridges for Planetary Health.

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Research

Impacts of offshore seismic survey on artisanal fisheries and conflicts with small fishing communities

Fontes Nuno Eduardo Paulo, José Eduardo Matheus Evora, Marcelo Montaña

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The Offshore oil and gas exploration activities contribute significantly to global economic growth. However, in recent years the scientific community has shown a concern about the environmental and social impacts associated, in particular, to offshore seismic surveys. Furthermore, the immediate economic impacts on the structure of small fishing communities, another major concern is directly related to food security, once, fishes are usually the community's main, if not the only source of animal protein. Thus, the current work sought to contribute to the understanding of the events chain that link such conflicts to their causes, using the elaboration of impact diagrams as a supporting technique. The study was based on research of information and data collection that involves different techniques: extensive literature review, document analysis and interviews with the main key actors that work in the environmental licensing process of offshore seismic survey activities. The study demonstrates that seismic survey changes the pattern of spatial distribution of marine fauna species due to sound pulse emissions of seismic data acquisition, it was found as one of the main triggers of negative impacts on artisanal fishery and, consequently, a major cause of conflicts with the communities. Moreover, in general, seismic survey take place in short period of time, for this reason, it was established a well-defined spatial distribution of the seismic survey activities, it lead to the adoption of the temporary restriction area in the use of maritime space as an operational security measure in order to avoid accidents between vessels, this interdiction, sometimes does not allow the access to traditional fishing for their activity. In few cases, however, environmental studies have succeeded in defining the fishing territory with greater precision in relation to both its geographic distribution and the period of the seismic survey data acquisition. Thus, allow establishing restrictions on the seismic activities. In any case, it is clear that the weak participation of the fishing communities during the decision-making process for environmental licensing of seismic activities contributes to the intensification of the identified conflicts.

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Research

Preventing infectious diseases at the community level: an asset ecosystems approach

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Planetary Health

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Project**Medical Education for Planetary Health - a pilot project at the Federal University of Health Sciences of Porto Alegre***Graziella Moraes Machado, Airton Tetelbom Stein, Abner Willian Quintino de Freitas***How to cite:**

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Climate change is a threat to human health, with impacts on all organic systems and with implications for both quality of life and morbimortality. Although climate-driven environmental exposures are known to influence the pathophysiology of diseases emphasized in the preclinical years of medical training, medical education is slow to provide fundamental content to adequately prepare future doctors for the challenges they will face in providing care, in prevention and treatment of injuries related to climate change. In this perspective, the Brazilian reference document “Lancet Countdown” brings as one of its recommendations the need to integrate the impacts of climate change on health into the training curricula of health professionals, suggesting that the theme Planetary Health and the concepts related to the impacts of climate change on health should be included in the university's basic curriculum. In order to incorporate content related to planetary health into the preclinical curriculum of medical graduation and to build competencies and skills in subsequent clinical years, this work highlights the unique role of medical students in becoming protagonists in actions in planetary health and proposes a disseminated and progressive discipline model throughout the curriculum, in the form of theoretical-practical modules, to be taught to medical students at the Federal University of Health Sciences of Porto Alegre (UFCSPA) through a pilot project already in progress and in partnership with professors and postgraduate students. The target audience of the project are undergraduate students from the first to the fourth year of the UFCSPA Medicine course. The proposed curriculum will benefit students and, above all, patients and communities served, providing future doctors with a growing evidence base on the impacts of climate change on human health.

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Research

Survey on Market Traders' Perception on Waste Management and its Health Implications at Ijora Fish Market, Lagos, Nigeria

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Background: Working and living in an unhealthy environment as a result of poor waste management practices is known to be a leading cause of non-communicable and infectious disease outbreaks. This is a global problem estimated to cause 12.6 million global deaths according to the World Health Organization. Yet in many parts of the world, particularly in Nigeria, where the problem is relatively high, its implication is still not well understood. This research, using a One Health approach, aimed at understanding the perception and knowledge of waste management practices and its health implication of market traders at Ijora Fish Market, Lagos, Nigeria **Methods:** A standard questionnaire and interview method were used to obtain relevant information from the participants. These data were analyzed using descriptive analysis. **Findings:** A total of 80 participants were included in the final analysis, 47 males and 33 females from four geo-political zones in Nigeria. High numbers of these participants understand the health implications of poor waste management practices but not quite much on proper waste management practices. **Interpretations:** This research highlights three important findings. First, we discovered the Market traders are faced with the challenges of waste management. Second, the fish market traders seem to have little knowledge of waste management practices. Third, the quality of waste management practices is of serious concern. Our findings underline the need to preserve this “wet” market from the risk of disease outbreaks, it is imperative to address the problem of poor waste management practices through increased advocacy and continuous project to optimize waste management practices and reduce the risk of disease burden in Africa—this is in line with planetary health agenda.

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Research

Effects of plastics in the food system on human health, food security, and the environment: a systematic scoping review

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Planetary Health

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Project

Empowering food literacy and building community one dish at a time

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Newcomers to Canada struggle to access culturally relevant and nutritious meals while adapting to Canada's food landscape. This is an issue as replicating ethnic diets while adjusting to life in a new country can aid in feelings of homesickness, support physical and emotional wellbeing, and promote cultural sustainability for many individuals. From locating grocery stores to finding ingredients, overcoming language barriers or feeling ashamed to ask for help there are many barriers newcomer populations face in engaging in the occupation of cooking. As such Converse and Cook, a non-profit organization enlisted the help of newcomer and international students residing at the University of Alberta to help in creating a framework for a cooking class to support food literacy for this population. These students came up with a by-community-for-community group style cooking class where participants, both international and domestic to Canada and with various cooking skills, cook in teams and everyone eats the prepared together. Converse and Cook volunteers worked with interested newcomer populations to support them in facilitating a class on their ethnic cuisine. While we had hoped these classes would empower newcomer populations to cook, what we found in feedback from running these classes was that while most participants signed up to learn to cook, the most enjoyable and valuable aspect of the classes was socializing and meeting new friends. Many participants saw the classes as a way to foster social support, which enhanced their food literacy. As such Converse and Cook realized that through these classes, we were creating social spaces where people felt empowered to explore their connection to community and identity through food. As these classes are easy to replicate, by sharing our methodology and feedback from participants other organizations can consider running this type of programming to support community building in their neighborhoods.

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Research

Model towards sustainable circular economy: Brine sludge from a chlor-alkali industry management

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The continuing population growth, booming economy, rapid urbanization, and rising standards of consumption have caused environmental degradation, including the generation of huge amounts of solid waste. The uncontrolled dumping of wastes causes irreparable damage to the surface and groundwater, air, soil and has become a matter of serious concern for the protection of the environment. To address this persistent problem, a circular economy is proposed to mitigate resource shortage and environmental pollution. The chlor-alkali process is one of the world's largest chemical processing industries. Brine sludge is the waste generated during chlorine and caustic soda production, which contains several chemical compounds (magnesium hydroxide, calcium carbonate, silica, etc.), and is disposed of in landfills. These compounds can leach out, thereby affecting the ecosystem. The disposal of brine sludge can be avoided by transformation into material added value. For this process to be successful, the first step is to carry out waste characterization studies and then propose a potential application as a by-product with an associate market value. The characterization of two brine sludge samples of different origins was performed in terms of chemical and physical composition, particle size distribution, X-ray diffraction, FTIR, and thermal analysis. The results indicated that brine sludge samples have the potential to be used as limestone filler and binder alternative to Portland cement, in the nonstructural construction materials (paver blocks, mortars, and bricks) due to its fine granulometry as well as a significant amount of limestone. The incorporation of brine sludge samples in geopolymeric materials is another possible use in sustainable construction material products. The waste management strategy for manufacturing eco-friendly construction materials adopted by the chlor-alkali industry will contribute to the sustainable development goals (SDG's), specifically, SDG 12: "Reduce waste generation through prevention, reduction, recycling, and reuse".

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Project

Contraception and Consumption in the Age of Extinction: U.S. Survey Results

Kelley Dennings

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Introduction: Over the past two centuries the Earth's human population has increased from 1 billion to more than 7.6 billion people today. Over the past 50 years, as human populations have doubled, wildlife populations have plummeted by half. The U.S. is 5% of the world's population but uses 30% of all resources and creates 30% of all waste so every person born here has an outsized impact on the environment and half of all pregnancies in the U.S. are unplanned. So even though our fertility rate is not as high as those in other nations, we still have a lot of work to do to take full responsibility for our reproductive futures. Which is why the Center not only advocates for policies and has campaigns related to consumption, we also advocate for and have campaigns supporting the full range of contraceptive methods (including abortion), comprehensive sexuality education and gender empowerment. These human-right solutions support women and happen to be good for the environment. Objective: In order to understand how people in the United States perceive their impact on wildlife and the environment and these interconnections with health, the Center for Biological Diversity conducted a nationally representative online survey. Researchers, academics and activists acknowledge population growth and consumption affect the environment, but few social scientists have studied what the general public thinks of these subjects. This research fills that knowledge gap. Results: The survey's key findings are broken down into four topics: population, family planning, climate change and consumption. It isn't either/or. Some narratives say that population growth is mainly responsible for the rapid loss of species biodiversity while others say it is consumption. The Center focuses on both topics but we were interested in knowing what the general public thought. From our survey, you can see that 60% see the issue as being both too. Of this 60%, 66% believe the world's population and the world's consumption is responsible. Strong attitudes around topic. When you put the results of four questions together you see that around 70% of survey respondents somewhat agree or strongly agree that the world's population is growing too fast and it is driving other animals to extinction. They believe that stabilizing growth would protect the environment and if it is true, we have a moral responsibility to act. Disconnect between what is said versus what is done. Most respondents (74%) say Americans consume too many natural resources. This sentiment grew by 26% since a similar survey was conducted in 2013. However, nearly half of respondents (48%) also believe they personally consume less than the average American. Climate change is being cited as a reason to have fewer children. We asked people to state your agreement or disagreement with the sentence "Climate change compels Americans to choose to have fewer children". 33% somewhat or strongly agree with this statement. Healthcare is imperative. Lack of healthcare access was the most critically important topic for survey respondents. Eighty percent agree that all types of birth control should be legal, free and easily accessible. Additionally, 68% of respondents agree that immigrants, people of color and other

marginalized communities lack access to healthcare. Intention-Behavior Gap. We asked about advocating for federal and state contraceptive policy and local sex ed policy. We calculated the intention behavior gap for various topics where someone may need more information before acting. The Center's goal is to create campaigns to help overcome that gap. Conclusion: This research will inform our future work to motivate others to take action. 1. Get involved in democracy. Support various policy options. 2. Support fights for justice whether that be racial, gender, reproductive or environmental 3. Support reproductive rights and education. 4. Have "the talk" with your partner, healthcare provider or a trusted friend. 5. Help end the carbon economy through renewable energy, a sustainable food system and by conscious consumption.

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Research

COVID-19: A Cross-Sectional Study Analyzing Students' Perceptions of Life During the Pandemic

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Background: United Nations' Sustainable Development Goals address global challenges considering human, social, environmental, infrastructure, economic and political issues. Societal influences and its increasing complexity add to the challenges of interactivity promoted by globalization. The novel coronavirus has demonstrated the vast differences among cultures in the response to a pandemic. This study was designed for research and educational purposes to compare the influence of cultural differences on COVID-19 prevention strategies. We consider this study a feasibility pilot to inform future educational efforts in intercultural learning for public health and medical students. Methods: Students participating in COIL (Collaborative Online International Learning), consisting of a partnership between the Federal University of Pernambuco in Brazil (n=55) and the SUNY Downstate School of Public Health in the United States (n=53), were surveyed. This anonymous online survey (October-November 2020) was intended to assess cultural influence as risk factor for COVID-19 personal prevention behavior, students' perceptions about life during the pandemic, and any illness experienced. Findings: Differences existed between US and Brazil students in degree type, employment, risk behavior, personal prevention procedures, sanitization perceptions, and views of policies. For example, US students were more likely to have been tested for COVID-19 (67.9% vs. 25.5%, $p < 0.001$), with testing being more widely available (84.9% vs. 65.5%) as well as more likely to be free of cost (75.5% vs 47.3%, $p = 0.012$). Students from Brazil were more likely to use washable masks (94.5% vs 75.5%, $p = 0.005$), whereas students from the US were more likely to use disposable masks (90.6% vs. 40.0%, $p < 0.001$). Interpretation: Cultural and social differences, risk messaging, and lifestyle factors may contribute to disparities in perceptions and behaviors of students around the novel infectious disease. Bridging the gaps in knowledge and making strides in international collaboration efforts could have the potential to increase health and wellbeing globally.

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Research

Protected areas and its guardians: gathering data from public schools for enhancing outdoor Environmental Education policy-making

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Creating protected areas and promoting its public usages are well-known activities that do contribute to the maintenance of the ecosystem services and, thus, it's benefits in human and planetary health. The engagement of public schools at outdoor activities in those areas is an important way for the strengthening of those efforts. Those kinds of activities are encompassed in federal policies, as the National Policy for Environmental Education and the National Conservation Units System, and undergo the process of regionalization of environmental management. Once the public policy cycle must comprise territory and social enactors particularities, this study aims to systematize teachers' perspectives regarding the development of Environmental Education activities at protected areas for the adjustments on municipal laws on this topic. Since there are no linear causal relations that determine social and environmental phenomena, this research is posed at the complex sustainability framework. For that, it looks forward the building of consistent tools for the evaluation of teachers' perspectives considering: i) the teacher's perceptions and conceptions on outdoor Environmental Education activities; ii) their perceptions on this topic's curricula embodiment; and iii) the school's internal organization for the collective and transdisciplinary pedagogical activities. Those axes correspond to the first level of a systemic approach, and comprehend the specific thematic variables for the second level of a systemic approach. The institutional pedagogical differentiation on teacher's perceptions, among São Paulo, Ubatuba and Peruíbe municipalities, sheds light on the specific needs for fostering adequate public policies for those interinstitutional activities. The forehanded results suggest that teachers from schools which have been engaged at those activities perceive less difficulties at finding human resources and engaging other teachers at collective work than teachers from schools which have not participated in those activities. Among the next steps, the gathered data will be compared with the current policies.

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Research

The potential use of cemeteries as urban green areas of climate and sound amenities

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Large metropolises around the world are suffering with climate change and the lack of microclimate amenities. Globally, the emission of greenhouse gases is the main driver of the warming climate and local phenomena are worsening these effects in urban areas, consequently increasing the energy demand for cooling. To produce more energy, thermoelectric power plants, even more common in Brazil, emit more gases, generating a detrimental heating cycle. One of the strategies to mitigate the urban warming is the increase of urban green. Urban trees decrease surface temperatures through shading, besides contributing to heat the air less due to lower surface temperatures and evapotranspiration. But where to find spaces for planting under an increasing population and built density in urban areas? Following this questioning, this work proposes the potential use of cemeteries as true urban green areas, aiming to increase not only climate amenities and quiet spaces within the city, but also learning and leisure spaces for the population, exploring microclimate and soundscape design strategies. To this end, data from all public cemeteries in the city of São Paulo were raised and analyzed, encompassing the existent vegetation, nearby green areas, demographic density and building heights in the surroundings and average surface temperatures. Therefore, it was possible to select and classify the cemeteries which could provide greater benefits if they were converted into green and quiet areas, being the Quarta Parada, Consolação, Santana and São Paulo the most relevant ones for these purposes in São Paulo. Among them, the cemetery of the Quarta Parada was selected for proposing a landscape and soundscape design project. Also, the research highlighted the environmental impacts the cemetery generates in its current configuration and the proposal addressed how to mitigate them, under the current and future pandemics.

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Research

Temporal trends of dengue in hyperendemic areas

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Abstract: This study aimed to establish a temporal analysis of cases and deaths from dengue in Belo Horizonte, State of Minas Gerais, Brazil, from 2007 to 2019. The time-series study analysis used cases reported from the Information System for Notifiable Diseases (Sistema Nacional de Agravos de Notificação - Sinan) of the Ministry of Health, to test and validate the Seasonal Integrated Autoregressive Moving Average model SARIMA (3,1,1) (0,0,0)₁₂ which predicted the incidence of dengue in 2020. The increase in the number of cases and deaths and the simultaneous circulation of the virus characterized the hyperendemic, with epidemic peaks in 2010, 2013, 2016 and 2019 and higher seasonal intensity in March and April. Prediction of cases by local health services allows the anticipation of control measures necessary to face epidemics in subsequent years. **Keywords:** time-series, dengue, epidemic, prediction.

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Research

Correlation between air pollution in São Paulo with hospitalizations in diabetes mellitus patients with COVID-19

Mariana Machado, Lucca Nielsen, Marcus Vinícius Prates, Mariana Matera Veras, Lourdes Conceição Martins, Luiz Alberto Amador Pereira, Nathalia Villa dos Santos

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Air pollution leads to premature death for more than 7 million people annually worldwide and its direct effects on different organs and systems are already known. Air pollution can cause metabolic dysfunction by increasing oxidative stress in adipose tissue, increasing the risk of diseases such as type 2 diabetes mellitus. Studies show that cases of diabetes of recent onset, as well as acute and severe metabolic complications of diabetes preexisting, were observed in people affected by Covid-19. These manifestations represent a complex pathophysiology of diabetes related to Covid19. Air pollution can preserve the viability of Sar-Cov2, increase its potential for infection and facilitate transmission through interaction with the particulate material present in the air. Therefore, a small increase in long-term exposure to pollutants can lead to a large increase in the mortality rate due to COVID-19, especially in groups already susceptible to the harmful effects of pollution. Based on a short-term assessment, the method chose was an exploratory study of COVID-19 hospitalizations between March and December 2020 in São Paulo, Brazil. Information from COVID-19 hospitalizations were obtained by daily bulletins of the State and information on air pollution and climatic variables (PM 2.5, PM 10, temperature and humidity) were obtained from the Environment Company of the State of São Paulo (CETESB) monitoring station of Marginal Tietê. The total number of hospitalizations was 10.484,466 and of those cases, 19.212 had pre-existing diabetes. Generalized linear polynomial distributed lag model was used to assess the effect of pollutants on the outcome. The results show that there is an association between cases of hospitalization of COVID-19 with diabetes and an increase in air pollution.

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Research

Project Providence: real-time acoustic monitoring of biodiversity and implications on human health

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Background - Wildlife acoustic monitoring has become a valuable tool in studying ecological communities and a robust proxy to assess ecosystem health. Advances in electronics have allowed the development of autonomous low power systems that can store and analyze large amounts of data 24/7 over long time periods, using machine learning techniques that automate acoustic event recognition and contribute to building ecoacoustic indices. **Methods** - This approach allows to characterize soundscapes by identifying vocalizing species, tracking animal acoustic activity, estimating population sizes, establishing indicators of biodiversity, looking at interactions with human activities and understanding changes due to climate change, etc. Establishing a baseline for soundscapes at a particular location and identifying deviations from this baseline can represent a strong indication that the ecosystem has become unbalanced through a deterioration of the local environmental conditions. **Findings** - Project Providence, a research project that started in 2016, is currently monitoring biodiversity in Mamirauá Sustainable Development Reserve, in Central Amazonia, Brazil, through automated real-time acoustic monitoring stations. Mamirauá Reserve promotes the conservation of biodiversity as an integrated process that includes scientific research and participation of local traditional populations in the management of natural resources. Loss of habitat and biodiversity directly affects the health and food security of local traditional communities with direct effects on nutrition and medicine. **Interpretation** - Here we present results of the acoustic classification of critical species and the establishment of a soundscape baseline through various ecoacoustic indicators applied to a flooded rainforest context. These results will allow researchers and stakeholders to track the ecological health at the Mamirauá Reserve throughout the coming decades and help identifying potential threats to traditional people's welfare. Monitoring biodiversity through bioacoustics to characterize soundscapes may prove to be a reference approach to other tropical terrestrial and freshwater systems that are under increasing human pressure.

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Project

Mobilising health students for climate and health justice

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We are a network of health students across the UK, campaigning for a just and fair world in which health equity is a reality for all. In 2019, we realized that health justice could not be achieved without climate justice, and we needed to mobilise. Since then, we have learnt how to organize young people nation-wide for a topic they are taught to believe is outside of their remit as clinicians. Our goal remains to mobilize the health community to fight for climate justice for all. The importance of building capacity has proved essential. Our members needed the skills and confidence to be advocates for climate action, not just passion. For us, this meant conferences, webinars and blogs. But we realized that all health students need to be taught this, every year, in every medical school. That's why we are organizing a nationwide movement to get climate change and health on the curriculum. Knowledge isn't enough - we needed to act. We recently co-led a national campaign for health and climate justice at COP26, culminating in a letter from the health community to the UK government and COP26 leadership, which obtained over 1100 signatures and BMJ publication. Mobilizing a decentralized base of health students for a common goal was highly effective. Young people are often left out of decision-making, and climate change and health is no exception. In 2021, we are launching a national research project to collect the views of youth across the country, and advocate on their behalf. Finally, movement building has proved a valuable role for us as young people spread across the youth, climate and health movements. We can only achieve the system change needed to overcome climate change by bringing together a mass movement of all those working on justice and equality.

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Project

Eco-ed: Driving change in the climate movement by empowering youth leaders

Sabhyata Sedhain, Q. Ma, V. Y. Li, B. Mandal

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Eco-ed is an experiential learning based educational program designed for low-resourced secondary school students in Nepal. Through building activities and discussions pertaining to climate change, the aim is to inspire and empower young people to take initiative as leaders in the climate movement. Throughout this 4 week program, with one 2-3 hours long session per week, topics such as sustainability, environmental health, circuits, and design thinking will be covered. Students get an opportunity to apply the concepts they learn in class in two ways: 1) building a self-constructible air-filtration device, and 2) working towards a pitch for their own solution to a community based climate problem using the steps of human-centered design. Enabling students in low-resourced schools to take action, where the impact of climate change is only exacerbated, drives change in these neglected communities. By making pupils acutely aware of the broad implications of climate change enough so that they feel compelled to act, giving them foundational knowledge and skills needed to brainstorm solutions through class discussions, and instilling confidence to apply the concepts they've learned to projects with real-life implications, we hope to give young pupils all the tools they need to initiate climate based change in their communities and emerge as leaders in the climate movement. Having seen our curriculum, 3 schools in Nepal have agreed to have our sessions delivered to their students and classes will start at the end of January 2021. Keywords: environmental education, sustainability, STEM education, neglected communities

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Project

Executing One Health activities around COVID-19 pandemic – Africa One Health University Network (AFROHUN) Kenya 2020 experience

Samuel G Wanjohi

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The Africa One Health University Network (AFROHUN), formerly One Health Central and Eastern Africa (OHCEA) is a University led network of 24 public health, veterinary medicine, pathobiology and environmental health institutions and 18 universities in 9 countries across Africa. AFROHUN supports changes in teaching and learning environments in institutions of higher learning that promote One Health approaches. The complex nature of the COVID-19 pandemic, with unintended consequences emerging from implementation of mitigation measures, brought disruption to the human socioeconomic systems in most countries, at a scale not witnessed in the recent history. Following the first case of COVID-19 was reported in Kenya on the 13th day of March 2020, various restrictions and measures were implemented in line with the WHO guidelines and recommendations. These included restriction of movements through dusk to dawn curfews and partial lockdowns, ban on public and mass gatherings and closure of all learning institutions. This brought a period of uncertainty and unpredictability in the implementation planned activities, essentially centred around faculty, students and community engagement. In response to the disruption, practical, adaptable, innovative and dexterous interventions were undertaken, through swift decisions that facilitated and supported activity modifications, innovations and exploitations of emerging opportunities e.g., the online video conferencing platforms. Virtual events were held in the midst of various challenges, and results achieved that included facilitating: the refining and development of training curricula and manual for pertinent One Health challenges; multidisciplinary teams of students across various universities in Kenya to develop software prototypes for use by varied frontline health workers in the public and private sectors to respond to One Health challenges including pandemics and other infectious diseases; training on COVID-19 for non-clinical frontline public sector health workers over the course of several days; and various One Health assessments. Several lessons were drawn including capitalizing on innovations and technology, promoting coordinated and collaborative approaches and leveraging on teamwork and networks.

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Research

Perception, attitudes and the risk factors of obesity in India: a mixed methods approach

Somdutta Barua

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Background: The roots of obesity run deep and are multifactorial. Presently, the obesity rate is rising in developing countries, rapidly in India, especially in urban areas. To view this problem holistically, this study is conducted on individuals with excess weight to study their perceptions, health behaviours, and the risk factors of obesity in Kolkata, one of India's major cities. That may facilitate intervention to bypass additional health risk and complications. **Methods:** This study resorted to concurrent mixed methods approach collecting and combining quantitative survey (n=120) and qualitative interview data (n=18). To address this study's objectives, women and men aged 25-54years with a waist circumference of 80cm and 90cm or higher, respectively, and BMI of 25 or higher have been selected. **Findings:** Participants generally indicated that poor lifestyle, family history, social relations, stress, time-poor and technology influence the risk of obesity. Participants also believed the lucrative food industry, lack of health awareness programs, weather conditions resulting in low participation in physical activity as the environmental factors influencing obesity. Heart diseases, hypertension, cholesterol, diabetes were some of the health complication cited frequently. Most participants claimed to participate in light and moderate-intensity physical activity, however, a discrepancy in opinion was observed between survey and interview participants for their dietary behaviours. Making better lifestyle choices, accessibility to 'healthy' food, raising awareness were some of the participants' suggestions on prevention. **Interpretation:** Findings suggest participants had just a basic understanding of healthy behaviours. However, they were not aware of the association between obesity and cancer. Participants were also often faced with some environmental and social challenges influencing their attitudes towards health. Contradiction in dietary information perhaps suggested poorly worded survey questions or lack of nutritional understanding. Awareness is fundamental, while intervention programs should focus on individual lifestyles and choices while considering the environmental and social situation. **Conclusion:** Awareness is fundamental, while intervention programs should consider individual lifestyles and choices, the environmental and social situation.

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Project

Teaching Culinary Medicine

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Carvalho-Oliveira, R., Dantas, K. C., Kubrusly, M. S., Zembruski, P. S., & Mauad, T. (2022). Teaching Culinary Medicine. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (p. 119). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance. <https://doi.org/10.5281/zenodo.6373367>

Diet plays an important role in the pathogenesis of the Chronic Non-Communicable Diseases such as diabetes, hypertension and obesity. Healthy diets are on the other hand source of disease prevention and management and beneficially impact the environment. Medical students should learn about dietary patterns and lifestyle habits, to better understand disease pathogenesis and promote planetary health. In Brazil, nutritional education, however, is not part of the medical curriculum. Culinary medicine (CM) joins the art of culinary with the science of medicine, aiming to educate medical students on the hands-on preparation of healthy diets, to further better counselling their patients in this topic. At USP Medical School, there is a 20-hour elective discipline on Culinary Medicine since 2019, offered virtually in 2020 due to the pandemic. To our knowledge this is the first discipline on the topic offered in Brazil. Thirty-three students attended 5 online modules on salt, taste and consistency, protein, fat and carbohydrates and food biodiversity in November 2020. They were invited, after seeing the inverted classes on medical background and cooking on the given topic, to cook at home. The recipes were then presented and discussed in a synchronous meeting with doctors, nutritionists and chefs. Before and after courses the students were asked to answer a questionnaire about their perception of the importance of food in medical practice. The possible differences between before and after cursus were tested using the Kruskal-Wallis test. The level of significance for these analyses was set at 5%. Eighty-four percent of the students answered that the discipline met their expectations. Before the discipline, 28% of the students perceived the importance of their eating habits to health, that increased to 79 % in a substantially manner after the discipline. The % of students that considered themselves able to give a better counseling to patients after the course increased from 62.5% to 89.5%, although with degrees of certainty. Many students reported that the activities of cooking were important during the quarantine, evoking childhood memories and family recipes. The most appreciated module was the biodiversity module, where students were encouraged to cook with non-conventional (parts of) vegetables, and to reduce food waste. This preliminary survey showed that the CM discipline was able to catch the attention of the student to the topic of healthy, sustainable eating and improved their confidence in transmitting notions of healthy eating to family and future patients. In some countries like the US, Culinary Medicine has been gaining enormous importance, with more than 55 medical schools offering the discipline. In Brazil, we have the opportunity to explore topics like the enormous and unexplored regional food biodiversity of the country, food waste, food insecurity and the important link between food production and sustainability, topics that were well received by the students.

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Project**Community garden: fostering food security, place attachment, and wellbeing in previously displaced population***Ulises Charles Rodriguez***How to cite:**

Rodriguez, U. C. (2022). Community garden: fostering food security, place attachment, and wellbeing in previously displaced population. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (p. 120). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance. <https://doi.org/10.5281/zenodo.6373367>

Environmental change contributes directly and indirectly to conflict, displacement and migration. Research suggests that once in the host country, immigrants tend to have unequal access to urban nature and lower participation in mainstream outdoor activities. In this context, community gardens have been proposed as alternatives to promote immigrants' physical and mental health while fostering culturally appropriate food security, place attachment, and social inclusion. The aim of this community project is to contribute towards ecological justice by facilitating access to land for previously displaced population. A coalition was created with collaboration of the local refugee settlement program, refugee associations, and multi-sectorial partnerships in the city of Lethbridge, Canada. Local resources and possible solutions were discussed in early stages. Two actions were proposed: first, to create a refugee community garden; and second, to facilitate refugees' engagement with existing community gardens in the city. A developmental evaluation research will be performed before the project implementation. The aim of the evaluation will be to voice refugees needs, priorities, and preferences for the garden design and participation. The research design and data collection strategies will be decided by coalition consensus. Members of the Physical Activity, Transportation and Health (PATH) research group from the University of Lethbridge will lead the data collection and analysis in collaboration with other coalition members. The findings will be presented in the coalition meetings, then utilized to make the necessary adaptations to better suit refugees needs, priorities, and preferences in the project. Other finding dissemination strategies, such as manuscript submissions and conference presentations, will be discussed once the coalition priorities are set.

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Research

Global environmental change and planetary health in the curriculum of undergraduate health professionals in Latin America: a review

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PART VIII: Poster Session 3



Research

Breaking down the supermarket: Understanding the composition of ingredients representing the Australian packaged food and beverage supply

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Background: Unhealthy diets are underpinned by the over-consumption of unhealthy packaged products. An understanding of the ingredients in these products may provide further insight into product healthiness. We sought to define the list of ingredients used in the Australian packaged food and beverage supply and determine associations between the number of ingredients used and existing indicators of nutritional quality. Methods: Ingredient data were extracted from images of product packaging held within the Australian FoodSwitch system, representing the majority of packaged food and beverage sales in 2019. Statements of ingredients were disaggregated, creating separate fields for each ingredient and sub-ingredient. Ingredients were categorised and the average number of ingredients per product was calculated overall and for major food categories. Associations between the number of ingredients and both the nutrient-based Health Star Rating (HSR) and the NOVA level of processing classification, were assessed using 1-factor ANOVA. Results: 24,229 products, listing a total of 233,113 ingredients, were included. Products had between 1 and 62 ingredients (mean(SD): 9.6(8.3)). We identified 900 unique ingredients, which we organised into 17 major and 138 minor categories. ‘Additives’ were the ingredient category contained in the largest proportion of products (64.5%, (15,629/24,229)) and ‘Convenience foods’ was the food category with the greatest mean number of ingredients (20.0(10.1)). The mean number of ingredients per product was significantly lower in products with the optimum 5-star HSR (mean difference compared to products with 3.5-stars: -9.1 ingredients, 95%CI: [-9.7,-8.4], P-value<0.001) and significantly higher in products classified as ultra-processed (mean difference compared to products classified as processed: 5.7 ingredients, 95%CI: [5.4,6.0], P-value<0.001). Interpretation: The large market of Australian packaged products is constructed from a moderate number of different ingredients. There is a strong relationship between the number of ingredients in a product and indicators of nutritional quality and level of processing.

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Project

Narrative Prescription: A Practical Storytelling Guide for Health Care Professionals Taking Climate Action

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Abstract: Narratives expand our empathy and shape the way we think about the world. Stories can help us to envision how we are contributing to a changing planet, and the responsibility we have to improve our stewardship practices. In a unique collaboration with Health Care Without Harm and Practice Greenhealth, we have created Narrative Prescription: A Practical Storytelling Guide for Health Care Professionals Taking Climate Action. The workbook provides guidance on how to be an effective storyteller and drives action on health, resilience, and climate change. We believe every health organization needs a storyteller. To generate impact from all angles of the health care industry, our project invites professionals from all sectors to contribute their stories - physicians, nurses, chefs, receptionists, researchers, custodians and suppliers alike. The project supports health care professionals to craft narratives through written, spoken, and visual mediums, and offers suggestions and considerations to make these stories effective at targeting specific audiences. This storytelling guide has recently become accessible across North America, and has already inspired many health care professionals to share their climate action stories in dynamic ways. But we think this project can go even further, and hope it can benefit health care workers worldwide in shaping the climate narrative toward positive action. We know that many individuals and communities worldwide are already contributing to improving planetary health. It is our desire to make these stories known, so that our efforts can work symbiotically to shape a better story for our Earthly home. Through our poster session at the 4th Planetary Health Annual Meeting at USP, we hope to virtually share our guide with health care professionals beyond North America who are committed to planetary health, and pushing the climate agenda forward.

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Research**Urban agroforestry: how trees can contribute to local urban ecosystem, providing ecosystem services and improving human and planetary health***Ambrogio Zanzi, Stefano Bocchi***How to cite:**

Zanzi, A., & Bocchi, S. (2022). Urban agroforestry: how trees can contribute to local urban ecosystem, providing ecosystem services and improving human and planetary health. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (p. 125). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance.
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The expansion of urban agglomerates is causing significant environmental changes, with needs of sustainability keep growing, especially in megalopolis. In this context, urban forestry can play a crucial role to assure the provision of ecosystem services and benefits to the ones living in cities, as recognized by Agenda 2030 that, within the key-goals, includes also the availability of urban green spaces to foster both environmental and cultural improvements. However, although this importance is now clear, today there is a lack of methodology capable of assessing the ecosystem services provided by urban vegetation in a complete and integrated way. Starting from a particular case of study – a requalification project of a urban park in Milan – we have developed a new strategy and integrated tool to quantify the contribution of urban vegetation in providing regulating and cultural ecosystem services, considering not the singular species, but the overall agro-ecosystem, composed by multiple layers - soil; herbaceous; trees and water. First results show that, in a park of about one hectare, the presence of vegetation allows to reduce air pollution (23 kg O₃ and 2,4 kg of NO₂ removed per year), to stock a significant amount of Carbon (66,4 ton.), to limit run-off water, to offer to people an enjoyable public place for socializing, with a better perception of the surroundings. As it emerges also in a thirty-years simulation carried out, in the future the area will contribute to further ecosystem services. The protection of existing green areas appears a priority as well as the appropriate designing of new ones, especially in overcrowded urban areas, to improve the quality of life and health. The proposed methodology can be applied to other cases of study and it represents a useful tool in urban planning to boost the provision of ecosystem services and pursue planetary health.

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Research

Planetary Health and Bioethics: tools for the sustainability of the planet*Bárbara Braga Cavalcante***How to cite:**

Cavalcante, B. B. (2022). Planetary Health and Bioethics: tools for the sustainability of the planet. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (pp. 126-127). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance. <https://doi.org/10.5281/zenodo.6373367>

Background: The research developed in the last decades in the biotechnology and health areas is stimulated mainly by innovations in complex biomedical technologies, such as genetic advances, nanotechnology, use of new biomaterials, etc. However, little reflection has been given to the possible environmental consequences and, specifically, to the ethical, political and educational role that health professionals have in relation to the repercussions of these novelties in the environment and, occasionally - as the central object of this study - in raising awareness these professionals, based on the relationship between bioethics and planetary health. This conflict can potentially impact the quality of life of people and human societies - especially the most vulnerable - and compromise the survival of future generations. Ethics in its conception applied to the field of human life in its broad sense - that is, bioethics - has a transformative potential, because, through reflections based on its theoretical foundations, we orient ourselves towards decision making, enabling the reach of transformative perspectives about reality and about our individual and even collective-societal behaviors. Bioethics is wisdom, guidance, a compass for all human activity, a necessary tool for applying knowledge and protecting the entire ecosystem, including human beings. It is the integration of multiple knowledge, based on biology, capable of uniting progress, technology, and the survival of the human species to two worlds: the world of scientific facts and the world of human values. It is a reflection that recognizes the importance of innovations, but that, above all, respects the human being and the environment in which he lives, avoiding that science born at the service of the human being turns against him and enabling man to choose the path that avoids the natural processes that led past civilizations to collapse. Methods: This is a theoretical discursive study, which promotes critical reflections necessary for the transdisciplinary construction of a planetary science. The purpose of this study is to analyze the state of the art in relation to the responsibility of health professionals in the context of the theme of the environment, from the perspective of bioethics and planetary health. The hypothesis is that the reflections, dialogued from the perspective of the “Ethics of Responsibility”, worked by Hans Jonas, of environmental bioethics, based on the Universal Declaration on Bioethics and Human Rights and of the practice in planetary health, contribute to the awareness of professionals in the area about their role in caring for the environment and protecting future generations. To this end, the discussions raised were based on the transformative potential of bioethics, guidance and decision making, based on theoretical foundations and transformative perspectives on planetary health. The conditions for carrying out this research were favorable, in addition, the research was fully funded by the researcher and there were no conflicts of interest. Because it is a work that did not directly or indirectly involve human beings and/or animals, it was not submitted to a Research Ethics Committee. Findings: The current situation, with the planet in crisis, implies imposing moral and ethical duties on professionals in relation to the use of natural resources, evidenced in the search for the use of

bioethics as a theoretical-practical tool for the reflection of the paradigm shift. This reflection can be expressed in a healthy relationship between men and nature, revealing the central objective of the study, which is to build the possibility of practical application of a development model focused on sustainability based on the encouragement of environmental education, based on the ideas developed in planetary health. Today, it is no longer just a matter of protecting the nature of human actions, but of protecting human beings from an environment that has become potentially dangerous. Interpretation: It is believed that, through the structuring of the bioethical discourse and the deepening of the knowledge of its epistemological bases, it is possible to advance in the environmental debate and, with this, to advance in the understanding of the theme of planetary health, stimulating a new generation of professionals in the area, necessary for the new geological era, the Anthropocene. In this sense, the bioethics associated with planetary health is an important tool to be used by health professionals for moral deliberations related to the environmental crisis and the model of development and political turmoil that currently happens in Brazil. This scenario leads to the need to rethink the current model of professional training/competence of health teams, expanding the reflection, in order to consider the consequences of health care, as well as all productive activities, and their contribution to the generation of environmental and social and health impacts reinforcing the moral conduct of the individual not only in relation to his contemporary counterpart, but also to future generations. References: Potter VR. Bioethics, bridge to the future. EnglewoodCliffs, New Jersey, Prentice-Hall, 1971; Jonas H. O princípio responsabilidade: ensaio de uma ética para a civilização tecnológica. Rio de Janeiro: Contraponto; 2006; Organização das Nações Unidas para a Educação, a Ciência e a Cultura (Unesco). Declaração Universal sobre Bioética e Direitos Humanos da Unesco. Tapajós A, Prado MM, Garrafa V, tradutores. Brasília: Cátedra Unesco de Bioética; 2005; WHITMEE, Sarah et al. Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health. *The Lancet*, v. 386, n. 10007, p. 1973-2028, 2015; Garrafa V. Desafios e perspectivas da bioética latino-americana no contexto da Declaração Universal. 2005 (Conferência).

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Research

Land use/land cover changes and the effects on the biodiversity in the Upper Paraguay Basin (Brazil)

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The intensification and expansion of development projects over the territory is accompanied by conflicts that accumulate and increase the pressure on biodiversity, a process that has been verified in the Upper Paraguay Basin (UPB) mainly due to the growth of agricultural and livestock activities. In this context, changes in the ecological dynamics of the Pantanal are of particular interest due to the consequences on the provision of ecosystem services, socio-environmental conflicts and the displacement of riverside communities. Therefore, this work is focused on the environmental implications and conflicts arising from the expansion of agricultural and livestock activities in the UPB, taking into account the cumulative effects on biodiversity. The analytical work is based on the identification of the main sources of pressure on the environment, its primary effects, and consequences. It was found that the main impacts and cumulative effects on the structure of natural habitats are derived from the removal of natural vegetation cover triggered by deforestation, wildfire, and disordered land use, thus contributing to the intensification of erosion and consequent acceleration of the transport of nutrients and sediments that lead to significant changes in the dynamics of floods and the provision of ecosystem services in the Pantanal. Effects on nutrient cycling and habitat structuring of important species of ichthyofauna were also verified, which end up being affected by the acceleration of sedimentation and the natural avulsion process (associated with the diversion of the river flow from the Plateau to the Plain resulting in a new channel). Combined to factors such as heavy rains and intense deforestation by agriculture, the avulsion has a direct influence on the transitions between vegetation communities and on seasonal movements of animals between the plateau and the plain, in addition to the displacement of riverside communities that develop activities in the Pantanal.

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Research

Effect of adoption of electric vehicles on public health and air pollution in China: a modelling study

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Project

Sustainability and Affordable Housing: A Conceptual Study Towards Urban Housing Solutions in Toronto, Ontario, Canada

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Background: Housing is both a key social determinant of health and a human right. However, the construction sector contributes 40-50% of greenhouse gas emissions, generates 25% of waste, consumes 40% of natural materials and energy, and uses 15% of freshwater resources. In parallel, gentrification and urban sprawl have rendered many people unable to afford adequate housing. People in need of affordable housing are among those at highest risk of the adverse impacts of climate and environmental change (CEC). This study reviews current trends in thinking on the question of affordable housing and sustainability and provides case studies from the literature on how this has been achieved in various settings to offer a way forward for Toronto and other urban settings. Methods: To explore the conceptual underpinnings of sustainable and affordable housing in urban areas, we conducted a literature review and explored cases studies of sustainable and affordable housing in urban settings across Canada. Findings: We first provide an overview of why sustainability is an important consideration in affordable housing. We then expand upon our conceptual framing, which draws on a holistic approach defining sustainable housing as housing which meets the physical, economic, and social needs of the current residents while actively decolonizing and regenerating communities and without compromising the ability of future generations of residents to meet their own physical, economic, and social needs. We provide an overview of ecological building design and sustainable (and unsustainable) building materials. We then offer three Canadian case studies, Tiny Homes for Veterans Experiencing Homelessness in Calgary; Nuutsumuut Lelum, Nanaimo Aboriginal Centre Passive House; and UniverCity on Burnaby Mountain, British Columbia. Interpretation: In order to meet the dual objectives of equity and sustainability, affordable housing needs to be a core principle in sustainable development, and environmental sustainability must be a core element of affordable housing.

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Research

Rodent population assemblages and the potential for changing *Lassa mammarenavirus* emergence dynamics in Sierra Leone: A pilot study

David Simons, Kate Jones, Deborah Watson-Jones, Richard Kock

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Background: *Lassa mammarenavirus* is a zoonoses transmitted by the commensal rodent species, *Mastomys natalensis*. It is associated with seasonal outbreaks of human disease in several countries including Sierra Leone. This pilot study aimed to refine the protocol and data collection approaches for a subsequent longitudinal study which will explore the role of changing land use and the composition of rodent assemblages. The risk of *Lassa* fever emergence will be modelled from this data. **Methods:** Two villages were selected for inclusion based on; previous human *Lassa* fever cases, ease of access during the rainy season and variety of land use types identified through satellite imaging. Locations for trap grids were selected to provide coverage of varied rodent habitats (e.g. crop land, fallow land, disturbed forests). Rodent traps were set in a 7x7 trap grid at six locations near each village for up to four consecutive trap nights. Traps were geolocated and local habitat was recorded. Traps were primed each evening with locally sourced bait and checked the following morning for successful captures. Trapped rodents were euthanised and were identified to genus and where possible species using an identification key. **Findings:** In this pilot 1,846 trap-nights were completed, 39% in village one and 61% in village two. Sixty-five rodents were trapped with a trap success rate of 3.5%. Twenty-two rodents from four species were identified in the first village. No *M. natalensis* were identified. Forty-three rodents from 11 species were identified in the second village and three *M. natalensis* were identified. **Interpretation:** This pilot demonstrated feasibility of the study design and has guided modification of data collection tools. Data obtained from the pilot will guide sample size calculations to investigate the association of land use and rodent abundance.

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Research

Do we perceive changes in the health of the planet? A case study of the illegal and mechanized gold fever in the Chocó region of Colombia, an approach from the Socioecological Systems

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Population growth, consumerism, extractive activities, pollution, environmental refugees, socioenvironmental conflicts, poverty, and misery, evidence of the disconnection between society and nature. Consequently, mankind is now facing the rapid decline in the health of the ecosystems with potentially catastrophic consequences on the well-being and health of individuals. In this context it's believed that the impacts on the way of living of traditional communities are of particular interest, which raises the need for appropriate concepts and methods that help to identify and assess their capacity to deal with environmental and social conflicting situations. The present work reports the effects on the socioecological interactions in the ethnic-traditional communities of the Quito River derived from the impacts in the water environment caused by illegal and mechanized gold rush in the Chocó region of Colombia, which are partial outcomes of ongoing Doctoral research. The research's background was developed under the premise grounded on the theory of Socioecological Systems, and data gathered through bibliographic and documentary research, participant observation, focus groups, semi-structured interviews, and discourse analysis. It was found that the biophysical impacts caused by illegal gold mining have generated significant changes in essential ecosystem services linked to the water environment in detriment of food autonomy combined to the loss of cultivable areas and the restriction of fish consumption due to mercury contamination, longer and harder journeys to collect water for daily consumption thus exposing women and girls to rashes and vaginal infections; loss of traditional activities related to the river, as well as community spaces that allowed the generational transfer of knowledge. We emphasize that a transdisciplinary approach has allowed to capture the community's notion of environmental impacts in terms of the perceived changes in the availability and quality of ecosystem services which can support informed decisions aimed at the integral sustainability of the ecosystems.

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Research

Exploring the role of land-sharing on urban green and cardiovascular health

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Project**What does planetary health mean to health care practitioners?**

Anna-Liça Badaloo, Nathan Uchtmann, Leslie Solomonian

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Healthcare providers (HCP) have a reciprocal relationship with planetary health. Not only is planetary health a significant determinant of individual and population health, but HCPs have the potential to play a critical role in promoting and stewarding planetary health through their practices and recommendations. Clinicians for Planetary Health and Naturopathic Doctors for Environmental and Social Trust have recently been engaged in ongoing discussion about overlapping goals and shared vision for nurturing a global community of HCPs invested in planetary health. In order to understand what is needed to build this community, we have designed a survey based on the “Canmore Declaration of Principles for Planetary Health” and the “Declaration Calling for Clinicians of the World to Act on Planetary Health” to assess knowledge, attitudes and practices of a broad spectrum of HCPs with respect to planetary health. We intend to also identify the obstacles HCPs experience incorporating planetary health principles in clinical practice. This will not only elucidate the current state of affairs with HCPs and planetary health, the obstacles identified could lead to substantive further initiatives that could have a strong and tangible impact on planet-based patient care. In this poster and during the virtual session we will share our survey tool and seek semi-structured feedback from participating healthcare providers with the goal of improving its design and increasing the quality of the data collected.

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Project

The Environmental Physiotherapy Agenda 2023: A grassroots effort at introducing planetary health, environmental and sustainability perspectives into physiotherapy education around the world

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Background: From the Lancet Countdown on Health and Climate change, to the UN 2030 Agenda for Sustainable development and the IPBES Global Assessment for Biodiversity and Ecosystem Services, it has been recognized that transformative change and participation of all sectors of society is needed to meet the health and environmental challenges of our time. The EPTAgenda2023 is 1) a global call to action aiming at the integration of planetary health, environmental and sustainability perspectives into entry-level physiotherapy education programmes around the world, and 2) a collaborative project aimed at the development of an interactive open-access knowledge base for planetary health education. Methods: The EPTAgenda2023 is an ongoing participatory-action-research project. While recruitment still continues, the over 20 participating institutions that have already committed to the EPT Agenda 2023, as well as its 19 supporting organizations (incl. the Planetary Health Alliance) are already collaborating in a variety of ways to implement the integration of planetary health, environmental and sustainability perspectives into worldwide physiotherapy education. Findings: In this presentation, we will highlight the variety of content, methods, challenges and corresponding solutions to planetary health education that have already been identified by or implemented in participating institutions. These include, for example, teaching about climate migration and migrant health, new approaches to teaching anatomy and physiology, promoting active transport as a planetary health intervention and the challenges presented by the COVID-19 pandemic. Interpretation: As a global initiative, the EPT Agenda 2023 represents an unprecedented effort in pulling together the strength of the entire physiotherapy profession to contribute to planetary health and flourishing. As a grassroots effort that is already changing the face of physiotherapy education, its findings are relevant to other established health professions that are seeking to embed planetary health into their respective fields of science, practice and education.

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Research

The teacher's view on environmental issues and the development of educational actions in Conservation Units

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Educational activities in natural environments can raise awareness and modify people's behavior, becoming a powerful tool for mitigation and adaptation facing climate change and its impacts on human and planetary health. The Coastal Ecosystems Project approaches this crisis by building a collaborative network between universities, Conservation Units (CU), and public schools, associating research and educational actions in communities to global climate change (GCC) knowledge. Research projects aim to assess the knowledge and perception of different groups, including CU managers and technicians and school students and teachers on these subjects. To this end, questionnaires were applied to assess personal knowledge about GCC and the perception about the educational potential of pedagogical activities within CU. Results show a low teachers' knowledge about GCC, with an average score of 4.8 (on a 0 to 10 scale), with significant gaps related to mitigation actions, which could result in incomplete or inadequate teaching. Regarding the perceptions about the potential of environmental education actions in CUs, the partial results indicate important structural obstacles. The instruments developed for this research can be applied in other territories, facilitating continuous institutional evaluation of these groups. Thus, the need for continuous education for teachers is highlighted, which can be provided by universities, strengthening the interactions between these to pillars of the collaborative network. In addition, the articulation between CU and schools could be facilitated by territory-based governance engaged on the articulation of environmental public agents and politicians and the consolidation of attitudes and behaviors needed for emancipatory actions in defense of human and planetary health.

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Research

Tackling climate change's impacts on planetary health by using local collective action for food and infectious disease

Ilan Kelman, Luke Matthews, Aaron Clark-Ginsberg, Max Izenberg, Eija Meriläinen, Laura E.R. Peters, Unni Gopinathan, Sonja Lynn Myhre, Geordan Shannon, Michelle Scobie

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Background: To deal with climate change impacting planetary health--often responding to inadequate action by formal institutions such as businesses and governments--grassroots organisations are undertaking actions to conduct environmental and resource monitoring and to engage in local climate change-related initiatives. Being informal, non-profit, and with limited resources, these organisations face classic collective action problems of incentivising members to contribute outside of wider systems, such as governments and markets, while determining how to reward or punish actions. Methods: The research presented here examines how local, volunteer-based environmental groups in Sitka, Alaska and Toco, Trinidad respond to climate change and its planetary health impacts through local, collective action, focusing on food and infectious disease. The method was semi- structured interviews with local environmental groups in order to analyse and compare the lessons and stories regarding the groups' activities, needs for improvement, operations, and results. Findings and Interpretation Local interests and disinterests emerge regarding the planetary health aspects of local food and infectious disease as potential (and increasingly actual) health consequences of climate change. Lessons also result from the analysis for so-called “participatory” processes which, the interviews indicate, can sometimes perpetuate the inequities which they had been aiming to resolve, particularly where external researchers direct the work.

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Research

Health and environmental co-benefits of city urban form in Latin America: an ecological study

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Project

Advancing Community Waste Management Practices through Advocacy and Research at Ijora Fish Market, Lagos, Nigeria

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Abstract: Ijora Fish Market is a major port for the capture and trade of fish and aquatic food in Lagos, Nigeria. Waste management practices and environmental health is a key gap that needs to be addressed due to the market's proximity to the Atlantic Ocean, waste dumping into the ocean and the risk of transmission of food-borne diseases to humans and animals in the environment. The goal of the community-based project is to advance community waste management practices through sensitization, advocacy and research. The three focal points implemented to address this includes waste management and environmental health awareness using indigenous languages in Nigeria (with a focus on the holistic approaches to health such as One Health & Planetary Health), market clean-up exercise, and quantitative research to understand the perception of market residents on waste management practices. It is expected that the output from the research will improve understanding of environmental health and waste management practices, serve as a policy instrument in advising markets and other relevant stakeholders at the local government on the wayforward from wrong practices. The market traders and other residents of Ijora Fish Market were impacted by the awareness of environmental health and waste management practices by realizing the importance of preserving their environment for the benefits of their health. A behavioral change towards waste management was also observed after a brief follow-up to the project. Identifying that community sensitization on waste management is insufficient, we recommend that this kind of project continues in Nigeria and globally, most especially in the light of infectious disease outbreaks of zoonotic nature from wet markets. We also recommend strongly that the use of indigenous languages in Africa, most especially in rural and suburban communities is important to advance the concept of a healthy planet and healthy people amongst community residents.

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Research

Planetary Health from the Global South: Brazilian perspectives on Sustainable Diets and Meat Consumption

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Background: The Anthropocene calls for immediate action in the face of shared challenges in Planetary Health. However, the responsibility and vulnerability of this phenomenon are unequally distributed across countries, and the ways to address such needs must also be locally constructed. Considering that meat is a resource-intensive product, Brazil is one of the biggest global producers and exporters at the same time that it faces challenges of poverty and food insecurity in its access and consumption. **Methods:** The research is based on quantitative data from 2008 and 2017 National Dietary Surveys (POF) discussing meat consumption and its meanings in the Brazilian context, based on the Food Justice literature. **Findings:** Brazilians reduced meat intake by 7% from 2008 to 2017, especially among people with low income. However, the average meat intake among Brazilians is still higher than international recommendations to prevent diseases and protect the environment. Even though meat production and intake are associated with negative impacts on planetary health, in Brazil relevant factors for meat intake reduction may be inflation rates and rising prices. Drawing from the literature on food justice, we discuss if this change of consumption patterns is related to health and environmental consciousness or if it is due to a loss of access to consumption from vulnerable groups of society. **Interpretation:** Our research discusses food choices in sustainable diets considering Food Justice demands coming from local contexts in the Global South. EAT Lancet addresses important issues on Food Consumption and Environmental Impact, however, when discussing food consumption our findings show the relevance not only of local availability but also contextual socio-economic and cultural meanings. It points out that the debate on Sustainable Diets in each context is crucial in order to build a more inclusive and socially just understanding of Planetary Health.

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Research

Building Kincentric Awareness in Planetary Health Education: A Rapid Evidence Review

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Background: The current definition of planetary health has been criticized in recent literature for having a hierarchical anthropocentric focus that values the importance of human health outcomes over other beings in the biosphere. Scholars urge a shift in perspective to one that inspires exploration of the emotional and spiritual relationships between humans and other life. Kincentricity is a concept from Indigenous scholarship that supports an obligation to live in harmony with all kin. A paradigm shift from the anthropocentric to the kincentric would align with health professions such as nursing, which recognizes human beings' health as emergent from the environment and integral with one's spiritual nature. In 2020, the Planetary Health Alliance developed a draft Planetary Health Education Framework to guide education and practice. To help align the framework with Indigenous Knowledge Systems, a rapid evidence review on kincentric approaches to planetary health education was conducted. **Methods:** The search was conducted in September 2020 across multiple databases. 83 articles were screened in the full-text review. Exclusion criteria were: (1) Does not address the purpose of the review (i.e. studies must align with kincentric approaches in education); (2) Not a peer-reviewed publication. **Findings:** No education studies included approaches that were explicitly kincentric. Three articles were in the final sample and explored approaches that were implicitly aligned with kincentricity. Being open to traditional Indigenous perspectives allowed educators and students to gain understanding of their interconnection within nature. **Interpretation:** The paucity of evidence for effective kincentric approaches in education demonstrates how research has privileged the anthropocentric perspective. Utilizing these kincentric approaches will require planetary health educators and scholars to engage with communities from different paradigms. Further knowledge development of kincentric approaches in research and education is warranted and could lead to transformational practices that advance planetary health.

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Research

Racial inequities in self-rated health across Brazilian cities: does residential segregation play a role?

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Background: Studies investigating racial inequities in health in Brazil have been scarce, partially due to the myth of a “Brazilian racial democracy”, i.e. the creed of racial egalitarianism. Racial inequities in health may be partially explained by area-level factors shaped by structural racism such as residential segregation. Methods: In this cross-sectional study using a large multiracial, representative sample of Brazilian adults (N=37,009 individuals in the 27 state capitals) (National Health Survey –PNS 2013), we aimed to investigate (1) whether individual-level poor self-rated health (SRH) (Good or better vs Fair or Poor) varies by race (self-declared white, brown, black) and (2) whether city-level economic and/or racial residential segregation (using Dissimilarity Index in tertiles low, medium, high) interact with race, increasing racial inequities in SRH. Findings: Prevalence of Fair/Poor SRH was 31.5% (blacks: 36.4%, browns: 34.0%, whites: 27.3%). Multilevel logistic regression models with individuals nested within cities, adjusted for individual-level factors including education, showed that blacks and browns had, respectively, 30% and 20% higher odds of fair poor SRH than whites. Furthermore, residential segregation interacted with race in a dose-response pattern, such that the more segregated the cities, the greater the racial gap between blacks, browns and whites in Fair/Poor SRH. For income segregation, joint effects for blacks and browns (vs whites) were respectively, 1.48 and 1.25 (in high segregated cities), 1.27 and 1.24 (in medium segregated cities), and 1.16 and 1.09 (in low segregated cities). For race segregation, joint effects for blacks and browns (vs whites) were 1.48 and 1.34 (in high segregated cities), 1.28 and 1.20 (in medium segregated cities), and 1.19 and 1.11 (in low segregated cities). Interpretation: Residential segregation widened racial inequities in SRH, indicating that interventions focused on a more equitable distribution of resources within cities, targeting economically/racially segregated areas, could reduce racial health inequities.

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Project

“Food Choices for a Healthy Planet”, an online educational tool to support improved understanding of the complexity and impacts of food choices

Lana Vanderlee, Carla Martins, Becky Ramsing, Marie Persson, Maria Alvim, Mariana Madruga, Saskia de Pee, Christopher Gardiner, Martin W. Bloem, Douglas Gayeton, Zoe Craig, Pier Giorgio Provenzano, Amine Rehioui, Alina Miller

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There is mounting evidence that healthy, sustainable diets protect public health, the planet, and the climate. But how, exactly, can food choices impact people’s and planetary health? To help increase understanding and awareness of some common and perplexing issues on the relationship between diet, health and sustainability, a team of experts in nutrition, food systems and environmental health from across the globe developed “Food Choices for a Healthy Planet”, an interactive online game for all ages. The game features four unique countries/regions, each with a particular focus: Nordic Countries (sustainability), Brazil (local/whole foods rather than ultra-processed foods), Canada (plant-forward), and Indonesia (undernutrition, child-focus). Instead of a singular, prescriptive approach to global diets, the team developed a country-first perspective, recognizing that each country has distinct cultural, economic, historical, and agricultural capacities to feed itself. To begin, players choose a country and character for whom they make food choices over the course of one day. At the end of each day, players learn how each decision can impact their health, healthcare, climate, environment and food culture. Players are then guided to a website containing evidence-based advice from leading global experts in the areas of diet and planetary health on topics of importance and interest. Combining gamification with a strong backbone of evidence, the game allows players to experience and learn how food choices can be modified to achieve better outcomes. It demonstrates sustainable and healthy diets in different food-culture contexts, building on - and moving beyond - traditional ways of communicating dietary guidelines. Launched in 2020, this free, open-source game is publicly available for use, is embeddable on any website and can be expanded to feature additional countries and greater customization. Developed for use as a novel education tool, this game aims to engage policy makers, educators, and the general public.

<https://www.greenbrownblue.com/food-choices-for-a-healthy-planet>.

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Research

Amazon Biobank: sustainable development built upon rainforest's biodiversity

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Background: The preservation of the Amazon Rainforest has been a matter of discussion for decades, and its role in planetary health has been intensified in the last years. At the heart of the debate, there are two opposing views on how the region should be explored for economic purposes: on the one hand, there is a vision focused on keeping parts of the forest untouched, and profit solely from its indirect benefits (e.g., weather regulation and rain production); on the other hand, there are those who advocate resource-intensive activities in the region, like agriculture and mining. The goal of this research is to promote a third way to handle the issue: to turn the existing abundant biodiversity into a source of wealth, by leveraging the growing interest of the biotechnology industry and scientists in genomic data. **Methods:** To build a biobank with genetic information from the Amazon Rainforest and traditional knowledge from its local communities, we combine different collaborative technologies, in particular Blockchain for data tokenization and peer-to-peer solutions for data sharing/processing. Besides promoting the healthy exploration of the resources and biodiversity in the area, the system protects the intellectual property of participants via smart-contracts. **Findings:** In a preliminary study, a proof-of-concept architecture was built using Hyperledger Fabric for the underlying Blockchain, Express.js to write web applications and smart-contracts, Bittorrent for secure data sharing, and Basecalling for DNA processing. **Interpretation:** We were able to develop a robust infrastructure for collecting, storing, processing, and distributing DNA data, enabling the sustainable exploitation of biodiversity-rich regions like the Amazon Rainforest. The system is expected to stimulate the local economy via the tokenization of biodiversity-related information, while creating a rich data repository that is useful for both academic and commercial purposes. A pilot deployment is the next step of the study. **Keywords:** blockchain, sustainable development, biodiversity, peer-to-peer, DNA sequencing.

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Project**CHIP: Child Health Is Planetary Health***Nathan Uchtmann***How to cite:**

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Brief Project Description: Our CHIP (Child Health Is Planetary Health) Team coalesced around our shared visions about the vital importance of simultaneously considering and prioritizing healthy children and a healthy planet. Although our initial terminology focused on “Planetary Pediatrics”, following a series of conversations that gave serious attention to the diverse global audience that we aim to meaningfully engage, we eventually arrived at more general and inclusive terminology that explicitly links children and planet. **Goals:** Our Goals include raising awareness about intricate and bidirectional relationships whereby healthy children improve our planet’s health, and, likewise, a healthy Planet Earth is a necessary precondition for healthy children. We aim to normalize this dual consideration in influential realms including education, policy, research, and practice. We further aspire to heal broken relationships--both within communities and between people and nature--while effectively reuniting people with nature and ensuring that every child has equitable access to a stable climate, supportive families and communities, resilient and thriving social and ecological systems, and a maximally healthy planet. **Target Audience:** Our Target Audience includes community members, advocates, and professionals who are interested in both learning about and improving Child Health and Planetary Health. This expansive and synergistic frame enables us to strategically anticipate, accommodate, and incorporate the existing priorities of key stakeholders who are rigorously working to jointly advance environmental and health priorities. Given our practice of linking Child Health with Child Development and Child Rights, our target audience also includes teachers, parents, and children themselves. **Results:** Our Results include forming a complementary “Teachers For Planetary Health” network and an ongoing collaboration with Planetary Health Campus Ambassadors about an “ABC’s of Planetary Health” children’s book. We are also mobilizing an International Society of Social Pediatrics and Child Health Planetary Pediatrics Working Group and co-hosting a Community Call with Clinicians For Planetary Health on Child and Planetary Health.

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Project

An interdisciplinary study with eighth grade school children: Teaching nutrition for healthy eating

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The growing number of people with health problems associated with inadequate nutrition has been a cause for concern. For this reason, the United Nations General Assembly proclaimed, on April 1, 2016, the United Nations Decade of Action on Nutrition. In support of this critical decision, this project was carried out at the State School Dr. Álvaro Guião, São Carlos city, SP, Brazil with 100 eighth grade students of elementary school II and the participation of science, mathematics, and Portuguese language teachers. The objective of this research was to use and test several active methodologies to discuss healthier eating habits and eating disorders due to poor diet. The students were asked to bring labels of consumed food to assess its nutritional composition and research in the library and the computer room about vitamins and minerals contained in the foods they consume, highlighting the functions of these nutrients and prepare texts and a PowerPoint® presentation to socialize the research contents with colleagues. They had a class on the food pyramid and had their Body Mass Index (BMI) calculated. The students had a presentation about fruits and vegetables not commonly consumed and made music parodies to disseminate food and good eating habits. To encourage the study of the theme using other languages, the students made memory games and word searches, among others and worked with texts and materials to differentiate the concepts of “diet” and “light” foods. The data were analyzed quantitatively and qualitatively, and the results showed that after the intervention, changes were necessary for a healthy diet. The methodologies used favored learning, as well as working with the project, yielded quick feedback. Students realized that the contents are connected (interdisciplinary), with the same topic addressed by various disciplines. The final result generated a printed and digital newspaper posted on [www.usp.br/cienciaweb, category/mural-da-escola](http://www.usp.br/cienciaweb/category/mural-da-escola).

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Research

Developing a systems approach to identifying the challenges and trade-offs of introducing bio-based plastics in food packaging

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Background: As global plastic pollution gained increased attention, the use of bio-based plastics has grown in popularity. The possibility that this shift may create detrimental impacts is underexplored. The aim of our study was to identify the potential challenges and trade-offs associated with the introduction of bio-based plastics in the food packaging industry. **Methods:** Literature was reviewed to assess the comparative performance of bio-based plastics across the entire food packaging lifecycle and develop a sustainability decision matrix, which provides insights into the potential impacts of the introduction of larger amount of bio-based plastic food packaging. **Findings:** Considerable resources, land, water, fertilizers and pesticides, and energy are required for the cultivation and harvesting of agricultural crops used in the production of bio-based plastics. This can affect climate, contribute to biodiversity loss, and may cause soil erosion, eutrophication of ground and surface waters and carbon emissions. The biorefinery and polymerisation processes are also generally associated with high energy and produce a range of hazardous air pollutants. Furthermore, a wide range of chemical additives are used when resins are transformed to final products, some of which may migrate into food, or into the environment if composted. All of these environmental changes can impact human health (food security, non-communicable as well as infectious diseases). Our bioplastics sustainability matrix presents the challenges and trade-offs associated with the replacement of conventional (petrochemical-based) plastic with bio-based alternatives in the food packaging sector, and highlights important knowledge gaps. **Interpretation:** Our preliminary high-level assessment of the bio-based plastics production, use and waste management system clearly reveals a number of blind-spots. The sustainability of specific bio-based polymers requires thorough and further research to ensure that the substitution of petrochemical-based plastics with bio-based alternatives in food packaging sector will not lead to unintended consequences.

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Research

Evaluation of health impact of an intervention project on school meals in a semiarid area in Bahia, northeastern Brazil: Preliminary results

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Childhood obesity and associated comorbidities have grown more frequent since 1990, especially in low-income countries and represent a major risk factor for premature death. It should be addressed comprehensively with undernutrition and climate change and represents a paramount health challenge. Plant-based (PB) diets are sustainable and have been associated to obesity prevention. “Sustainable School Programme (SSP)” was devised in four towns in Bahia, evolving 32,000 students attending public schools where PB meals fulfilling dietary requirements were served twice a week. The aim of this study is to evaluate impact of these changes in school meals on students’ lipid levels. Intervention proposed by Public Ministry of Bahia began in school year of 2019 (March through November). 307 scholars aged 5-19 years were evaluated twice: first, in the beginning of the intervention (March), and then November. Parents or tutors agreed to students’ participation and protocol was approved by Ethics Board in Bahiana School of Medicine. At basal evaluation, prevalence of elevated triglyceridemia (TG) was 47,1% among participants aged 5-9 years (TG \geq 75 mg/dl) and 27,9% among those aged 10-19y (TG \geq 90mg/dl). Elevated total cholesterol (TC) was found in 67% of children aged 5-10y (TC $>$ 150 mg/dl) and in 31% of teenagers (TC $>$ 170 mg/dl). Prevalence of high LDL-C (\geq 100 mg/dl) was 29% in children 5-9y during first evaluation and 20% after intervention. Among teenagers, prevalence of high LDL-C (\geq 110mg/dl) decreased markedly (13 vs 1%). The studied population showed elevated frequency of dyslipidemias. Decreasing frequency of high LDL-C suggests potential reduction in cardiovascular risk. Considering these findings and environmental impact of PB diets, SSP seems to be a promising strategy to improve human and planetary health.

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Project

Brazilian Planetary Health Club launch: (bio)diversity and articulations

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Boosting the Planetary Health concept aims to enhance human health and wellbeing, synergistically with the health of natural environments, since they're both inseparable and codependent. At 2020 December 16th, the Clube Brasileiro de Saúde Planetária (CBSP, Brazilian Planetary Health Club) was launched, during the International Seminar "Planetary Health at Latin America: time to act!" — organized by the Advanced Studies Institute and the Planetary Health Study Group, based at the University of Sao Paulo (USP). The CBSP is composed by brazilian students, at undergraduate and graduate levels and early career researchers, from universities distributed in all of the brazilian regions. The CBSP brings as principles: planetaryhealth; diversity; transdisciplinarity and juvenile protagonism and It's structure is given by the documents Manifest and Statute. At the Seminar, the club performed several activities such as the Manifest launch; a panel of "Diversity and Planetary Health"; and the presentation of the videos made by CBSP and other young people from international groups also mobilized around Planetary Health. The panel "Diversity and Planetary Health" exposed the main focuses which will be tooled, since there are strong linkages among planetary health and: social inequities, gender equity, colonization processes (in terms of the exploitation of natural resources and the black people's bodies), structural racism and its impacts on mental and physical health on its targets. Therefore, this talk pursued to create space for the amplification of those stories as well as practices and theories about Global South, through the linkages between academic and traditional knowledge, in ways that the Planetary Health fortification should encompass the diversity of the people who live here. In 2021, the CBSP will engage in activities as: global articulations; citizen science; reading club; girls and women in planetary health; scientific communication and outreach; planetary health trail and protection areas and planetary health.

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Research

Eating Behaviors and Lifestyles with Impact on Perception of Body Image in university students

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Introduction: The entrance to the University, for most students, is a stage marked by strong changes in the student's life, the distance from the family, makes young adults have to be responsible for their own attitudes and behaviors. This study aims to assess the prevalence of eating behaviors and lifestyles in young university adults, with and without family support and its relationship with their anthropometric condition with an impact on the perception of body image in young adults. **Material and Methods:** This study was an observational, cross-sectional cohort of level III on knowledge. 155 young university adults belonging to Coimbra Health School participated in the study. A questionnaire was conducted to assess the scale of Neophobia, Body Shape and Food Frequency. The results were evaluated in the IBM SPSS Statistics program using descriptive tests and inference tests, anthropometric evaluations were also carried out. **Results:** Of the 155 respondents, students at the Coimbra Health School, it was found that the majority was in the 2nd year of enrollment (35.5%), and the majority were living alone or in the company of other students, without the influence of parents and / or siblings and / or other family members (74.2%). The vast majority (70.7%) have a normal body mass index., 6.5% (n = 8) are underweight, 21.1% (n = 26) are overweight weight and that 1.6%; (n = 2) are classified as obese. With regard to physical activity, 31.0% (n = 48) practice, while 69.0% (n = 107) of young adults do not practice. The difference is thus notorious since the majority are in this condition. Of those who practice physical activity, 25.2% (n = 29) are living with students or alone (without family support), while 47.5% (n = 19) of those who practice live with family support. With regard to young people who do not practice physical activity, 74.8% (n = 86) live with students or alone, while 52.5% (n = 31) of young people who do not practice physical exercise live with family support. When comparing the groups of young adults with and without family support, it was found a higher prevalence of participants who were not in the habit of skipping meals and with family support (72.5%) compared to young people without support and who were also not in the habit skipping meals (62.3%). Regarding alcoholic habits, 74.2% (n = 115) are alcohol consumers, 1.9% (n = 3) stopped consuming alcohol and 23.9% (n = 37) did not consume alcoholic beverages. Regarding smoking habits, 18.1% (n = 28) are smokers, 5.8% (n = 9) are ex-smokers and the vast majority of young adults 76.1% (n =118) do not smoke both female and male groups are concerned with body image and that there is indeed a correlation. This evidence is much more real in general, in the female group than in the male group, that is to say, which confirms that the higher the BMI, the greater concern with body image is not as evident in the male group as it is in the female group. young adults with higher body mass index values showed higher values of body image distortion ($r = 0.542$). This effective pattern was observed in 29.4% of young people in study ($r^2 = 0.294$). **Conclusion:** The data obtained allowed us to conclude that family support did not have a statistically significant impact on risk behaviors related to tobacco and alcohol, although the majority of young people who claimed to smoke or consume alcoholic beverages were sharing residence with

other students. On the other hand, regarding the influence of family support on regular physical exercise, the results obtained were statistically significant, revealing that more than 2/3 of young people without support did not practice physical activity. With regard to body image, the data give us evidence that both genders are concerned with body image and that there is indeed a correlation. This evidence is much more real in general, in the group female than male. It should be noted that studies like this are necessary for health promotion and disease prevention or control. It is also suggested that courses in the health area promote awareness actions on this theme, in order to promote a healthy environment, which provides the training of students aware of the importance of adopting healthy lifestyles, behaviors and eating habits.

1. Bras J. Insatisfação Corporal em universitários de diferentes áreas de conhecimento. *psiquiatr.* 2012;61(1):25-3.
2. Costa T. Percepção da Imagem Corporal, Composição Corporal e Atividade Física em Jovens Adultos. Vila Real: Universidade Trás-os-Montes e Alto Douro; 2012.
3. Mendes N. Satisfação com a Imagem Corporal em Adolescentes do Ensino Secundário: relação com a prática de atividade física. Leiria: Escola Superior de Educação e Ciências Sociais; 2016.
4. Assis C, Borine B, Lacerda S, Costa A. Autoavaliação de peso corporal e classificação do índice de massa corporal de estudantes do ensino superior de Cacoal. 2013;21(2):30-9.
5. Damasceno VO, Vianna VRA, Vianna JM, Lacio M, Lima JRP, Novaes JS. Imagem Corporal e Corpo Ideal. *R bras Ci e Mov.* 2006;14(1):pp. 87-96.
6. Martins C, Gordia A, Silva D, Quadros T, Ferrari E, Teixeira D, et al. Insatisfação com a imagem corporal e fatores associados em universitários. *Estudos de Psicologia.* 2012;17(2):6.
7. Pereira D, Soares P. Percepção da imagem corporal em um grupo de estudantes de Educação Física. *EFDeportes.com, Revista Digital.* 2015 marzo de 2015.
8. Russo R. Imagem corporal: construção através da cultura do belo. *Movimento & Percepção, Espírito Santo de Pinhal, SP.* 2005;5(6):11.
9. Taryn A, Myers DRR, Janis H, Crowther, Jeffery A, Ciesla. The impact of appearance-focused social comparisons on body image disturbance in the naturalistic environment: The roles of thin-ideal internalization and feminist beliefs. 2012.
10. Lucas J. Hábitos Alimentares dos Estudantes do Ensino Superior. Guarda: Escola Superior de Saúde do Instituto Politécnico da Guarda 2014.
11. Manuel L. Perturbações Alimentares, a ansiedade e a percepção da imagem corporal, em contexto académico. Lisboa: Universidade Lusófona de Humanidades e Tecnologias; 2016.
12. Cid M, Matsukura T. Problemas de saúde mental em escolares e seus responsáveis: um estudo de prevalência. *Rev Ter Ocup Uni São Paulo.* 2014;25(1):10.
13. Lazarus R, Folkman S. *Stress, appraisal and coping.* New York: Springer; 1984.
14. Contente P. Bem-estar, qualidade de vida e saúde mental: estudo descritivo na cidade da Horta. Lisboa: Universidade Lusófona de Humanidades e Tecnologias; 2012.
15. GW; G, SM; S, White AA, Hoerr SL, Lohse B, Shoff S, et al. Identifying clusters of college students at elevated health risk based on eating and exercise behaviors and psychosocial determinants of body weight. *J Am Diet Assoc.* 2011;111(3):7.
16. D H, T T, J B, TV C. Multiple health behaviors: patterns and correlates of diet and exercise in a Hispanic college sample. *Eat Behav.* 2011;12:6.
17. Santos A, Reis C, Chaud D, Morimoto J. Qualidade de vida e alimentação de estudantes universitários que moram na região central de São Paulo sem a presença dos pais ou responsáveis. *Simbio-Logias.* 2014 10, Dez/2014.
18. Santos J. Estilos de vida relacionados à saúde de estudantes universitários: comparação entre ingressantes e concluintes: Universidade Fernando Pessoa; 2012.
19. Martins A, Pavheco A, Jesus S. Estilos de vida de estudantes do ensino superior. *Advances in Health Psychology.* 008;16(2):6.
20. Matos A, Sousa-Albuquerque C. Estilo de vida, percepção de saúde e estado de saúde em estudantes universitários portugueses: influência da área de formação. *International Journal of Clinical and Health Psychology.* 2006;6(3).
21. Loureiro E. *Estuda da relação entre o stress e os estilos de vida nos estudantes: Universidade do Minho;* 2006

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Research

Climate change issues in Berlin's local plans: The contextual factors that lead to knowledge mediation

Tiago Rodrigues, Marcelo Montaña

How to cite:

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Cities are places where climate change (CC) effects are most significant to human health and also the ones that mostly contribute to the intensification of these effects. The integration of climate issues in urban planning can provide outcomes that transform the urban landscape and positively impact on human health. By its turn, urban planning processes usually mobilize diverse groups of interests and needs to deal in a balanced way with different and sometimes divergent objectives without prejudicing the path to a sustainable city. The city of Berlin, Germany, exemplifies the articulation of its CC adaptation goals through Strategic Environmental Assessment (SEA) applied to Local Plans. These plans play an essential role in spatial planning and the implementation of the climate agenda. In this context, the present work is focused on the identification of contextual factors that contributes to the promotion of CC related issues into local plans. Supported by the narrative a descriptive storyline was built detailing how and when the arenas for knowledge mediation were established and the extent to which CC adaptation measures were addressed. The findings point out the role of climate planning guidelines which, although mandatory, have showed little influence on local plans once their orientations were considered imprecise in relation to actual planning demands. Besides, through public participation, a complex network of actors and knowledge mediation strategies that aim to put the scientific evidence in discussion is triggered, which may contribute to level the public's capacity to influence on final decisions when compared to planners and planning authorities, which are the traditional owners of knowledge and usually establish the rules to weighing interests in the decision. It is concluded that knowledge mediation is key to promote an integrative knowledge flow and therefore help to find more balanced solutions in the planning arena.

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Research

A three-dimensional dietary index (nutritional quality, environment, and price) and reduced mortality: a prospective study in the Seguimiento Universidad de Navarra cohort

Ujué Fresán, Miguel A Martínez-González, Gina Segovia-Siapco, Joan Sabaté, Maira Bes-Rastrollo

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Planetary Health

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Research

Disentangling associations between vegetation greenness and dengue in a Latin American city: findings and challenges

Maria da Consolação Magalhães Cunha, Yang Ju, Maria Helena Franco de Moraes, Iryna Dronova, Sérgio Pontes Ribeiro, Fábio Raphael Pascoti Bruhn, Larissa Lopes Lima, Denise Marques Sales, Olivia Lang Schultes, Daniel A. Rodriguez, Waleska Teixeira Caiaffa

How to cite:

Cunha, M. C. M., Ju, Y., Moraes, M. H. F., Dronova, I., Ribeiro, S. P., Bruhn, F. R. P., Lima, L. L., Sales, D. M., Schultes, O. L., Rodriguez, D. A., & Caiaffa, W. T. (2022). Disentangling associations between vegetation greenness and dengue in a Latin American city: findings and challenges. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (p. 154). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance.
<https://doi.org/10.5281/zenodo.6373367>

Abstract: 390 million dengue cases occur globally every year, with cases prevalent in many urban areas in South America. Modifying the urban environment is a potential strategy to reduce the risk of vector-borne diseases, including dengue. Understanding the fine-scale relationships between dengue incidence and environmental and socioeconomic factors can guide improved disease prevention strategies by local decision-makers. This ecological study examines the association between dengue incidence and satellite-based vegetation greenness in 3,828 census tracts nested in 474 neighborhoods in Belo Horizonte, Brazil, during the 2010 dengue epidemic. To reduce potential bias in the estimated dengue-greenness association, we adjusted for socioeconomic vulnerability, population density, building height, the percentage of census tract area covered by building footprints, land cover composition, elevation, weather patterns, and neighborhood fixed effects. We found that vegetation greenness was negatively associated with dengue incidence in a univariate model, and this association attenuated after controlling for additional covariates. The association between greenness and dengue incidence was modified by socioeconomic vulnerability: while a positive association was observed in the least vulnerable census tracts, the association was negative in the most vulnerable areas. Using greenness as a proxy for vegetation quality, our results show the potential of vegetation management in reducing dengue transmission, particularly in socioeconomically vulnerable areas.

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Research

Analysing climate change and population health in Chile: Policy recommendations from interdisciplinary discussions

Palmeiro-Silva Y, Cifuentes L, Cortés S, Olivares M, Silva I.

How to cite:

Palmeiro-Silva, Y., Cifuentes, L., Cortés, S., Olivares, M., & Silva, I. (2022). Analysing climate change and population health in Chile: Policy recommendations from interdisciplinary discussions. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (p. 155). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance. <https://doi.org/10.5281/zenodo.6373367>

Background: Climate change affects human health through different pathways, by directly increasing the risk of negative health outcomes but also changing the environment where people live; therefore, an interdisciplinary approach is key when formulating mitigation and adaptation policies. This study analyses the relationship between climate change and population health in Chile from an interdisciplinary perspective. Methods: Narrative review of climate change health effects in Chile complemented with the Lancet Countdown Policy brief for Chile 2019 and experts' opinions from nurses, physicians, psychologists, engineers, public health experts, and decision makers. Findings: Little evidence exists on climate change health effects in Chile. Two national sources proposed that climate change could increase the risk of heat-stress morbidity and mortality, and change the geographical extension of some vector-borne vectors/pathogens. The Lancet Countdown Policy brief for Chile 2019 proposed that heat vulnerability, heatwave exposures, and wildfire exposures have increased significantly. Interpretations: The COVID-19 pandemic has shown us that a "health" problem should be interdisciplinary approached. The same happens with climate and global environmental change. Interdisciplinary and intersectoral mitigation and adaptation policies are needed to foster achievement and better public health policies. These should consider prevention of potential negative health outcomes and promotion of health and wellbeing, including mental health and resilience programmes; general education on these topics to the population; greater engagement of academia and scientists in policy-making process and more production of evidence that informs decision-making processes; better articulation between national and local governments policies; promotion of "health in all policies" in order to tackle inequalities and promote healthy populations, which brings economic and social co-benefits. Finally, the planetary health frame facilitates the inclusion of a broader perspective on the relationship between human health and the natural systems, including interdisciplinary and intersectoral perspectives.

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Project

ABCs of Planetary Health: A children's book initiative

Melody Wu, Stefanie Josefine Karle-Bhat, Viveka Guzman, Katharina Wabnitz, Eliana DaCunha, Pearl Anne Ante-Testard, Rosa von Borries, Oisín Brady Bates, Lauren Ramdin, Rewena Mahesh, Tassia Kate Oswald, Aminat Olaitan Adebayo, Iris Martine Blom, Ipek Erdöl, Anastasia Zagorni, Ogar Michael Oshen, Victoria Haldane, Melvine Anyango Otieno, Yina Shan

How to cite:

Wu, M., Karle-Bhat, S. J., Guzman, V., Wabnitz, K., DaCunha, E., Ante-Testard, P. A., Borries, R., Bates, O. B., Ramdin, L., Mahesh, R., Oswald, T. K., Adebayo, A. O., Blom, I. M., Erdöl, I., Zagorni, A., Oshen, O. M., Haldane, V., Otieno, M. A., & Shan, Y. (2022). ABCs of Planetary Health: A children's book initiative. In S. Koffler, A. L. Acosta, F. M. Soares & A. M. Saraiva (Eds.), *2021 Planetary Health Annual Meeting and Festival Book of Abstracts: Planetary Health for All: Bridging Communities to Achieve the Great Transition* (p. 156). Institute of Advanced Studies of the University of São Paulo; Planetary Health Alliance. <https://doi.org/10.5281/zenodo.6373367>

Concept: Planetary health re-envision possibilities to collectively and synergistically protect the environment and human health at the local and global levels, now and in the future. Current challenges, including the COVID-19 pandemic and climate change, can contribute to feelings of anxiety and uncertainty among children. A children's book on planetary health can serve as a tool to inspire hope, courage, and actions to protect natural environments, care for one another, and promote mental and physical health. Aim and target audience: Through 26 pairs of words and illustrations, the ABCs of Planetary Health provides a starting point for primary school children aged 8-10 years to understand key concepts and principles pertinent to planetary health. We hope to convey the interconnections between human health and the state of Earth's natural systems in a reliable, relatable, and compelling manner. Details: The book was created by a working group of the 2020 cohort of Planetary Health Alliance Campus Ambassadors (PHCAs). Miro, Google documents, and digital art software were used to develop ideas to convey selected principles through text and illustrations. Initial ideas were refined through workshops with a children's book author. Advisors with expertise in planetary health topics and child development, as well as primary school children and teachers, are being consulted to ensure the book conveys key concepts in a manner suitable for the target audience. The electronic book will be disseminated through the Planetary Health Alliance website, primary school contacts, and social media channels. Printed copies will be made available for technologically underserved areas. Next steps include content translation into multiple languages. Results: We have completed a draft of words and illustrations, which have been reviewed by a group of over 20 PHCAs, advisors, teachers, and children as of early January. We are modifying descriptions and illustrations to incorporate ongoing feedback. Email to get in touch or be notified of the book's release: planetaryhealthbook@gmail.com.

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PART IX: Side Events & Festivals



Uniting African and Planetary Communities for a Healthy and Sustainable Earth: a Participatory Dialogue to Promote Diverse Partnerships

Side Event

Worldwide, the concern on the impacts of the growing global human population on a non-expanding Planet Earth are widely shared and reflected in developmental priorities. Over the years many institutions/networks vocal about how anthropogenic activities are major drivers towards unsustainability of Planet Earth have emerged. Notable are Ecohealth International (formerly International Association for Ecology and Health), One Health and Planetary Health. Such initiatives all share a common goal of ensuring a sustainable Planet Earth to benefit future generations of plants, animals and humans - underpinned by principles of justice, equity, peace and inclusivity. However, their approaches are different, depending on their funders and general membership. Some place human health in the centre, while others give the environment centre stage. While Africa experiences negative environmental impacts often triggered by activities in developed countries, its voices and desired actions on how the future should look are faint and often not carefully listened to. The International Giant initiatives/organizations/networks generally impose internationally developed packages for adoption in Africa. Hence, all major initiatives concerned with the Earth's sustainability have some form of representation in Africa. Africa Planetary Health Working Group (APHWG), inspired by Planetary Health principles, is organically developing from within Africa; it currently has no direct institutional link with any prominent initiatives advocating for health or sustainable development. APHWG membership is predominantly constituted of young people with diverse backgrounds. Because it explicitly intends to avoid duplication, APHWG proposes to have a platform at the Planetary Health Annual Meeting to bring representatives from key holistic health stakeholders to present their approaches and activities with the goal of fostering collaborations and partnerships. Intentionally including advocates for Ecohealth, One Health and Planetary Health will facilitate the identification of synergies, overlaps, and opportunities to effectively holistically address global environmental health issues through meaningful engagement and involvement of communities.

Date & Time: Sunday, April 25, 2021, 8:45 AM - 10:45 AM

Panelists: Iyiola Oladunjoye, Environquest Nigeria; Mona El-Sherbini, Kasr Al-Ainy Medical School; Protus Musotsi, University of Nottingham; Raphael Kimosop, Baringo County Catchment and Wetlands Protection Officer; Grace Namunyak, Founder of Enamunyak; Chanelle Mulopo, University of KwaZulu-Natal; Crispen Phiri, Chinhoyi University of Technology.

Co-facilitators: Melvine Otieno, University of Eldoret; Samuel Abimbola, University of Cyprus; Nightingale Wakigera, University of Glasgow.

PHA Regional Hubs 2.0 Introduction & Launch

Side Event

This side event serves as the launch of the Planetary Health Alliance (PHA) Regional Hubs 2.0 program. For almost two years, planetary health regional hubs have emerged organically to act as a bridge to connect regional activities to the global planetary health community. The PHA, in

partnership with these grassroots hubs and Alliance members, has worked on developing an updated PHA Regional Hub program to increase capacity for intra and inter-regional collaboration among the planetary health community. During this session participants will learn about the process of developing this regional hub program, receive an overview of the hub structure, and hear from regional hub leaders. Participants will then have the opportunity for an informal meet and greet session within their respective hubs, and wrap up the event with inter-hub networking breakout rooms. This will be the first step in an ongoing effort to grow the PHA Regional Hub program worldwide.

Date & Time: Sunday, April 25, 2021, 1:30 PM - 3:00 PM

Sandeep Maharaj (PHA Global Outreach Fellow); Caribbean Regional Hub; Sub-Saharan Africa Regional Hub; Europe Regional Hub.

Clinicians for Planetary Health (C4PH)- Trusted Voices, Trusted Message

Side Event

The rapid disruption of Earth's natural systems is threatening the health of humans today. The COVID-19 pandemic is an obvious example of the global health impact when we ignore the damage to the planet's life support systems caused by humans. A sustainable and survivable future will require a Great Transition in both individual and communal human behaviors. As the most trusted professions, health care professionals must lead this transition, beginning with the health care system itself.

Clinicians for Planetary Health (C4PH) is an emerging global network of health care and wellness professionals. The goal for this satellite session is to attract new members and foster current relationships to lay the groundwork for global collaboration for planetary health. Ultimately, we want to activate members to begin to transform their own health care and wellness professions based on planetary health science and best practices.

In this workshop attendees will explore the role of trusted thought leadership and how the public's trust can be leveraged to promote transformation of human behaviors to improve not only human health but the health of the planet.

The workshop will include:

- The evidence behind health care providers as a trusted source
- Drawdown and emphasis on scaling solutions through trusted sources
- The Great Transition and an opportunity to transform health care
- Introduction of patient facing materials in the Planetary Health "seed box"
- Tailoring conversations and materials for different ages, education, languages, geographies
- Regional Hub involvement in patient education
- Audience participation (Breakout rooms)
- Next steps for C4PH

Date & Time: Sunday, April 25, 2021, 3:30 PM - 5:00 PM

Panelists: Teddie Potter; Nathan Uchtmann; Hannah Nash; Michael Xie; Max Zimberg; Sandeep Mahara; Joanna Wagner; Kristen Patterson

Hylo Side Session

Side Event

Terran Collective will share more about their community of care and practice building systems and tools for a regenerative future. They are also stewards of Hylo, the coordination platform for a thriving planet, which PHA is using to bridge the diverse communities and spark sustainable collaboration in the transdisciplinary field of planetary health. We'll give a tour of Hylo and highlight ways to stay engaged with PHA during and after PHAM. There will be time for interactive discussion and Q&A.

Date & Time: Sunday, April 25, 2021, 5:30 PM - 7:00 PM

Neha Sharma; Clare Politano; Tibet Sprague; Aaron Brodeur; Kelly Erhart.

A Symposium on the Therapeutic Use of Poetry and Music in Climate Change and Health Education in Nigeria

Side Event

A symposium to commemorate the planetary health week tagged “Our Youths, Our Climate and Our Mental Health” targeted towards the youths in Nigeria. This epoch-making event shall feature “Climate Change and Mental Health” talk, poetry recitations, music, networking opportunities and lots of fun to relieve the youths of their mental stress. Mental stress which has adverse effects on the city and community will be addressed squarely in that event. For more details, visit our educational blog: www.projectgreeninitiative.wordpress.com

Date & Time: Monday, April 26, 2021, 8:00 AM - 9:30 AM

Dr. Chioma Ajator, Department of Community Medicine, Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria; Barr. Emone Emmanuel (Emone Emmanuel International Hub); Amb. Benjamin Anabaraonye (Benjy Poetry And Music Global Concepts); Dr. Chris Ilozue (Chukwuemeka Odumegwu Ojukwu Teaching Hospital, Nigeria).

A Mensagem do Xamã com Davi Kopenawa (The Shaman's Message with Davi Kopenawa)

Festival

As palavras e os ensinamentos do xamã Davi Kopenawa (Roraima) revelados no livro ‘A Queda do Céu’, escrito em parceria com o antropólogo Bruce Albert, inspiraram o Fórum de Lideranças Yanomami e Ye'kuana a produzir o filme ‘A Mensagem do Xamã’. Narrado na língua Yanomami por Dario Kopenawa, filho de Davi, o filme condensa seu pensamento e suas reflexões e integra a campanha #ForaGarimpoForaCovid, lançada em junho de 2020. Davi Kopenawa Yanomami é

presidente da Hutukara Associação Yanomami, entidade indígena de ajuda mútua e etnodesenvolvimento.

Date & Time: Monday, April 26, 2021, 3:00 PM - 3:05 PM

Organizer: FAPIB-SE.

Marivelton Baré e Orquestra Multiétnica (Marivelton Baré and Multi-Ethnic Orchestra)

Festival

In Portuguese with artistic performance at the end Marivelton Baré (Amazonas): Marivelton Barroso, do povo Baré, do Alto Rio Negro (Amazonas), é presidente da Federação das Organizações Indígenas do Rio Negro (FOIRN). Representando 750 comunidades indígenas e 23 etnias, Marivelton está integrando o Comitê de Prevenção e Enfrentamento ao novo Coronavírus (Covid-19), criado pela prefeitura de São Gabriel da Cachoeira, o município mais indígena do Brasil; Orquestra Multiétnica (Encontro de Culturas Tradicionais) Grupo formado por diversos músicos indígenas participantes do IX Encontro de Culturas Tradicionais da Chapada dos Veadeiros. Sob a direção da musicista Renata Amaral, foram reunidos músicos de diversos povos que participaram ativamente com seus cantos e instrumentos, nesse evento realizado em 2019.

Date & Time: Monday, April 26, 2021, 3:00 PM - 3:10 PM

Organizer: FAPIB-SE.

A(terror): the urgency of expressing a world that is quick changing

Festival

In this audiovisual experience we propose a navigation of the street images made by Digo Cardoso, a graffiti artist in the Brazilian South, with a poetry made by Mayara Floss, a family doctor and writer. The a(terror) art plays with the word aterror (go down) and Terra (Earth). The artists are playing with the words to discuss provoke the audience to reflect about ground in the Earth with art.

Poesia, voz e edição: Mayara Floss

Graffiti: Digo Cardoso

Organizers: Digo Cardoso (Artist); Mayara Floss (WONCA).

The Lancet Countdown on health and climate change: regional responses

Side Event

The Lancet Countdown on Health and Climate Change, in collaboration with its Lancet Countdown South America Regional Centre, based out of Universidad Peruana Cayetano Heredia, Peru, would like to deliver an interactive three-part event to inspire, inform and engage with the planetary health community across the globe, with a specific focus on building closer collaborations within and between the academic and clinical planetary health community in South America. The first part of this event (inspire) will be focused on sharing best practice research activity across the global Lancet Countdown network, with a keynote address from Professor Anthony Costello, of the Institute of Global Health, UCL, supported by further short TED-style talks from regional Lancet Countdown centres, including South America and Asia, as well as representation from Small Island Developing States. The second part (inform) will move into a spotlight panel discussion on the opportunities for greater research, communications and policy engagement activity across South America, bringing together academic, clinical, political, indigenous, and NGO voices from Peru, Costa Rica, Ecuador and beyond to discuss the issues and data most relevant to the region, and the challenges/opportunities for further research, communications and policy engagement activity. The third part of the session (engage) will move into facilitated break-out groups focused on cross-pollination of communities, research themes, and ideas across: 1) COVID-19 and infectious diseases 2) Inequalities and climate change and 3) communications and policy engagement in the year of Pandemic Recovery and COP26. Each group will be facilitated by a lead from the Lancet Countdown in that area of expertise. The focus will be on striking up connections between audience members, identifying opportunities for future collaboration, and idea exchanges.

Agenda

Part 1 Introduction to the Lancet Countdown and its regional work.

Prof Anthony Costello – moderator and introduction – history of Lancet Countdown regional centres, why they exist and what they want to achieve.

Maria Nilsson: To talk about the European work and recent launch of the observatory and the publication of the joint paper with EEA.

Dr Wenjia Cai: To talk about the findings of the 2020 China report of the Lancet Countdown on health and climate change and plans for 2021.

Dr Georgiana Gordon-Strachan: To talk about the new SIDS work being planned.

Prof Stella Hartinger: To talk about the research in Peru and plans for 2021, who will then introduce...

Part 2: Spotlight on South America – academic, clinical, political, indigenous and NGO voices

Panelists

David Rojas (España): Epidemiologist. Field: Sustainable cities

Armando Valdés-Velasquez (Peru) Biologist. Field: Climate Change and Ecosystem Health

Grettel Navas (Costa Rica): Political Scientist. Field: Environmental Justice

Juan Carlos Arteaga (Colombia): Psychologist. Field: Migrations, climate change and mental health

Laura Gallardo (Chile) Chemical meteorologist. Field: Air pollution

Marina Romanello (Argentina): Moderator

Agenda

Moderator and introduction to the panelists.

Discussion with all panelists.

Q & A from the audience.

Part 1 Introduction to the Lancet Countdown and its regional work.

Moderator: Prof Anthony Costello - moderator and introduction - history of Lancet Countdown regional centres, why they exist and what they want to achieve.

- TBC

Panelists

To talk about the European work and recent launch of the observatory and the publication of the joint paper with EEA.

- Dr Wenjia Cai

To talk about the findings of the 2020 China report of the Lancet Countdown on health and climate change and plans for 2021.

- Dr Georgiana Gordon-Strachan

To talk about the new SIDS work being planned.

- Prof Stella Hartinger

To talk about the research in Peru and plans for 2021, who will then introduce...

Part 2: Spotlight on South America - academic, clinical, political, indigenous and NGO voices

Moderator

- Marina Romanello (Argentina)

Panelists

- Ana Rosa Moreno (Mexico): Biologist. Field: environmental determinants of epidemics
- Valerie Paz Soldón (Peru): Social scientist. Field: One Health
- David Rojas (España): Epidemiologist. Field: Sustainable cities
- Grettel Navas (Costa Rica): Political Scientist. Field: Environmental Justice
- Juan Carlos Arteaga (Colombia): Psychologist. Field: Migrations, climate change and mental health

Date & Time: Monday, April 26, 2021, 4:00 PM - 5:30 PM

Small but Resilient: The Caribbean Response to Planetary Health Problems

Side Event

"The Planetary Health Alliance Caribbean Hub comprises - The University of the West Indies, The University of Guyana, The University of Belize, Anton De Kom University of Suriname, The Caribbean College of Family Physicians and the Pan American Health Organization Trinidad and Tobago Office.

This hub has identified the following goals to be achieved to have better outcomes:

- 1) Build a diverse and collaborative planetary health research community and agenda that includes development of innovative solutions that informs policy.
- 2) Define and build region-wide planetary health education and training programs.
- 3) Develop systems, processes and resources to support collaborative research, education and communication efforts.
- 4) Generate awareness and demand for planetary health resources for the general public and policymakers.
- 5) Develop a long-term model of operation and funding for the Caribbean Regional Hub.

The presentation seeks to highlight the activities of some of our members. Professor Donald Simeon will present on the aims, objectives and future of the Caribbean Hub. Professor Christopher Oura will describe the success and challenge of the One Health initiative across the Caribbean. The Pan America Health Organization Trinidad and Tobago shall present current climate change initiatives embarked upon by their organization, The Sir George Alleyne Chronic Disease Research Centre will discuss the co-creation, design, and implementation of a sustainable ecological community food production intervention (backyard gardening), as part of the ICoFaN project. The University of Guyana would finally explain the initiative their country has taken to preserve its rich flora and fauna and show the ethnomedical uses and pharmacological benefits of most prevalent species."

Date & Time: Monday, April 26, 2021, 5:00 PM - 5:50 PM

Professor Donald Simeon - CPHRH; Professor Christopher Oura - Professor Veterinary Virology UWI St. Augustine; Representative of the Pan American Health Organization; Representative of the The George Alleyne Chronic Disease Research Centre; Representative of the University of Guyana.

The Great Transition Within

Festival

The Great Transition is happening right now. It is happening inside you and me. It is happening through us, on this planet, our home Earth. The Great Transition Within is an invitation to experience the Great Transition beyond the gardens of reason, through music, with CANAVIERA. Altogether, let us contemplate the music of the Great Transition.

Date & Time: Monday, April 26, 2021, 5:50 PM - 6:10 PM

Artists: Daniel Boldrin; Lucas Silva; Guilherme Sircili; Charles San Martin; Tuco Fonseca.

Video recording: Jhonnie F.

Video editing: Guilherme Sircili

Audio recording: José Rubens Salles Junior

Audio editing, mix & master producer: Guilherme Sircili

Executive producer: Saulo Barboza

Artistic producer: FTV Mídia

Songs: O Cio da Terra: Milton Nascimento/Chico Buarque; Canto da Boa Intenção: Canaviera; Humano e o Mato: Canaviera; Redemption Song: Bob Marley; Emanâê: Canaviera; Soundtracks available on: Spotify & Youtube (@canaviera).

Nurses are Here! A Global Planetary Movement

Side Event

Few health professions have been impacted by the COVID-19 global pandemic and disasters related to climate change more than nurses. Nurses have worked tirelessly on the frontlines of health crises caused by human disruptions of Earth's natural systems. Perhaps that is why nurses are some of the strongest leaders of planetary health solutions. Nursing has long been on the leading edge of adopting planetary health as a guiding framework for research, education, advocacy, and practice (REAP). A panel of nursing leaders will describe global, nurse-led planetary health solutions. There will also be time for professional networking to build opportunities for collaboration. The workshop will include panel presentations that highlight nurse-led planetary health solutions. The presenters are all national and global leaders of

planetary health initiatives. • Research: Beth Schenck (Sustainability initiatives in health care) • Education: Shanda Demorest (Nurses Climate Challenge) and Jessica LeClair (Planetary health curriculum in nursing) • Advocacy: Katie Huffling (Alliance of Nurses for Healthy Environments) and Oriana Beaudet (American Nurses Association- Innovation for Planetary Health) • Practice: Teddie Potter (Nurses Drawdown) • Audience participation- 4 breakout rooms focused on REAP: Research, Education, Advocacy, Practice • Report back from the small groups: Ideas for further networking and collaboration.

Date & Time: Monday, April 26, 2021, 6:00 PM - 7:30 PM

Teddie Potter PhD, RN, FAAN, University of Minnesota School of Nursing; Jessica LeClair MPH, RN, University of Wisconsin- Madison School of Nursing; Katie Huffling MS, CNM, FAAN, Executive Director of the Alliances of Nurses for Healthy Environments; Oriana Beaudet DNP, RN, Vice President of Nursing Innovation, the American Nurses Association Enterprise; Shanda Demorest DNP, RN, Member Engagement Manager Practice Greenhealth; Beth Schenck PhD, MHI, FAAN, Providence-WSU Nurse Scientist/Sustainability Coordinator.

In the Movements of the Earth

Festival

Inspired by the Earth Charter, specifically by the Principle I – which invites respect and care for the community of life –, the At Earth's displacements project is a 10' long videodance conceived by all Moonlight Project (Projeto Luar) fellowships, entailing children from five to twelve years old, teenagers, young adults, women and people with special needs. By embracing the diversity of the targeted public that the institution hosts, the project aims at the reassurance of the respect the Earth Charter highlights. This artistic endeavor is a hybrid language between dance and audiovisual tools, which involves not only a videorecording of a dance choreography, but also an entwinement of both art forms: the recorded dance movement of its performers that is set in tune with videoart. The choreographic movements are inspired by the intake of an imagery of both care and utter disregard to life in its most various forms, in order to ultimately shape dance into an unrestricted invitation to the task of caring and protecting the common good: Earth.

Date & Time: Monday, April 26, 2021, 7:00 PM - 7:10 PM

Production and realization: Projeto Luar.

The Unprecedented Planetary Health Emergency of Committed Global Climate Change and Essential Responses

Side Event

Presentation and discussion of global climate system change as top threat to planetary health, comprehensive current climate change indicators, already committed (locked-in) degree of climate change, IPCC recommended mitigation and adaptation measures, values and lifestyles in response, and conversions of polluting goods and services in line with IPCC 2018 1.5C Report changes in all levels of society.

Date & Time: Monday, April 26, 2021, 7:00 PM - 8:30 PM

Organizers: Peter Carter MD; Dr Reese Halter; Julie Johnston

Oceania: Building bridges to cross the Planetary Health Chasm

Side Event

Our proposed workshop: ‘What does an Oceania Planetary Health Alliance Hub involve?’ has two aims: 1) to establish interest in setting up an Oceania PHA Hub and 2) to contribute new knowledge on planetary health issues relevant to the Oceania region via ‘hot topics’.

Oceania PHA members and other relevant people from the Oceania region such as, Fiona Armstrong (CAHA), Tony Capon and University of Sydney folks, Aaron Jenkins, Kerry Arabena, InVivo and Challenges folks, Chris Golden’s research partners in Kiribati.

Date & Time: Monday, April 26, 2021, 9:00 PM - 10:30 PM

Organizers: Claire Henderson-Wilson; Rebecca Patrick.

Digital Technologies and Access to Equitable Healthcare: available data and the future of telehealth adoption in Brazil

Side Event

Telehealth is an effective tool to promote universal access to health. Its use can bring benefits such as reduced waiting time for care and travel costs for patients and professionals and improving quality of care, and can promote necessary social distancing in clinical settings during the COVID-19 pandemic. Based on the results of the ICT Health survey, conducted by Cetic.br/NIC.br, the panel will present the context for the adoption of telehealth in Brazil, actions being developed and the challenges that set for its expansion.

Date & Time: Tuesday, April 27, 2021, 9:00 AM - 9:45 AM

NIC.br - Moderator: Heimar Marin (UNIFESP); Luciana Portilho (Cetic.br/NIC.br); Stephan Sperling; Sabrina Dalbosco Gadenz (Hospital Sírio-Libanês).

A Planetary Health Blind Spot: Revealing the Potential of Women and the Global South to Safeguard Nature

Side Event

Despite 25 years after the landmark Fourth World Conference on Women in Beijing (1995), gender inequality continues to be a barrier to sustainability and health. The social enterprise Women Leaders for Planetary Health focuses on women’s empowerment as a prerequisite for addressing our current planetary emergency and effectively implementing the UN Sustainable Development Goals (SDGs). On the occasion of Planetary Health Week, we will conduct a session to discuss how gender equity can unleash climate, biodiversity, and health co-benefits for

transformative policies. This dialogue highlights women's empowerment as a crucial step towards a healthier planet and healthier people. To promote collective thinking and the co-creation of solutions, participants are invited to reflect on the following questions: - How is women's health affected by the current climate crisis? - How can greater female representation in leadership positions help to implement planetary health policies? - What would be the best way to promote local female leaders, especially in the Global South? The event will close with the announcement of mentorship opportunities for young female leaders interested in advancing planetary health initiatives with a gender-just dimension in their regions.

Date & Time: Tuesday, April 27, 2021, 9:00 AM - 10:30 AM

Organizer: Nicole de Paula

Citizen science: an approach to promote Planetary Health

Side Event

During the panel, ways in which citizen science can assist society in dealing with health and environmental justice issues will be discussed.

9h00 - Dra. Natalia Ghilardi-Lopes (Federal University of ABC and Brazilian Citizen Science Network) - opening and presentation of speakers

9h10 - Dr. Alan Irwin (Copenhagen Business School) - Citizen Science: a new knowledge politics?

9h30 - Dra. Andrea Grover (University of Nebraska at Omaha) - Citizen Science for Community Resilience

9h50 - Dra. Uta Wehn (IHE Delft Institute for Water Education) - Facilitating the co-design of purpose-driven Citizen Science for Planetary Health

10h10 - comments and questions from the audience

10h25 - closure

Presentation abstracts:

Dr. Alan Irwin - "Citizen Science: a new knowledge politics?"

Abstract: There has been a remarkable growth of activity in the field known as 'citizen science' over the last decade – and at a world-wide level. As the first of the 'ten principles of citizen science' expresses it: 'Citizen science projects actively involve citizens in scientific endeavour that generates new knowledge or understanding. Citizens may act as contributors, collaborators or as project leaders and have a meaningful role in the project.'

In the international discussion of planetary health, citizen science can play a very significant role. However, citizen science covers a range of activities and can have different meanings. Whilst it is common for scientific institutions to view it as a kind of crowdsourcing, the possibilities for boosting scientific citizenship are also important. The question I wish to explore in this session

is whether citizen science represents simply an extension of science or whether it raises new questions concerning what I will term 'knowledge politics'.

Dr. Andrea Grover - "Citizen Science for Community Resilience"

Abstract: When we reflect on the interconnectedness of humans and the earth, it can bring both fear and hope. Our fears are reflected in climate anxiety as we worry about environmental disasters and their impacts on our individual and collective wellbeing. But we can cultivate hope by creating ways for people to take action for both the environment and themselves through citizen science. In this session, I would like to explore how citizen science can help advance the interests of vulnerable communities to strengthen their resilience and address concerns for public health and environmental justice.

Dr. Uta When - Facilitating the co-design of purpose-driven Citizen Science for Planetary Health

Abstract: The production of knowledge for a more sustainable world is undergoing rapid change with the increasing interest and uptake of Citizen Science, which consists of diverse and heterogeneous projects and initiatives. These often extend citizen involvement beyond 'mere' data collection, and include public and community participation in decision making as well as triggering changes towards sustainable lifestyles. Along with the increasing interest in Citizen Science initiatives, there is also accumulating evidence of the difficulties with their implementation. This contribution argues that Citizen Science requires a sound approach that takes different stakeholder realities, perceptions and motivations into account. It explores ways in which we can facilitate the co-design of purpose-driven Citizen Science for Planetary Health.

Date & Time: Tuesday, April 27, 2021, 9:00 AM - 10:30 AM

The Future of Planetary Health Education

Side Event

Amidst the intertwining and pressing realities of the environmental and health challenges we face, educational institutions are uniquely positioned to contribute to achieving the transformations needed for a healthier future by incorporating Planetary Health Education in the curricula. Planetary Health Education across all levels and disciplines will equip and enable learners with the necessary knowledge, skills, values, and attitudes to drive interprofessional and mutually reinforcing actions to protect planetary health.

Date & Time: Tuesday, April 27, 2021, 9:15 AM - 10:45 AM

Jessica LeClair (University of Wisconsin); Naglaa El-Abbadi (Tufts University, USA); Courtney Howard (University of Calgary, Canada); Alonso Aguirre (George Mason University - USA); Barbara Astle (Trinity Western University - Canada); Brett Bayles (Dominican University- USA); Enrique Barros (WONCA - Brasil); Jonathan Patz (University of Wisconsin - USA); Lynda Wilson (University of Alabama at Birmingham- USA); Moses Chimbari (University of KwaZulu-Natal - South Africa); Odipo Osano (University of Eldoret, Kenya); Olwenn Martin (Brunel University, UK); Sarah Walpole (Hull York Medical School - UK); Teddie Potter (University of Minnesota - USA).

SARS Cov2 in the Sewage: State of the Knowledge

Side Event

Brazil has been living for decades with the lack of sanitation and its consequences. Waterborne diseases such as infectious gastroenteritis, yellow fever, dengue fever, leptospirosis, malaria and schistosomiasis reflect the reality of thousands of people daily. The SARS-Cov 2 (Covid 19) pandemic adds new risks and major challenges to public and private managers, who still have limited information and short knowledge available on the subject. The scope of the proposed lecture is to show information on ozone gas on SARS-CoV 2 removal from domestic sewage.

Date & Time: Tuesday, April 27, 2021, 9:45 AM - 10:15 AM

Organizer: Paula A D Vilela.

Sustainable Diets and Food Systems Hub

Side Event

Some researchers who work with sustainable diets from Brazil, Mexico, and the US met at the 2019 Planetary Health Annual Meeting (PHAM) and have been discussing academic papers regularly since then through the Sustainable Diets Journal Club (based at Tufts University). This has established connections between researchers, as well as other academics and practitioners involved in this field, and has become a forum for people from many parts of the world to exchange ideas on this important topic within planetary health. At the 2021 PHAM we want to launch the HUB Sustainable Diets and Food Systems, in which more researchers can join us to discuss published work and other developments in the field, as well as share resources, ideas, and prospect partnerships. During the PHAM we want to have our first meeting, foster transdisciplinary networking, welcome potential members, and organize an agenda of events for 2021.

Date & Time: Tuesday, April 27, 2021, 9:45 AM - 10:45 AM

Carolina Bolaños Palmieri (InterAmerican Center for Global Health); Naglaa H. El-Abbadi (Tufts University Friedman School of Nutrition); Raquel de Andrade Cardoso Santiago (Federal University of Goiás).

COVID-19 & Internet Traffic in Brazil

Side Event

The Internet has become a crucial tool for dealing with social distancing to mitigate the effects of the pandemic. Prior to the pandemic there were 127 million Internet users in Brazil (ICT Households 2019), which corresponded to 74% of the population. When social distancing measures to contain the spread of the new coronavirus were adopted, IX.br, one of the largest Internet exchange point networks in the world, operated by the Brazilian Network Information Center (NIC.br), recorded a peak of about 13.5Tbps, showing that Internet traffic reached an unprecedented volume in the country. This panel will discuss how the Internet infrastructure was able to handle the traffic growth, maintaining the network quality.

Date & Time: Tuesday, April 27, 2021, 10:00 AM - 10:45 AM

Julio Sirota (Ceptro.br/NIC.br); Gabriela Marin (Ceptro.br/NIC.br).

Escassez Hidrica nos Grandes Centros Urbanos (in Portuguese)

Side Event

The demand for drinking water has been systematically restricted in urban areas due to several issues, such as: reduced availability, population growth, agricultural and industrial expansion and water sources degradation. To cope with this scenery of increasing scarcity, the water managers have been searching drinking water sources at long distances from the urban centers and higher costs. In addition, the volume of raw sewage discharged into the rivers has been increasing in the last over years, contributing to the pollution. Therefore, the water reuse of water has been pointed out as an interesting alternative to face the problem. Within this reasoning, here is a discussion on the topic, aiming to conceptualize water reuse, in its various forms, evaluating its indications and risk.

Date & Time: Tuesday, April 27, 2021, 10:15 AM - 10:45 AM

Organizer: Prof Pedro Caetano Sanches Mancuso.

Iran Neves Ordonio e A Floresta Cura (Iran Neves Ordonio and The Healing Forest)

Festival

In Portuguese with artistic performance at the end Iran Neves Ordonio (Pernambuco): Iran Neves Ordonio é engenheiro agrônomo com mestrado em ciências do solo pela UFRPE. É membro do coletivo da agricultura indígena Xukuru de Ororubá Jupago Kreká e responsável pelo complexo religioso Centro de Agricultura Xukuru do Ororubá-CAXO da Boa Vista. Desenvolve pesquisa que resgata o modo de produção nativo através do cultivo agroecológico e do retorno às tradições de plantio e de cura pelos alimentos. A Floresta Cura com Djuena Tikuna (Amazonas): Djuena Tikuna é uma cantora indígena brasileira do Amazonas que fez história, em 2017, ao tornar-se a primeira indígena a protagonizar um espetáculo musical no Teatro Amazonas (Manaus). Todas as suas composições estão na língua tikuna, povo que habita a zona fronteira entre o Brasil, Colômbia e Peru. Seu canto de luta e resistência tem sido exemplo para as novas gerações. Seu primeiro álbum Tchautchiüãne foi indicado ao Indigenous Music Awards, premiação da música indígena mundial. Para a Conferência Saúde Planetária, Djuena apresenta o canto “A Floresta Cura” de sua autoria.

Date & Time: Tuesday, April 27, 2021, 10:45 AM - 10:55 AM

Organizer: FAPIB-SE.

Edson Kayapó e Mekaron - A Imagem da Alma (Edson Kayapó and Mekaron - The Image of the Soul)



Festival

In Portuguese with artistic performance at the end Edson Kayapó (Amapá) Edson Kayapó é historiador e ativista do movimento ambientalista e indígena no Brasil. Graduado em História pela UFMG, mestre em História Social pela PUC-SP e doutor em Educação: História, Política e Sociedade na PUC-SP. Atualmente é professor efetivo do Instituto Federal da Bahia (IFBA), atuando na docência em licenciaturas, cursos técnicos e Pós-graduação lato sensu, além de orientar TCCs e monografias. Kayapó (Pará) e grupo Mawaca (São Paulo) - Mekaron - A imagem da alma Do encontro do grupo Mawaca com um grupo Kayapó da aldeia Moykarakô somado às imagens do fotógrafo indigenista Renato Soares, nasceu o show 'Mekaron - Imagem da Alma', gravado ao vivo em 2019 no Sesc Pompéia. Os Kayapó preferem se autodenominar "mebêngôkre", que significa "os homens do buraco/lugar d'água". São falantes da língua da família linguística Jê, do tronco Jê. Os Kayapó têm a oratória como uma prática social valorizada e se definem como aqueles que falam bem e bonito (kaben mei). Seu principal líder Raoni comprova essa característica de bom orador há décadas em sua defesa pelos povos indígenas e pela floresta. Mawaca é um grupo de músicos de São Paulo que desenvolve pesquisa e performance de repertórios em mais de 20 línguas e tem criado intercâmbios com indígenas.

Date & Time: Tuesday, April 27, 2021, 2:30 PM - 2:40 PM

Organizer: FAPIB-SE.

Ibã Sales Huni-Kuin

Festival

In Portuguese with artistic performance at the end Ibã Huni Kuin (Acre): Ibã Huni Kuin (Isaiás Sales) é um txana, mestre dos cantos na tradição do povo Huni-Kuin, aprendidos com seu pai, seringueiro no Acre. Ingressou na Universidade Federal do Acre em 2008 e criou o Projeto Espírito da Floresta visando pesquisar processos tradutórios multimídia para esses cantos. Criou o coletivo MAHKU – Movimento dos Artistas Huni Kuin - tendo obras expostas em diversos museus como o MASP, MAM, Foundation Cartier, Tomie Ohtake, dentre outros.

Date & Time: Tuesday, April 27, 2021, 2:40 PM - 2:50 PM

Organizer: FAPIB-SE.

Sustainable Aging and Planetary Health

Side Events

Global population is ageing. An expressive proportion of people living worldwide are over 60 years-old, nowadays. By 2050, estimates indicate that the number of older people will double. Along with the ageing of the population, societies need to (re)organize their structures in a way to foster and/or support people to age healthily and in place, while being active members of communities. Preparing for ageing is fundamental to achieve the integrated Sustainable Development Goals (SDG) of 2030 Agenda, because successful ageing can contribute to decrease demands on natural resources and ecosystems that interfere on Planetary Health (PH). Sustainable Ageing (SA) is a complex process that integrates 'ageing' with 'sustainability'. It is

about implementing a plan of actions that helps to end poverty and hunger among older people, to promote healthy lives and well-being and to reduce inequalities by ensuring inclusive education, gender equality, access to services and support. It is about promoting just and inclusive societies for people to age and older people to live. Societies committed to the achievement of the SDG must be societies committed to promoting SA policies and SA researches directed to support successful ageing. Actions to foster SA can help build “The Future We Want” for all generations. This symposium aims to promote a debate about SA and the ways it can contribute to achieve the SDG and PH.

Date & Time: Tuesday, April 27, 2021, 3:00 PM - 4:00 PM

Renata E. L. Ferretti-Rebustini; Angelique Mavrodaris; Stefanie Piña-Escudero; Aziz Salem; Antonio Mauro Saraiva.

An introduction to technology and innovation for planetary health: exploring a case example of food security and farmer sustainability

Side Event

“This panel will open with an introduction to the ethical and community considerations of applying disruptive technologies to solve pressing global challenges. To fully explore this topic a case example of applying new technologies to smallholder farms will be discussed and is described below.

The debate as to whether smaller farmholders produce 70% of the world's current food supply continues; however what cannot be discounted is that small farmers are needed to sustain the future of the food supply. Small farmers represent rural populations who are highly equally marginalized, hungry and poor yet they have proven to deliver higher yields per acre versus larger farming operations. Smaller farmers are the most suited to maximizing field productivity and achieving crop diversity amongst the backdrop of growing climate change's impact on freshwater supply, agriculture pathogens and pests. However, they cannot rely on generational knowledge and outdated tools to meet the demands of a growing population to feed, less access to freshwater supply, and increasing impact of climate change. Smaller farmers need to become “smarter” in their operations and therefore require access, education and utility of “disruptive” technologies to make them effective in this endeavor. Therefore if we want to keep the world from going hungry in the future while protecting the earth's grounds, we need to understand how to sustain the source of our food supply starting with arming smaller farmers with the necessary smart technologies. Key topics in this session:

1. Understanding the pragmatic impact of “disruptive” technologies and applications for food and farmer sustainability
2. Through the development of global standards, making these “disruptive” technologies accessible and utilitarian for these farmers”.

Date & Time: Tuesday, April 27, 2021, 3:00 PM - 4:00 PM

Maria Palombini, Director, Emerging Communities & Opportunities Development, Healthcare & Life Sciences Practice, IEEE Standards Association.

Hope for Diversity: Healing Ourselves and Planet Earth through Planetary Health Friendship

Side Event

Our panel discussion will feature speakers who are members of two grassroots initiatives: “Planetary Health Friendship Team” and “Biodiversity For All”. We share a common story of connection through Planetary Health activities and events. Although only recently we were strangers, and most of us have still never met in person, we quickly learned about our common vision for healthy people and a healthy planet. We also have closely aligned ideas about practical steps that we can take as professionals, advocates, and Planetary citizens to both understand and rectify the interdependent causes of poor human health and environmental degradation. Our shared “root” in Planetary Health infuses our interactions and overlapping advocacy for a world where the privilege of meeting like-minded allies who showcase the beauty of diversity is widely shared. We currently live in different parts of the world and have especially strong connections to Brazil, Rwanda, Liberia, Kenya, and the United States. Our diverse disciplinary backgrounds span Clinical Medicine, Psychology, Nutrition, Public Health, Law, Nursing, Conservation, and Disaster Planning. Our presentations will employ a “root” and “seed” analogy that focuses on storytelling that highlights both our individual interests in Indigenous Wisdom and Traditional Ecological Knowledge (our “roots”) and our personal and professional work to actively build a more just and healthy world for all life-forms (“seeds”). We believe that “Hope” is a simple and scalable frame for Healing Ourselves and Planet Earth--cultivating worldviews and values that widely understand, embrace, and protect biodiversity, cultural diversity, and linguistic diversity. As a logical extension of our origin stories that center around unity and diversity, we are actively planning to ensure that participants in our session will be able to connect with global allies, so that as Planetary Friends we can catalyze and accelerate the transformative shift that reunites humanity with the natural world.

Date & Time: Tuesday, April 27, 2021, 3:00 PM - 4:30 PM

Nightingale Wakigera, University of Glasgow; Roberto de Almeida, UNILA (Federal University of Latin-American Integration); Raquel Santiago, Federal University of Goias (UFG); Tatiane C Moraes de Sousa, Oswaldo Cruz Foundation; Ulisses Schlosser; Nathan Uchtmann, University of California, San Francisco; Vedaste Niyonsaba, Wageningen University and Research; Laura Hanson, Regional Disaster Preparedness Organization.

Ecosystem health education: Teaching leadership and SDGs through team-based assignments

Side Event

Health and sustainability are, at their core, interchangeable, which is reflected in the Sustainable Development Goals (SDGs) spanning across the interface of humans, animals and environment. Challenges to realizing SDGs are more “wicked” and urgent than ever. Complex relationships between climate change, disease emergence, food and water security, gender, conflict, and poverty on sustainability of ecosystem services that support human and animal health are well documented; students preparing for ecosystem health careers need to be prepared to function in

transdisciplinary teams, equipped with leadership skills to navigate complexity, balance diverse stakeholders' needs, and respond to unforeseen situations.

Date & Time: Tuesday, April 27, 2021, 3:00 PM - 4:30 PM

Elizabeth Sopdie, PhD, Administrative Director, Rural & Metropolitan Physician Associate Programs, University of Minnesota, esopdie@umn.edu; Dominic Travis, DVM, MS, Associate Professor, Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, datravis@umn.edu; Shaun Kennedy, BS-Che; Director at the Food Systems Institute; Adjunct Associate Professor in Veterinary Population Medicine, kenne108@umn.edu; Tiffany Wolf, DVM, Assistant Professor, Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, wolfx305@umn.edu; Barrett Colombo, MPP, Manager for Education and Policy, Institute on the Environment, colom008@umn.edu; Meg McEachran, Graduate Research Fellow, Minnesota Aquatic Invasive Species Research Center; Kaylee Errecaborde, Instructor, Department of Veterinary Population Medicine, myhre044@umn.edu; Scott Spicer, MLIS, MA, Media Outreach Librarian, Libraries, University of Minnesota, spic0016@umn.edu.

Deconstructing climate misinformation to identify reasoning errors

Side Event

Misinformation about climate change has confused the public and stalled support for mitigation policies. Climate science is particularly problematic because of the complexity of the systems under study. When people lack the expertise and skill to evaluate the science, they typically rely on heuristics such as substituting judgment about something complex (i.e., climate science) with judgment about something simple (i.e., the character of people who speak about climate science) and are vulnerable to misleading information. Inoculation theory offers one approach to effectively neutralize the influence of misinformation by explaining the reasoning fallacies within misleading denialist claims. However, explaining fallacies within denialist claims first requires systematic analysis of these claims to determine whether they are deductively valid arguments whose premises are true. In this workshop, I'll outline a strategy based on critical thinking methods to analyse and detect poor reasoning contained within denialist claims. This strategy includes detailing argument structure, determining the truth of the premises, and checking for validity, hidden premises, or equivocating language. Next, participants will interactively work through some examples of climate misinformation, putting into practice the step-by-step deconstruction approach. Finally, participants will reflect on challenges and insights gleaned while performing this critical thinking task.

Date & Time: Tuesday, April 27, 2021, 7:30 PM - 8:30 PM

Organizer: John Cook.

Lagos Air Quality Monitoring

Side Event

According to Environmental Defense Fund, 90% of the global population breathe unhealthy air around the world. Air Pollution is an environmental hazard of human health concern. This is rapidly becoming a global menace as it is a contributor to more than 5 million premature deaths yearly. This includes heart attacks, strong, diabetes and respiratory diseases. EnvironQuest is currently providing solutions to Air Pollution with her Air Quality Program which consists of a network of compact air quality sensors and weather stations, complete with data acquisition and visualization software, as well as optional air quality dispersion modeling. We provide air quality monitoring, analysis and emission modeling services with the highest standards of accuracy, and based on those findings, we design industrial pollution control measures to meet regulatory requirements. In our side event, we would be having a panel discussion on how EnvironQuest is currently tackling Air Pollution in Nigeria, challenges and recommendations for improvement. We understand that Air Pollution has severe socio-economic implications as well as the health hazards it imposes and it's an issue of serious Planetary Health concern.

Date & Time: Wednesday, April 28, 2021, 8:00 AM - 8:30 AM

Funmi Akindejoye; Uchenna Orjiakor; Omobolanle Olowu; Kolawole Mate; Iyiola Oladunjoye.
All Affiliation: EnvironQuest Limited.

Global Health and Planetary Health: perspectives for a transition to a more sustainable world

Side Event

This workshop will bring up a transdisciplinary discussion on the Planetary health Conference topics in an integrated way and complementing them with issues studied in the Global Health field, as global environmental health; health security; human migration; ethics and human rights; syndemy of mal-nutrition, obesity and climate change aggravated by COVID-19 pandemic; and the loss of biodiversity, with recognized experts and researchers.

Date & Time: Wednesday, April 28, 2021, 8:45 AM - 10:45 AM

Oceania PHA members and other relevant people from the Oceania region such as, Fiona Armstrong (CAHA), Tony Capon and University of Sydney folks, Aaron Jenkins, Kerry Arabena, InVivo and Challenges folks, Chris Golden's research partners in Kiribati; Elizabeth Sopdie, PhD, Administrative Director, Rural & Metropolitan Physician Associate Programs, University of Minnesota, esopdie@umn.edu; Dominic Travis, DVM, MS, Associate Professor, Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, dtravis@umn.edu; Shaun Kennedy, BS-Che; Director at the Food Systems Institute; Adjunct Associate Professor in Veterinary Population Medicine, kenne108@umn.edu; Barrett Colombo, MPP, Manager for Education and Policy, Institute on the Environment, colom008@umn.edu; Meg McEachran, Graduate Research Fellow, Minnesota Aquatic Invasive Species Research Center, Kaylee Errecaborde, Instructor, Department of Veterinary Population Medicine, myhre044@umn.edu; Scott Spicer, MLIS, MA, Media Outreach Librarian, Libraries, University of Minnesota, spic0016@umn.edu; Elizabeth Sopdie, PhD, Administrative Director, Rural &

Metropolitan Physician Associate Programs, University of Minnesota, esopdie@umn.edu; Dominic Travis, DVM, MS, Associate Professor, Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, datravis@umn.edu; Shaun Kennedy, BS-ChE; Director at the Food Systems Institute; Adjunct Associate Professor in Veterinary Population Medicine, kenne108@umn.edu; Barrett Colombo, MPP, Manager for Education and Policy, Institute on the Environment, colom008@umn.edu; Meg McEachran, Graduate Research Fellow, Minnesota Aquatic Invasive Species Research Center, Kaylee Errecaborde, Instructor, Department of Veterinary Population Medicine, myhre044@umn.edu; Scott Spicer, MLIS, MA, Media Outreach Librarian, Libraries, University of Minnesota, spic0016@umn.edu; Sandeep Maharaj (PHA Global Outreach Fellow); Caribbean Regional Hub; Sub-Saharan Africa Regional Hub; Europe Regional Hub; Olwenn Martin, Brunel University London; Mary Richards, Brunel University London; Victor Kaluba University of Zambia; Emelda Hachoofowe Copperbelt University; Stephen Syampungani, University of Zambia; Ximena Schmidt Brunel University London; Steven Sam Brunel University London; Justin Munyaka United Nations Development Programme; Shona Paterson, Brunel University London; Mweene Mimba Department of Resettlement; Mandekh Hussein, Brunel University London; Planetary Health Club Berlin (with Planetary Health Club Brazil); John Cook; Maria Beatriz Martins Costa - Green Rio CEO; Regina Pnho - SESC RJ Director; Cleber Soares-MAPA; Lise Walbom-Food Cluster/Denmark; Rafael Zavaloa-FAO; Peter Carter MD; Dr Reese Halter; Julie Johnston; Paulo Marchiori Buss: Fiocruz, RJ; Eliseu Waldman, Dept. of Epidemiology, School of Public Health of University of São Paulo; Deisy Ventura, School of Public Health of University of São Paulo; Gabriela Marques di Giulio, School of Public Health, University of São Paulo; Helena Ribeiro, School of Public Health of University of São Paulo; Patrícia Constante Jaime, School of Public Health of University of São Paulo; Tereza Campello, cátedra Josué de Castro School of Public Health of University of São Paulo; João Nunes, York University, UK; José Eli da Veiga, Institute of Energy and Environment University of São Paulo.

Food supply chain and planetary health challenges

Side Event

Green Rio is a green economy and bioeconomy marketplace. Since its first edition in 2012, when it was recognized as a Rio + 20 side-event, Green Rio welcomes national and international speakers, exhibitors committed to sustainability and organizes business roundtables. On March 2015, by the invitation of the German Foreign Affairs Ministry, Maria Beatriz Martins Costa, Green Rio's CEO, took part in the Brazilian delegation that visited Germany in order to discuss strategies and potential Brazil-Germany partnerships in the Bioeconomy scenario. The Brazilian delegation was led by Senator Luiz Henrique da Silveira, then the Minister of Science and Technology. Since this visit, Green Rio has been promoting bioeconomy in many opportunities. The Brazilian biodiversity - the world's largest - is a strong asset in the setting of the global Bioeconomy, and social inclusion and diversity should be part of this scenario.

Date & Time: Wednesday, April 28, 2021, 9:00 AM - 10:30 AM

Maria Beatriz Martins Costa - Green Rio CEO; Regina Pnho - SESC RJ Director; Cleber Soares-MAPA; Lise Walbom-Food Cluster/Denmark; Rafael Zavaloa-FAO.

The change we need in Health and Quality of Life in the largest city of Brazil

Side Event

One important way of addressing the greatest challenges regarding natural systems and quality of life in urban areas is to apply effective public policies with tangible results. São Paulo State monitors the Air Quality in the São Paulo Metropolitan Region and also started a project for Cleaning Pinheiros River, which crosses the central region of the City of São Paulo and flows into Tietê River, the largest river of the State of São Paulo. The scope of this event is to present these two projects and how they can help to achieve quality of life in the largest city of Brazil.

Date & Time: Wednesday, April 28, 2021, 9:30 AM - 10:30 AM

Patrícia Iglecias - Associate Professor University of São Paulo, PhD in Law, University of São Paulo; CEO at CETESB; Marcio Rea – Bachelor Degree in Business; CEO at EMAE Admilson Cleyton Barbosa - PhD in Renewable Resources, UFSCar/SP; Environmental Manager at EMAE; Maria Ines Zanoli Sato – PhD in Biological Sciences, University of São Paulo; Laboratories Manager at CETESB; José Eduardo Bevilacqua - PhD in Chemistry, University of São Paulo; Technical Assistant at CETESB's Environmental Impact Board; Nelson Menegon Junior – Master degree in environmental hydraulics, University of São Paulo; Technical Assistant at CETESB's Environmental Quality Engineering Board; Maria Lucia Guardani – Bachelor Degree in Chemistry, University of São Paulo; Manager of Quality of Air Division at CETESB.

Digital inclusion and the response to COVID-19: new evidence and policy issues

Side Event

Digital technologies have become crucial tools for dealing with social distancing and mitigating the effects of COVID-19 pandemic. However, deep regional and socioeconomic inequalities are also reproduced in the online environment, preventing universal access to information and to online services. The Panel will present new evidence on the issue, including data from the ICT Panel COVID-19 (Cetic.br/NIC.br), and discuss policy issues related to the response to the pandemic, such as the uptake of remote learning.

Date & Time: Wednesday, April 28, 2021, 10:00 AM - 10:45 AM

Fabio Senne (Cetic.br/NIC.br); Lorena Barberia (University of São Paulo / Solidary Research Network).

A review of the evidence in support of Green "Prescriptions" by healthcare clinicians as a low- cost, effective intervention in disease prevention and in the care of chronic illnesses

Side Event

A healthcare facility event focused on hospital leadership and clinician facing information, on the benefits of: 1) Increasing access to green space on their campus or nearby, to encourage greater social cohesion between the hospital sites and the local communities around them. 2) Sparking projects that bring together professionals and volunteers to use new and existing greenspaces for community education, art, vegetable/flower gardening, reflection, physical activity and to encourage native biodiversity that supports the natural environment - including the planting of trees. 3) Highlighting innovative ideas to encourage the use of gardens and other green space for therapeutic purposes.

Date & Time: Wednesday, April 28, 2021, 3:00 PM - 3:30 PM

Organizer: Milagros R. Elia.

Children and Planetary Health: Collaboratively Connecting and Uniting for Healthy Children and a Healthy Planet

Side Event

Our panel discussion will feature speakers who are members and leaders of two grassroots initiatives: “Child Health Is Planetary Health” and “Teachers For Planetary Health”. We will highlight the activities that our allied initiatives have undertaken and review the scientific evidence, clinical practice, and educational models that reveal the dynamic and interdependent relationship between Child Health and Planetary Health. We will also mobilize our friends, families, and children to participate in both this event and the other Conference activities as a way to build our community of practice and showcase the impact of centering child- and family-friendly values such as love, care, compassion, and stewardship. Through building on our diverse lived and professional experiences, we will showcase innovative and impactful initiatives around the world that protect and promote children as active agents in shaping the world of the future. Our leadership in areas ranging from public policy, child rights, clinical medicine, and educational practices informs our shared vision about ways to connect planetary health priorities with child health priorities. Integrating the agendas for healthy children and a healthy planet holds transformative potential to build a world that is safe for people everywhere, human and non-human lifeforms, and present and future generations. The bidirectional relationship between children and planet informs our practice, and we will use this in our presentations.

Date & Time: Wednesday, April 28, 2021, 3:00 PM - 4:30 PM

Sue Bennett, University of Ottawa; Mary Chesney, University of Minnesota; Richard Fransham, Uniting for Children and Youth; Nathan Uchtmann, University of California San Francisco; Nightingale Wakigera, University of Glasgow.

PHA Living Labs Workshop

Side Event

The tech-industry is at historic crossroads: although substantial breakthroughs in AI research are rapidly advancing development of ‘smart’ technologies and infrastructures, the successes of the Fourth Industrial Revolution are overshadowed by large-scale environmental disruptions, and their fatal impact on human health. Without deeper reflection on what individuals and

communities value and how they would like to make use of technological systems reduces such solutions to the narrowest imagination of the institutions that create and control them, rather than the rich opportunities they might afford. Planetary Health innovation beckons demand for ethical research methodologies that mediate a new social contract between tech developers and end users to foster futures literacy via grassroots citizen science, education, and participatory action research, and challenge tech industries to embrace the wellbeing of people and the planet as much as profit and productivity: by harnessing place-based community wisdom to guide the cutting-edge of technology innovation, it is possible to catalyze Planetary Health in the social, political and economic structures of today.

Please join us for the PHA Living Labs Workshop focused on ideating innovative solutions in public policy, corporate settings and community activism that demonstrate how the tech industry can support community-based Planetary Health interventions in a broad range of contexts. This workshop is open to all PHA members interested in envisioning, co-creating and leading a PHA Living Lab as part of PHA's new Technology and Innovation community.

Date & Time: Wednesday, April 28, 2021, 3:00 PM - 4:30 PM

Organizer: Maria Palombin, Director, Emerging Communities & Opportunities Development, Healthcare & Life Sciences Practice, IEEE Standards Association.

Trans-disciplinary Collaborations for planetary health: Focus on climate change effect mitigation on human health, in the lens of SDGs number 3, 11 and 17

Side Event

Planetary health argues that human health and that of natural environment are indivisibly linked, and it has been suggested that transdisciplinary collaboration (TDC) focused on mitigating the effect of climate change on health in the lens of Sustainable Development Goals (SDGs) number 3, 11, and 17 are needed. Transdisciplinary collaborations (TDC) referred to a process of establishing collaborations among actors from different disciplines and sectors (academics/public/private/civil society) in pursuit of a common goal. Climate change adversely impact human health with disproportionate challenges; the effect of human health is an issue of great public health concern. Its implications on health and well-being, are manifested through a raise in water and air borne diseases as a result of environmental pollution, extreme weather events (tropical cyclones, wildfires, heat, droughts) and food insecurity among others. SDG 3 deal with health and well-being targets, SDG 11 look at sustainable cities and communities, while SDG 17 discuss partnerships for the goals. In this regard, the discourse seek to explore and understand the patterns of collaboration suitable for the emerging TDC that sought to strengthen planetary health for sustainable development. To achieve this feat, transdisciplinary approaches are being posited as a solution to the links between climate change and health. As such participants from academics, nongovernmental organizations, private and public sectors, focusing on mitigating environmental and health issues are targeted, to augment their understanding on how disciplinary contributions could integrates SDGs 3, 11, and 17, for climate change mitigation and preparedness.

Date & Time: Wednesday, April 28, 2021, 4:00 PM - 5:30 PM

Dr: Umar Ibrahim; Director Health, Abubuwa Societal Development Initiatives (ASDI); Bauchi State, Nigeria, West Africa and Senior Lecturer, College of Medicine, Federal University Dutse; Jigawa State, Nigeria, West Africa.

Indigenous Values and Principles, and Planetary Health

Side Event

“Indigenous knowledge, distilled over millennia of close and direct contact with nature, can help to point the way. Indigenous peoples make up less than 6 per cent of the world’s population yet are stewards of 80 per cent of the world’s biodiversity on land. Already, we know that nature managed by indigenous peoples is declining less rapidly than elsewhere. With indigenous peoples living on land that is among the most vulnerable to climate change and environmental degradation, it is time to heed their voices, reward their knowledge and respect their rights.”

Date & Time: Wednesday, April 28, 2021, 6:00 PM - 7:30 PM

Trevor Hancock; Marco Akerman; Sione Tuitahi; Antonio Saraiva.

Indigenous Village Renaissance "Agroecology and Sustainability" (Aldeia indígena Renascer "Agroecologia e Sustentabilidade")

Festival

In this video, we have as protagonist the indigenous Cristiano, Awá Kiririndju, from the village Renascer.

This territory is located in Ubatuba, where 21 families of the Tupi Guarani and Guarani M'bya ethnic groups live, who develop valuable work with agroforestry. The community manages to maintain these families, cultivate for their economy and still bring back the fauna that was part of the territory in remote times. They have been resisting for 22 years, with minimal support for planting, they only managed to become a model for the state of São Paulo because the community believed in this possibility of change. This is an example that, willingly, change is possible! Neste vídeo, temos como protagonista o indígena Cristiano, Awá Kiririndju, da aldeia Renascer.

Esse território fica em Ubatuba, onde moram 21 famílias das etnias Tupi Guarani e Guarani M'bya, que desenvolvem um trabalho valioso com agroflorestal. A comunidade consegue manter estas famílias, cultivar para sua economia e ainda trazer de volta a fauna que fez parte do território em tempos remotos. Faz 22 anos que eles resistem, com um apoio mínimo para o plantio, só conseguiram chegar a ser modelo para o estado de São Paulo porque a comunidade acreditou nessa possibilidade de mudança. Esse é um exemplo de que, com vontade, a mudança é possível!

Date & Time: Wednesday, April 28, 2021, 7:30 PM - 7:45 PM

Organizers: Carmen Gattás; Edmilson Gonçalves.

Coral _ Rádio Ceci Jaraguá Guarani



Festival

By Karai Papá, translation: Marcelo. Aldeia Renascer plants varieties such as banana nanica and apple, lemon, cocoa, jackfruit, mango among others. The children plant with their teachers and their parents, the video presents a little of the preservation work in Aldeia Renascer, together with the children of the village.

Por Karai Papá, tradução: Marcelo. A Aldeia Renascer planta variedades como banana nanica e maçã, limão, cacau, jaca, manga entre outras. As crianças plantam com seus professores e seus pais, o vídeo apresenta um pouco do trabalho de preservação na Aldeia Renascer, em conjunto com as crianças da aldeia.

Date & Time: Wednesday, April 28, 2021, 7:45 PM - 8:00 PM

Organizers: Carmen Gattús; Edmilson Gonçalves.

TERRAQUEOUS MEDITATIONS: a musical lecture-performance by Victor Kinjo

Festival

Victor Kinjo is a singer, composer and researcher born in Brazil with uchinanchu roots (one of the Indigenous Peoples of Okinawa/Japan). In this lecture-performance, recorded in his house at the Atlantic Rainforest, he presents songs and reflections about planetary health and the Earthling condition from an Indigenous, queer and diasporic perspective. Nominated as Best Singer at the Brazilian Music Awards 2018 for his first album KINJO (Matraca/YB Music, 2017), the artist is a PhD in Social Science at the University of Campinas and author of the book “Quem são Mishimas?” (Ed. Autêntica, 2020). Currently, he is a post-doc researcher at the Center of Synthesis USP Global Cities at the Institute of Advanced Studies of the University of São Paulo, investigating the place of culture in urban river revivals from a transdisciplinary and arts-based approach. Kinjo is also preparing to release his second album TERRAQUEOUS.

Date & Time: Wednesday, April 28, 2021, 8:00 PM - 9:00 PM

Credits: Conception and performance: Victor Kinjo; Direction and lecture filming: Eduardo Colombo; Editor: Renan Castilho; Production: Água Viva Cultura.

Lecture-Performance produced with the support of the São Paulo Research Foundation/FAPESP Post-doctorate Scholarship (2019/02074-8) “River revitalization in Global Cities: international experiences and challenges of São Paulo” and the Programa de Fomento à Arte e Cultura of Secretary of Culture and Tourism of Mogi das Cruzes, Lei n. 7.222/2016 – Approved Project n. 2019.029.7 “Território Cultural Serra dos Tapanhuns”, in partnership with Sociedade Amigos de Taiçupeba, SAMAUMA Rural Arts Residency/ SARAR and RÁDIO Caramelo TAIA FM - 87,5 Mhz.

PHAM Evaluating Student Knowledge Exchange through immersive international experiences

Side Event



The Enhancing Student Knowledge (ESKE) project funded by the UK's Office for Students and Research England, looks to develop reciprocal knowledge exchange opportunities for students in the UK and Zambia. The project focusses students' attention on the multi-dimensional food security challenges of both countries, particularly as they relate to long term health and nutritional outcomes of former refugees and their families in Zambia, and people without homes or sleeping rough in the UK. The project team have been developing an immersive five week learning opportunity across the two countries that will continue to be developed iteratively four times over 2 years with different sets of students in a range of different settings in London and in Mayukwayukwa, Western Province. The aim is to develop students into graduates who have an enhanced sense of their own potential as leaders of change, and of their interconnectedness to the global mission of mutual responsibility to an environmentally sustainable future. As well as new knowledge built on collectively executed activities and projects that take a systems approach to address the complex issues in hand, friendship and enhanced reciprocity between students in the global north and south are also anticipated outcomes. The proposed workshop at the PHA event aims to share the initial model developed to achieve these goals with the aim of inviting critique from conference participants and/or the sharing of others experience of fieldwork practice, in the spirit of creating a forum for mutually beneficial discussions and the sharing of best practice useful to the development of planetary health education in broadest terms. This is likely to be of interest to post graduate students, practitioners, educators, academics and others working in the context of practically addressing inequities through student focussed projects.

Date & Time: Thursday, April 29, 2021, 9:00 AM - 10:30 AM

Olwenn Martin, Brunel University London; Mary Richards, Brunel University London; Victor Kaluba University of Zambia; Emelda Hachoofo Copperbelt University; Stephen Syampungani, University of Zambia; Ximena Schmidt Brunel University London; Steven Sam Brunel University London; Justin Munyaka United Nations Development Programme; Shona Paterson, Brunel University London; Mweene Mimba Department of Resettlement; Mandekh Hussein, Brunel University London.

Brazilian Planetary Health Club: Reflections and tips on building a PH Club

Side Event

In this presentation, members from the Brazilian Planetary Health Club will share some reflections and tips from their own experience in the process of building and growing a Planetary Health Club.

The topics covered are:

- Planetary Health in the world: Clubs and Ambassadors
- Our club
- A quick word from our friends from London, Berlin and Vancouver
- Building your club's foundations: The manifest and internal rules

- Who we are in contact with: Building Planetary Health bridges
- Why work together ?

We hope that this presentation can help people planning on developing a PH Club from scratch but also to the already existing PH Clubs.

Date & Time: Thursday, April 29, 2021, 9:30 AM - 10:30 AM

Organizer: Lucas Saraiva.

Rodrigo Prates Junqueira e Vídeo Povos da Floresta (Rodrigo Prates Junqueira and Forest Peoples Video)

Festival

In Portuguese with artistic performance at the end Rodrigo Prates Junqueira (São Paulo): Rodrigo Prates Junqueira é mestre em Ciência Ambiental e engenheiro-agrônomo de formação. Desde 2005, atua no Instituto Socioambiental (ISA), organização que propõe soluções de forma integrada a questões sociais e ambientais com foco central na defesa de bens e direitos sociais, coletivos e difusos relativos ao meio ambiente, ao patrimônio cultural, aos direitos humanos e dos povos de diversas regiões do país. Povos da Floresta (ISA): O vídeo “Povos da Floresta” é um recado urgente de indígenas, quilombolas, ribeirinhos e extrativistas ao governo brasileiro, políticos e empresários, garimpeiros, madeireiros, grileiros e demais invasores das terras indígenas. A mensagem “Vamos seguir resistindo” é o lema da campanha organizada pelo Instituto Socioambiental (ISA), que pede o apoio da sociedade na luta pela proteção do patrimônio ambiental brasileiro e em defesa dos direitos dos povos indígenas e populações tradicionais.

Date & Time: Thursday, April 29, 2021, 10:40 AM - 10:50 AM

Organizer: FAPIB-SE.

A Planetary Health Model in South East Madagascar: community led solutions to protect the Manombo Special Reserv

Festival

Health In Harmony is an international nonprofit dedicated to reversing global heating, understanding that rainforests are essential for the survival of humanity. Using the innovative process of Radical Listening, we collaborate with the experts – rainforest communities – to create the change the planet needs. We asked communities in the Manombo Special Reserve what they see as the solution to live more in harmony with the forest. They told us that if they have access to high-quality and affordable healthcare, regenerative agricultural training, options for alternative livelihoods through agroforestry, and education, it will support them to stop slash-and-burn agriculture in the forest, resist external pressures, and protect this essential part of Madagascar’s rainforest. The rainforest communities around the Manombo Special Reserve will take you on a virtual tour to show us the programs they designed; how they protect the forest in return for discounted healthcare, how they can pay with non-cash for their healthcare, the

seedling nurseries they built so they can pay with seedlings for healthcare and for our team to restore critical parts of the Manombo Special Reserve, and their organic gardens and rice plots to combat the hunger season.

Date & Time: Thursday, April 29, 2021, 10:50 AM - 11:00 AM

Credits: Hasina Manantsoa, Program Manager HIH Madagascar; Eric Andrianarisata, Communication Coordinator HIH Madagascar; Noor Trienekens, International Program Manager, HIH.

The importance of the use of cultural spaces in the peripheral areas east of São Paulo: Mental Health for Young People

Side Event

The proposal englobes Peripheral Culture, urban life in the metropolis (city) and contribute for mental health.

Life in the metropolis is increasingly busy, with traffic. In the professional world, time is short, the answer has to be quick, there are deadlines. Under pressure from the programmed daily life, it is necessary to be strong and have good mental health.

I would like to share how important this initiative and experience is for those who live in cities and contribute to mental health. Mental health is the result of good habits. And a cultural life helps us.

Date & Time: Thursday, April 29, 2021, 3:00 PM - 3:15 PM

Organizer: Felipe Ramos.

Cooking together to celebrate Planetary Diversity

Festival

The maintenance and conservation of biodiversity through utilization has proven to be an efficient strategy to protect the planet. Thus, the proposal will provide a moment to share knowledge and traditions, through the shared flavors and aromas of the same ingredient, the cassava. During the festival, each country will present one (or more) traditional recipe with the proposed food, describing the importance to culture and tradition and highlighting the relevance of this food to biodiversity and health. The festival aims to promote a connection between communities from different countries in order to spread their traditional knowledge, especially through food, music, language, dance and art. By getting to know each other, it is very likely that the stakeholders will have some common aspirations for healthy food based on plant and animal products that the nature around them experiences. These aspirations will then help them to engage in food diversification and the conservation of nature that is the storage for such food. In addition, the event will help people understand that the basic foods that we can often ignore are actually healthy and can be recovered and eaten in their original form or minimally processed to maintain the integrity of nature.

Date & Time: Thursday, April 29, 2021, 3:00 PM - 4:00 PM

Credits: Aline Martins de Carvalho - University of São Paulo; Ulisses Schlosser- UNILA (Federal University of Latin-American Integration); Tatiane CMoraes - Fiocruz (National School of Public Health); Roberto de Almeida - UNILA (Federal University of Latin-American Integration); Nightingale Wakigera, University of Glasgow; Nathan Uchtmann, University of California, San Francisco; Vedaste Niyonsaba, Wageningen University and Research; Laura Hanson, Regional Disaster Preparedness Organization; Lucy Tavares - Ana Laura's Community Leader (Piracanjuba, Goiás, Brazil); Andrea - Empório da Chaya (Collective of women farmers, Paracambi-Rio de Janeiro, Brazil); Raquel de A C Santiago (Federal University of Goiás); Camila Loiola (Federal University of Goiás).

A Planetary Health approach to the Covid-19 Pandemic: Lessons from Indonesia, Madagascar, and Brazil

Side Event

COVID-19 is the symptom of a sick planet. Humans and rainforests require an emergency response. Based on our experience enacting an infectious disease medical response and rainforest stimulus package in Indonesia, Madagascar, and Brazil, we will share the win-win impact on communities and the environment. Panelists will share how this approach bolsters resilience and may help prevent future shocks of the climate and nature crisis. Planetary health practitioners and organizations found themselves uniquely situated to manage the interconnected impact of Covid-19, including human suffering and mortality, as well as the downstream impacts on household economies and rainforest ecosystems. Panelists will offer their insight, experiences and perspectives on how they have done this effectively- and lessons learned. We hope to inspire global uptake of planetary health approaches to this and future climate shocks. Ashley Emerson and Jonathan Jennings with a combined 30+ years in emergency and humanitarian response work, will provide an overview of three distinctly different case studies and the process of developing and quickly deploying an emergency response alongside rainforest communities. Dr. Enrique Barros will provide a deep perspective on his work in rural southern Brazil during the pandemic and how he has implemented practical community-based solutions in the hospital in which he works to enhance planetary health during the pandemic. Dr. Wayne Walker, ecologist and climate scientists at Woodwell Climate Research Center will provide a scientific overview of how these practical solutions are aligned with climate science and the ability that rainforests and their communities have to affect substantial carbon sequestration and avoidance of future pandemics. Dr. Erika Pelegrino will offer insights into her experience launching a pandemic response in Indigenous and traditional communities in the Xingu River Basin in the Brazilian Amazon.

Date & Time: Thursday, April 29, 2021, 3:00 PM - 4:30 PM

Wayne Walker, Woodwell Climate Research Center; Enrique Barros, Universidade de Caxias do Sul (UCS); Ashley Emerson, Health In Harmony; Dr. Erika Pellegrino, Federal University of Pará Medical School.

Blockchain for Good: using technology for addressing climate change/biodiversity issues



Side Event

The panel will showcase three initiatives where Blockchain is used to address concerns pertaining to realm of Planetary Health. Specifically, the topics are: Reduction of climate change by sustainable digital finance, also called “green fintechs” (by Thomas Puschmann); BlockPenn: Energy and Environmental monitoring across the university campus, thus promoting energy savings among students and staff (by Dorit Aviv); and Using blockchain technology to collect, store and distribute biodiversity data from the Amazon Rainforest, creating an alternative and sustainable approach for economically exploring the region (by Marcos A. Simplicio Jr.). Lauren Weymouth, from Ripple, will moderate the session and present the UBRI network, after Antonio Saraiva briefly introduces the panel.

Date & Time: Thursday, April 29, 2021, 4:00 PM - 5:00 PM

Thomas Puschmann (U. Zurich, Swiss FinTech Innovation Lab); Dorit Aviv (U. Pennsylvania, Dept. Architecture); Marcos A. Simplicio Jr. (Universidade de São Paulo, Escola Politecnica); Lauren Weymouth (Ripple); Antonio Mauro Saraiva (Universidade de São Paulo, Escola Politecnica).

The Health of South American Atlantic and Antarctic Marine Ecosystems in a Post-Pandemic World

Side Event

Marine habitats and the ocean have a huge influence on climate, global climate change and consequently on human health. In South America, millions of coastal residents depend directly on products from the sea and the quality of their water. The health of these environments has been severely affected by global climate change and other human interventions. On the other side, changes in these environments are expected to result in feedback mechanisms that can radically accelerate global climate change.

Date & Time: Thursday, April 29, 2021, 4:00 PM - 6:00 PM

Speakers: Evangelina Schwindt (Argentina) - Invasive species and health of marine habitats of the Southwestern Atlantic; Andrés Mansilla (Chile) - Marine Protected Areas as tools for conservation of pristine sub antarctic habitats. Alvar Carranza (Uruguay) - Diversity and conservation of marine habitats in Uruguay; Alexander Turra (Brazil) - Marine Policy and conservation of habitats in Brazil; Paulo Horta (Brazil) - Threats to Brazilian Marine Habitats. Flávio Berchez - Knowledge and perception of marine habitats in Brazil.

Affiliations: Dr. Evangelina Schwindt, Instituto de Biología de Organismos Marinos (IBIOMAR-CONICET) Research Director, Puerto Madryn, Argentina. Dr. Andrés Mansilla, Universidad de Magallanes, Dean for Research, Punta Arenas, Chile. Dr. Alvar Carranza Centro Universitario Regional Este - CURE, Universidad de la República, Montevideo, Uruguay. Dr. Alexander Turra, University of São Paulo, Coordinator of the UNESCO Chair on Ocean Sustainability, São Paulo, Brazil. Dr. Paulo Antunes Horta, Universidade Federal de Santa Catarina, ReBentos Network Rhodolith Beds Coordinator, Florianópolis, Santa Catarina, Brazil. Dr. Flá

vio Berchez, Universidade de São Paulo, CienTec Park Director, ReBentos Network Environmental Education Coordinator, São Paulo, Brazil.

Debaters: Priscila Saviolo Moreira, Anchieta Island State Park, São Paulo, Brazil. Natália Ghilardi Lopes, Universidade Federal do ABC, São Paulo, Brazil.

An urgent discussion: Should family doctors consider being more assertive about advising their patients to cut down on red meat?

Side Event

Recommendations to reduce red meat consumption have been stated by many global health organisations. The detrimental impact on individual and planetary health can no longer be ignored. Healthcare professionals must take responsibility to educate our patients about this connection with our food choices and support our patients for a diet which excludes, or at very least reduces, red meat. By doing so, we can deliver an evidence based message which offers a sustainable approach for optimising human health as well as protecting the health of our planet.

Date & Time: Thursday, April 29, 2021, 4:30 PM - 6:00 PM

Laura Freeman (WWPE); Andy Haines (LSHTM); Enrique Falceto de Barros (WWPE); Alice McGushin (WWPE); Leslie Solomonian (Naturopathic Doctors for Environmental and Social Trust).

What would be a capacity building process in Planetary Health? Which contents? Which skills? Which attitudes?

Side Event

In February 2020, as part of the Summer Program at the School of Public Health - USP we offered a course “To postpone the end of the world: Planetary Health in the Anthropocene – determination, Intersectoriality and Interdisciplinarity. We had 20 participants from different institutions and professions. The course had a workload of 40 hours with the collaboration of professors from four Universities. Three triggering questions guide the discussion during the course: 1. Have you heard of Planetary Health? 2. Is the Planet really at risk or is this pure academic catastrophism? 3. What would you do to postpone the end of the world? At the beginning, it was requested that with the accumulation that the week allowed, the participants would produce, a personal narrative answering the question: “What would you do to postpone the end of the world?” The program presented these main contents: Definitions on Anthropocene and Planetary Health; presentation of personal examples / testimonies of what they perceive about the impact of the Anthropocene on Health; examples from scientific literature on such impacts, challenges, the search for courageous confrontations, but which gain scale, overcoming the “romanticism” of “do in your backyard”; state and public policies, Denaturalize, Decolonize, Demercantilize, Denaturalize; what is the nature of public policies in view of the capitalist society's way of production and of being in the place where we live; Inconsistent narratives and necessary re-readings - On the parallels between the dominant narratives of the environmental crisis and social inequalities in health and their alternatives; are we tied hands and feet or is there something to be done in the macro, meso and micro? To qualify

the Meso; what would be a “new generation” intersectorality?. Our workshop intends to make a critical analysis of this program, dialoguing with other experiences to be told by the participants of the Workshop.

Date & Time: Thursday, April 29, 2021, 5:00 PM - 6:30 PM

Marco Akerman (Organizer); Samuel Moyses (UFPR); Dais Rocha (UNB); Elis Borde (UFMG); Maia Cristina Franceschini (CEPEDOC Cidades Saudáveis).

24/1' — Sound art collaborative online installation

Festival

What 24/1' (twentyfour one) proposes is a three-step process, that may be a little adventure in slowness for those who wish to collaborate. Record 24 hours of sound from a fixed location. Transpose 24 hours to 1 minute. Listen to and compare all 24/1's. By recording 24 hours of sound from a fixed location and transposing to 1 minute without changing the frequency spectrum, it is possible to compare locations. Using playsound.space (<http://playsound.space/twentyfourone>), a web-based tool by Ariane Stolfi, we can listen and compare, as well as create with all results. For inclusion purposes (file size) and wishing to work with the technographic layer to this sonification of sound, the recording will be in MP3 stereo format and can be done in simple devices, taking up around 2GB of space. 24/1' does not want precise information or to conceal marks left by our devices and data compression. It intends play and creation, and is a simple idea to connect different places through sound and listening. There are different technical challenges that take a little effort. Results will be hosted at open platform [Freesound.org](https://freesound.org/) (<https://freesound.org/>) and collaboration is achieved through a Creative Commons Attribution-ShareAlike License. If you wish to collaborate, just go ahead reading instructions, here (<https://sites.google.com/usp.br/twentyfourone>).

Date & Time: Thursday, April 29, 2021, 7:00 PM - 7:15 PM

Credits: Daniel Puig, in collaboration with Ariane Stolfi.

Reflections on Global Grief in COVID-19

Side Event

This event will be a narrative-based panel presentation, where healthcare and public health professionals from around the world can share stories and discuss their experiences with grief pertaining to the COVID-19 pandemic. Confirmed panelists come from South Africa, Malawi, Mexico, and the United States, and range from students to established frontline professionals. We will begin by discussing grief in general, including personal definitions and experiences where the panelists are comfortable. We will then transition into discussing our communities' perceptions of grief. We will consider continuities and differences of community and workplace grief management before and during the pandemic. Lastly, we will discuss any lessons that can be applied from this global grief experience to other looming or present complex global disasters or stressors. After the panelists have initiated the discussion, audience members are welcome to submit comment or questions. We will also be taking and sharing recommendations on grief resources. The purpose of this meeting is not to have a psychological deconstruction of grief.

Rather, it is an opportunity for healthcare professionals from around the world to share stories, reflect, and connect on this global experience. We hope to consider pandemic-related grief within the broader cultural context. Ultimately, the goal of this meeting is to foster empathy and identify lessons that will allow for further preparedness to meet future challenges.

Date & Time: Thursday, April 29, 2021, 8:00 PM - 9:00 PM

Chikondi Chiweza (OBGYN, Baylor-Malawi); Shastra Bhoora (Critical Care Physician, Johannesburg, South Africa); Omar Jagot (Pediatric Surgery Fellow, Kamuzu Central Hospital, Lilongwe, Malawi); Adrienne Lefevre (Global Health Specialist, Karna); Emmanuel Gaeta (Medical Student, UC Davis Medical School).

Social Sciences for Planetary Health

Side Event

Researchers working in the field of planetary health will discuss how social science should be incorporated into planetary health research, fieldwork and implementation, in order to advance understanding and practice of often complex systems. The panel includes social scientists (anthropologists, human geographers, economists, sociologists, marketing specialists) whose work bridges Knowledge, Attitudes, Practice (KAP), cost benefit analysis (CBA), implementation, communication, policy and change management. Some of the panelists have worked extensively within the field of planetary health, others are newer to the field. They come from across the globe and their experience is equally broad - from North America, South America, Europe, Africa, India and Australia, and from Academia, NGOs and International agencies. The panel will begin a longer, ongoing discussion of the value of social science to planetary health.

Date & Time: Friday, April 30, 2021, 8:45 AM - 10:45 AM

Jennifer Cole, Department of Geography, Royal Holloway University of London; Tony Capon, Monash Sustainable Development Institute, Monash University; Sam Bickersteth, Opportunity International UK; Zoë Rozar, Institute Bon Pasteur, Mauritius; Eneus Trindade, School of Communication and Art, University of São Paulo; Dr. Padma Venkat, Dean, School of Public Health, SRM Institute of Science & Technology, Chennai, India; Katharine Zywert, School of Environment, Resources, and Sustainability, University of Waterloo.

Climate change and human health - from knowledge to action

Side Event

Our satellite event proposal is a workshop titled 'Climate change and human health - from knowledge to action'. We would like to show how climate change and health is viewed by students, highlight young people's priorities and explore what planetary health means from a health justice perspective. The first part of our event focuses on youth priorities for climate change and health. We hope to present perspectives on planetary health from the viewpoint of the young health community, exploring and understanding demands related to climate change and health. In this section, we present youth demands gathered from the preliminary findings from our UK research study. Our workshop aims to engage participants in collaborative discussion. In the next segment, we focus on their opinions on the relationship between climate change and health justice. We

would like to know what gaps they think should be filled and collect emerging demands. To help everyone express their views we will use interactive tools such as Mentimeter. By the end of this discussion, we will produce a virtual poster that gathers our ideas to share on social media and use in our campaigning. We want to end our session with learning about how to create campaigns and fight for planetary health. We aim to present lessons learnt during our activity and provide information on how to start organising at participants' university or locality, what sources to use and where to seek support. This includes showcasing our activities, such as a campaign for health and climate justice at COP26, which culminated in a letter from the health community to the UK government and COP26 leadership and obtained over 1100 signatures and a BMJ publication. We will run this session interactively, engaging participants to help them organise advocacy for planetary health in their communities.

Date & Time: Friday, April 30, 2021, 9:00 AM - 10:00 AM

Students for Global Health Coordinated Theme: Rhiannon Osborne; Students for Global Health Rae Halliday; Students for Global Health Elizabeth Violaris; Students for Global Health Francis Gainsborough; Students for Global Health Cindy Zheng; Students for Global Health Lamia Abusheba; Students for Global Health Belen Alonso; Students for Global Health Henna Reddy; Students for Global Health Aleksandra Czyzak; Students for Global Health Lizzie O'Brien; Students for Global Health Rohan Vijjhalwar; Students for Global Health Amit Singh; Students for Global Health Anuradha Ponnappalli; Students for Global Health Hannah Thomas; Students for Global Health Weronika Kozuch; Students for Global Health Mark Baker; Students for Global Health.

Neighborhood assistance: a chance to create healthy and sustainable cities

Side Event

Urban places can exacerbate the gap between (health) inequalities and inequities, and cause social isolation. On the other hand, urban spaces offer a diversity of choices and community interactions. As a positive side-effect of the COVID-19 pandemic, a bond of solidarity was formed by the increase of neighbourhood assistance and some supporting platforms have been successfully established. We want to build on the potential these existing platforms offer and integrate dimensions of sustainability.

Date & Time: Friday, April 30, 2021, 9:00 AM - 10:30 AM

Organizer: Planetary Health Club Berlin (with Planetary Health Club Brazil).

Scaling Up Planetary Health Awareness and Practices for Transformative Action Among the Eastern African Community

Side Event

This event will showcase the impactful planetary health activities that emerged in the Eastern African Region recently supported by the German Alliance Climate Change and Health Alliance. The session will be run as a panel, including speakers with multidisciplinary background giving

an insight into their experiences and challenges with planetary health activities in the Eastern African Region. After short insights by each panelists, there will be a panel discussion on the opportunities for further planetary health engagement in the African region under the title “Scaling up Planetary Health awareness and practices for transformative action among the Eastern Africa communities”

By the end of the session the participants will be able to learn and understand about:

- 1) How knowledge transmission on planetary health happens in the Eastern African region;
- 2) The vehicles for change that have had the most success in Africa and how this can inform planetary health strategies for the Eastern African region;
- 3) The interlinkages between public health and planetary health practices in the Region;
- 4) Obstnacy between administration, community, policy makers, universities, business stakeholders and politics.

Date & Time: Friday, April 30, 2021, 9:00 AM - 10:30 AM

Organizer: Melvine Otieno.

2020 PHCA Program: Showcasing Projects and Initiatives

Side Event

This event will showcase 4-5 projects that emerged out of the 2020 cohort of Planetary Health Campus Ambassadors. The session will be run as a panel, with each of the teams who led a project presenting for about 10 minutes, and will culminate in breakout rooms where Q&A sessions can take place. The panelists will be limited to members of the 2020 PHCA Cohort, but the 2021 Cohort will be strongly encouraged to attend and participate in the breakout rooms, in efforts to closely link those two groups. The projects that will be showcased include a “Planetary Health ABCS” children’s book project, a planetary health competency framework, a planetary health pledge, a university call to action, and graduate efforts to promote sustainable healthcare.

Date & Time: Friday, April 30, 2021, 9:15 AM - 10:45 AM

Tassia Oswald, PHCA 2020; Kathy Wabnitz, PHCA 2020; Victoria Haldane, PHCA 2020; Melody Wu, PHCA 2020; Aminat Adebayo, PHCA 2020; Viveka Guzman, PHCA 2020; Yina Shan, PHCA 2020; Rosa von Borries, PHCA 2020; Iris Blom, PHCA 2020.

Solar World Cinema

Side Event

Maureen, creator of the Solar Cinema based in the Netherlands, will present the international solar cinema network sharing the lessons learned from this social mobilization, where environmental themes and cinema mix in the activities. This network includes Brazil, South Africa, Nepal, Chile, Jamaica and other countries.

Date & Time: Friday, April 30, 2021, 10:00 AM - 10:30 AM

Cynthia Alario – Cinesolar; Maureen Prins - Solar Cinema.

Tawanã Kariri-Xocó Fulkaxó e Cristine Takuá

Festival

In Portuguese with artistic performance at the end Tawanã Kariri- Xocó Fulkaxó (Alagoas): Tawanã é líder cultural e pajé dos Fulkaxó - grupo que reúne três povos Fulni-ô, Kariri e Xocó - que vivem na caatinga em Alagoas. Tawanã vem de uma família de pajés que utiliza plantas medicinais e paisagens arbóreas da Mata Atlântica, que sustentam sua visão de mundo ancestral. Desde 2011, a família de Tawanã lidera uma campanha legal perante a FUNAI, que permitiu que direitos de relocação fossem concedidos aos Kariri-Xocó, em 2019. A família de Tawanã criou a Reserva Ecológica Fulkaxó e assim protege a floresta de queimadas ilegais e liderando iniciativas de reflorestamento. Tawanã foi baleado duas vezes e preso injustamente por seu trabalho como guardião da floresta, mas permanece inabalável em sua convicção de compartilhar a espiritualidade e a cultura de seu povo, expressa na música e na dança, para a cura de um mundo em crise. Cristine Takuá (São Paulo): Formada em Filosofia pela UNESP, Cristine ministra aulas de Filosofia, Sociologia, História e Geografia na EE Indígena Txeru Ba'e Kua-I, DER Santos. Atualmente é membro fundadora do Fórum de Articulação dos Professores Indígenas no Estado de São Paulo (Fapisp), fundadora e conselheira do Instituto Maracá. Vive na Terra Indígena Ribeirão Silveira, que se localiza na divisa dos municípios de Bertioxa e São Sebastião. In Portuguese with artistic performance at the end.

Date & Time: Friday, April 30, 2021, 10:50 AM - 11:00 AM

Organizer: FAPIB-SE.

Para Onde Vamos? / Where are we going? – Crossroads

Festival

Este projeto é resultado de um lindo processo colaborativo que reuniu voluntariamente artistas, profissionais e doadores que compartilham com a gente o desejo de construir um futuro onde as belezas e riquezas do nosso planeta, a nossa casa comum, sustentem de forma generosa a vida de todos os seres que aqui habitam, sem exceção.

This video is the result of a beautiful collaborative process that brought together volunteer artists, professionals and donors who share the same wish to create a future where the natural beauties and riches of our planet, our common home, sustains generously the lives of all beings, without exception.

Date & Time: Friday, April 30, 2021, 1:00 PM - 1:10 PM

Música: Beto Villares

Letra: Carlos Rennó

Realização: Famílias pelo Clima; Parents for Future Global; Fridays for Future Brasil.

Direção de vídeo: Toni Vanzolini

Produção musical: Beto Villares

Produção artística: Carlos Rennó

Produção executiva: Isabella Prata

INTÉRPRETES: Antonio Villares; Arnaldo Antunes; Artemisa Xakriabá; Beto Villares; Céu; Chico Brown; Clara Ito; Dora Morelenbaum; Edivan Fulni-ô; Fabiana Cozza; Luzia Barros; Manu Julian; Marcia Kambeba; MC Soffia; Moreno Veloso; Ná Ozzetti; Paula Morelenbaum; Paulinho Moska; Pedro Villares; Projeto Guri; Roberta Sá; Taciana Barros; Thalma de Freitas; Theo de Miranda Jordão; Tom Karabashian; Tom Wisnik; Viola Corullon; Zeca Baleiro; Zélia Duncan.

Músicos: Beto Villares: piano; Jaques Morelenbaum: violoncelo; Quarteto Ensemble SP; Nelson Rios: violino; Marcelo Jaffé: viola; Rafael Cesário: violoncelo; Betina Sttegman: violino; Terabytes; Antonio Ito: bateria; Pedro Tomaz, Mariana Braga e Clara Gouveia: percussão; Gabriel Braga: guitarra; Fil Pinheiro: Sintetizadores.

Intérpretes do projeto guri: Ana Luiza Irmão de Souza; Beatriz Nascimento; Bruno Sillas Cassiano da Silva; Camile Felix; Gabriela de Souza; Heitor Batista Rizzo; Heloísa Ferreira Salles; Isabela Picinato Lemes; Jéssica Visentin Júlio; João Pedro Biasini; Julyana Mayra Cassiano da Silva; Kelly Souza de Freitas; Laura Fernandes Gouvêia; Laura Toledo Nascimento; Lorena Neiva Bergamin; Maria Eduarda Pereira; Mariana Pereira Ribeiro; Megara Volpato Munhoz; Murilo Posto Cerqueira; Paulo José Moreira Piarini; Pedro Henrique C. Angeleli; Pedro Henrique C. Domingues; Rafaelly Souza Freitas; Renato Campos Angeleli; Riquelme Francisco Bernardes; Sophia de Camargo; Thayna Gislaïne Francisco Bernardes.

Equipe do projeto guri: Marina Shibukawa Vidal; Pablo Carajol Delvage; Simone Roncoleta; Vanessa Rodrigues Zambão.

Fotografia: Fabio Braga; Filipe Franco; Fred Sieverdt; Renato Libanor.

Produção: Roberta Prata; Paula Tesser.

Legendagem: Fran Mosquera.

Traduções: Andy Beer, Burak Gorgullo, Flavio Queiroga, Jesus Garcia, Mariana Menezes, Roberta Dubeux.

Gravação: Trampolim Estudio; Ambulante Estudio; Nas Nuvens Estúdio.

Agradecimentos: Alan Dubner; Alexandre Mirandez de Almeida; Ana Paula Silveira Onofre; Anistia Internacional Brasil; Ari Colares; Berna Ceppas; Bianka Van Hoegaerden; Burak Gorgulu; Carol Pinsdorf; Carol Soldado; Carolina Overmeer; Caru Zilber; Cecilia Cruz Villares; Christiane Amback; Clara Ramos; Coalizão Pelo Clima; Doris Bicudo; Elaine R. Teixeira; Estúdio Ambulante; Estúdio Nas Nuvens; Estúdio Trampolim; Fabio Barros; Fernanda Carvalho; Flavio Queiroga; Flora Gil; Fyodor Pavlov-Andreevich; Fundação Amazonas Sustentável; Gabriel Nascimbeni; Greenpeace Brasil; Gustavo Martins Cedroni; Habacuque Lime; Haidée Paixão; Hugo Prata; Idel Arcuschin; Instituto Alana; Imagine 2030; Ivan Arcuschin; João Sobral; JP; Karine Mayara; Lenis Rino; Lilian Kogan; Liminha; Lisa Gunn; Luiz Villares; Luiza Arcuschin;

Luiza Ferreira;Luiza Souto; Madres por El Clima – Madrid, Manu Costa; Mari Brunini; Maria Beatriz; Mariana Clayton; Mariana Menezes; Mariana Saraceni; Marilia Cyrne; Michele Matalon, Mila Maluhi, Nancy Silva , Natalia Hilarinda; Nazaré Metsavaht; Olivier Berggruen; Paola Curi; Patricia Albuquerque; Patricia Casé; Pedro Ito; Regina Jeha; Renata Machado; Roberta Dubeux; Sofia Prado; Taina Marajoara; Thiago Monteiro; Tiago Rodrigues; Vicente Barros.

Bro Mcs

Festival

In Portuguese with artistic performance at the end Bro Mcs (Mato Grosso do Sul): Primeiro grupo de rap indígena do Brasil. Formado por quatro indígenas do povo Guarani e Kaiowá. Sua gênese emerge no seio dos conflitos por terras que outrora eram indígenas. Com letras marcantes, o Brô extrapola fronteiras físicas e imateriais construindo pontes por meio do rap e das culturas indígena e do hip hop. Neste videoclipe ‘Retomada’, o grupo joga luz sobre o problema que mais atinge os povos originários: a demarcação dos territórios indígenasIn Portuguese with artistic performance at the end.

Date & Time: Friday, April 30, 2021, 2:55 PM - 3:00 PM

Organizer: FAPIB-SE.

We Regenerate Rainforests

Festival

Join Brazilian American Environmental Artist Alana Lea on a visual journey of Solutions Activism. The story begins in 2009, when she returned to Brazil for the first time since leaving as a baby, then launching an eco-textile line to spread awareness of the Atlantic Rainforest — 93% gone — among her friends in North America. By 2010 she was able to give the first 1,000 native species trees to a community of smallholders in Cunha, São Paulo to restore their degraded pastures. The project grew, receiving recognition as a “citizen initiative that mitigates the effects of global warming” by the French Ministry of Environment after the Paris Conference of Parties, COP21. She then began to create a series of environmental art banners to present at COP 22 and COP 23, the Global Climate Action Summit, and the World Agroforestry Congress. Be inspired by Los Angeles school children who sponsored 2,000 trees with their benefit concert. Meet the international Ministers of Agriculture and organizational leaders who signed the 4p1000 Declaration banner during COP22 in Marrakesh. Witness research scientists and climate change initiative leaders signing her Drawdown banner at COP23 in Bonn. Discover the pioneers of Regeneration at the Global Climate Action Summit in San Francisco. Visually learn about Brazilian Multistrata Agroforestry (Drawdown Solution #28) at the Agroforestry World Congress in Montpellier. Celebrate a decade of supporting smallholders to restore degraded landscapes in Central and South America, with the U.S. non-profit iGiveTrees.

Date & Time: Friday, April 30, 2021, 2:55 PM - 3:05 PM

Alana Lea, Environmental Artist & Founder of US non-profit iGiveTrees.org; Produced by Leala Rose.

Planting the seeds for planetary health YOUTH by YOUTH

Side Event

There's a disconnect between the current status quo and what we imagine, or haven't even imagined yet, that could serve us. Most of our educational, health and nature experiences have been designed for a world that is based on industrial, white, patriarchal models. A way of being that is perceived, for example, as linear, divisible and separable. Yet, we actually live in a world that is interconnected, diverse, complex and continually emerging and we are increasingly aware of the challenges we face today. It's not surprising then that recent research shows that 83% of young people feel their education does not prepare them to live in the world today and only 20% value it. What if there was another way learning and education could be? What if young people had just as much a say in their decision making as adults? In this immersive session, we will use practices of radical reimagination to co-create new possibilities. We will use our imagination for liberation by exploring four pillars: creating space to dream, deepening how to be in right relationship, giving ourselves permission to play, and reflecting and writing new stories. I'm excited to explore how we can get closer to the learning, health and planetary wellbeing of our longing when we radically reimagine our collective liberation together.

Date & Time: Friday, April 30, 2021, 3:00 PM - 4:00 PM

Moderator: Jessica Spencer-Keyse.

Speakers: Valentina Raman; Zineb Mouhyi.

Creating feasible and effective pathways to a healthy, zero-carbon world. Evidence from real-world scenarios

Side Event

Co-hosts: The Pathfinder Initiative provides practical, evidence based pathways to a zero-carbon future through transformative local, regional and global actions. Its vision is to create a global community that delivers transformative solutions for a healthier, fairer and more prosperous post-carbon society. The LSHTM Centre on Climate Change and Planetary Health was established to generate evidence-based solutions for planetary health across disciplines and sectors and nurture generations of planetary health leaders. The WONCA - Working Party on the Environment has, as its aim, to lead Family Doctors in protecting the health of patients and communities from the impacts of environmental hazards and threats, and to promote environmental and planetary health at both the local and the planetary level. This side event will bring together a cross disciplinary panel to discuss how to identify and communicate the health benefits of climate mitigation actions across a number of sectors. The event will feature talks on 1. the Pathfinder Initiative - the rationale behind the new project, its initial findings and plans for the next 18 months; 2. sustainable food systems and their role in helping transition to a healthier future; 3. the co-benefits of climate mitigation and adaptation in urban developments; 4. the role of primary care health systems in communicating and delivering planetary health and; 5. the political economy of transformative strategies for planetary health. Short talks of 10 minutes will be followed by a moderated Q & A session from the panel of speakers. Questions will be invited from all attendees at the session via Zoom chat and from questions submitted prior to the event.

Titled, ‘Creating feasible and effective pathways to a healthy, zero-carbon world: Evidence from real-world scenarios’, the event brings together a cross-disciplinary panel to discuss how to identify and communicate the health benefits of climate mitigation actions across a number of sectors.

We will discuss the exciting work of the Pathfinder Initiative, the London School of Hygiene & Tropical Medicine (LSHTM) Centre on Climate Change and Planetary Health and the World Organization of Family Doctors (WONCA) Working Party on the Environment.

Topics will include, the role of nature-based solutions in achieving net zero and a healthy future, the co-benefits of climate mitigation and adaptation in urban developments, the role of primary care health systems in delivering planetary health and the political economy of transformative strategies for planetary health. This session features five expert speakers with Q&A, chaired and moderated by Amy Thomas, Climate Change and Planetary Health Communications Officer, LSHTM.

Date & Time: Friday, April 30, 2021, 3:00 PM - 4:30 PM

Speakers: Andrew Haines, Professor of Environmental Change and Public Health, LSHTM; Nicole de Paula - Sustainability Fellow, Institute for Advanced Sustainability Studies (IASS) Potsdam; Kristine Belesova, Assistant Professor and Deputy Director of the Centre on Climate Change & Planetary Health, LSHTM; Enrique Falceto, Chair of the Working Party on the Environment of WONCA; Peninah Murage, Co-deputy director of the Centre on Climate Change & Planetary Health, LSHTM.

How Radically Listening to communities is addressing the climate and nature crisis: Results from proof of concept site for Health In Harmony

Side Event

We will discuss the positive impacts of a planetary health approach in Indonesian Borneo after ten years and how this approach can be implemented globally. The results, which were published in the Proceedings of the National Academy of Sciences in October 2020, show how improving rural healthcare has reduced illegal logging and conserved carbon in this rainforest in Indonesian Borneo. The paper shows that a \$5.2 million investment between 2007 and 2017 led to a stabilization of primary forest loss, 21,000 hectares of secondary forest regrowth, a 90% drop in logging households, and \$65.3 million in averted carbon loss. Simultaneously, the initiative delivered a wide array of health benefits, including a 67% decrease in infant mortality. Ashley Emerson has worked in international development and emergency response for over ten years and more recently applying these skills to a planetary health COVID-19 response. She will share how this research is being applied to international replication and scale efforts. Jonathan Jennings who has over 20 years in emergency and humanitarian response work will talk about Health In Harmony’s planetary health approach and what makes it successful. He will also discuss how this type of programming can be implemented in other countries and contexts.

Date & Time: Friday, April 30, 2021, 4:00 PM - 5:00 PM

Ashley Emerson, Health In Harmony; Jonathan Jennings, Health In Harmony.

Communicating the impacts of climate change through arts and dance

Festival

During Planetary Health Week, dance choreographers will conduct dance sessions by performing dance moves that expresses issues of climate change crisis, showcasing some of the consequences of anthropogenic activities that have impacts to the environment and the subsequent consequences to our health. The performance will highlight how the indigenous community in Africa have been involved in environmental conservation and protection and being part of the solution for the climate crisis. The broader audience will have an opportunity to reflect on the following questions; what is our role in the planet, what do we value and what are we willing to sacrifice and need not to sacrifice for in our environment? The dance festival will close by addressing the importance of inclusion of creative art approaches to climate change communication within planetary health education and training. This will encourage all planetary health advocates to embrace the power of art in creating solution spaces for addressing climate crisis, non-communicable diseases and mental health and other planetary health issues.

Date & Time: Friday, April 30, 2021, 4:30 PM

Organizer: Melvine Otieno.

Building bridges between science and society: how can parents and family activism contribute to the advancement of the climate agenda?

Side Events

Panel with activist parents from different countries who, with the support of technology, came together to exchange experiences, offer mutual support and organize collective actions internationally. The group will debate the importance of citizen engagement, its demands, concerns and achievements. The social movement is essential to make communities aware of the importance of planetary health. More than understanding a concept, it is important that ordinary people understand how their daily choices impact ecosystems and, at the same time, are impacted by them. The main goal is to promote the sensibilization of the public to the Climate Change Crisis. Make the climate movements of parents better known, amplify the voice of this movement and inspire more citizens to trust science and to fight for our voices to be heard.

Date & Time: Friday, April 30, 2021, 5:00 PM - 6:00 PM

Moderator: Renata Simões, Brazilian journalist and TV presenter

Panelists: Clara Ramos (co-founder Parents For Future Brazil); Representatives of Parents for Future England, Our Kids Climate and other parent organizations (TBD). Amuche Nnsbueze, mother of 3 professor at the University of Nigeria, and climate activist of Parents of Future movement; Clara Ramos, mother of two. Audiovisual producer and researcher, journalist with a master and doctorate degree at University of São Paulo. Co-founder of Famílias pelo Clima/Parents for Future Brazil. Jill Kubit, Mother of one, climate educator and social entrepreneur. Cofounder of Our Kids Climate and Dear Tomorrow, two initiatives created to promote engagement on the climate agenda; José Gerardo Velasco, father of three and grandfather of six. Medical Doctor, Doctor in Science, Retired Professor at the Universidad

Autónoma de Nuevo León. Adviser for the Interinstitutional Committee on Climate Change and Health, State of Nuevo León. Activist of Padres por el Futuro Monterrey; Rowan Ryrie, mother of 2, Human Rights and Environmental Lawyer, active founder of Parents of Future Oxford, Parents for Future UK and Global Parents for Future.

Yoga for Planetary Health

Festival

Yoga is an ancient science and practice that can foster openness, strength and peace through the alignment of mind, body and breath. Yoga is often translated as “to yoke” or “to unite,” and in planetary health, we seek to yoke and unite diverse peoples, disciplines and worldviews to collectively engender the more beautiful world that we know is possible. As planetary health practitioners, it is vital that we take care of our own physical, mental and spiritual health, finding balance between grit and grace as we work toward the Great Transition. Yoga is a wonderful nature-based practice to guide our self-study and to bring us back into physical and emotional alignment. During this 75-minute planetary health themed Vinyasa class, we will move, sweat and breathe through our eco-anxiety and leave feeling more connected to the natural world, each other and ourselves. Suitable for all levels; please bring a mat or towel and have access to props (e.g. yoga block, thick book or pillow) if you might need or desire a more supported practice.

Program: During this 75-minute planetary health themed Vinyasa class, we will move, sweat and breathe through our eco-anxiety and leave feeling more connected to the natural world, each other and ourselves. Suitable for all levels; please bring a mat or towel and have access to props (e.g. yoga block, thick book or pillow) if you might need or desire a more supported practice.

Organizer: Max Rose Zimberg.

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