



Planetary Health Report Card:

University of Glasgow



University
of Glasgow

2020-2021 Contributing Team:

- Students: Vidya Nanthakumar*, Darcy Maule, Elise McFarland, Ann-Elin Myhre
- Faculty Mentors: Camille Huser
- *Primary Contact: Vidya Nanthakumar, 2364757N@student.gla.ac.uk

Summary of Findings

Curriculum	D
<ul style="list-style-type: none"> Planetary Health (PH) connections exist within the curriculum, but they are largely based on elective coursework, specifically through the “Global Health and Travel Medicine” Y2 SSC. PH connections in the curriculum could be made more explicit, with more dedicated time, especially in the core curriculum. The medical school should identify PH (including climate change) as priority Intended Learning Outcomes (ILOs) and include material in test questions, in addition to filling in content gaps. Suggestions for doing so are below in more detail, specifically in relation to adding content to the Vocational Skills curriculum, Keeping People Healthy block, and within the epidemiology section of PBLs. 	
Interdisciplinary Research	C+
<ul style="list-style-type: none"> The Centre for Sustainable Solutions (CfSS) was introduced in April 2020 and provides a place for climate crisis related interdisciplinary research, and centralises research and connections within the Institution. The work they are doing is highly commended. The Medical School has a number of faculty interested in PH and could build links with the CfSS, as a greater involvement with the CfSS could be beneficial in terms of research, as well as developing resources to add to the medical curriculum. 	
Community Outreach and Advocacy	F+
<ul style="list-style-type: none"> The Medical School has a large community outreach programme, but it is not focused on PH. The Medical School could build connections with environmental justice groups in Glasgow, and other advocacy projects (Docs not Cops) and work in partnership. The Medical School could also engage with community partnerships that the Institution maintains, such as with “Sustainable Glasgow” or “Climate Ready Clyde” and enable Planetary Health related conversations in these partnerships. 	
Support for Student-Led Initiatives	B-
<ul style="list-style-type: none"> Overall, the administration is supportive of student-led PH initiatives, offering their time and enthusiasm for student work. However, there is no specific funding for PH initiatives specifically. There is also no centralised database of faculty interested in PH, current/past research projects regarding PH, or grant opportunities. We suggest a Moodle page be developed centralising these resources, and a page on the Centre for Sustainable Solutions website. 	
Sustainability	C
<ul style="list-style-type: none"> Due to pressure from advocacy groups on campus, the Institution is slowly becoming more sustainable. As procurement and guidelines tend to be run centrally, the Medical School has little autonomy in regards to supply procurement and buildings on campus. We suggest that the medical school partner with interested students to create sustainability guidelines for events hosted by the Medical School and transport options. 	

OVERALL SUMMARY

The above findings highlight that Glasgow Medical School greatly supports PH initiatives when initiated by students, for example, during SSCs, and provides a lot of support for students wishing to undertake such initiatives. This is highlighted by the number of students who are able to undertake self proposed SSCs related to Sustainability, and we are proud to award a “B” grade in the metric of “Support for Student Led Initiatives”. Furthermore, due to the recent actions of the institution, such as the development of the “Centre for Sustainable Solutions”, and the activities of student-led societies and campaigns, the “Interdisciplinary Research” and “Campus Sustainability” has greatly improved in recent years.

We’d also like to highlight the work of Dr Eric Walker and Dr Mike Townend in the continued development and great teaching of the “Global Health and Travel Medicine” SSC within the Medical School, and the work that Professor Jaime Toney is doing as the Director of the “Centre for Sustainable Solutions”, a huge addition to the University of Glasgow’s response to the climate crisis. We’d also like to mention all the student societies that are working both within and outside the remit of the University of Glasgow to highlight the urgency and necessity of increased teaching and sustainability measures at the University of Glasgow, who have triggered great change in recent years, and the faculty members who are dedicating time, energy, and resources to supporting them.

Yet despite the great work the Institution and Medical School are already doing, the nature and scale of the Climate Crisis itself demands that more systematic and far reaching changes are considered and implemented. The common ground between the initiatives mentioned above, is that many are taking place due to the actions of specific members of faculty, students, and advocacy groups, based on their own motivation. As impressive as this is, it is unlikely that the actions of a few individuals will be sufficient in creating the response needed in this context, especially related to developments in teaching on Planetary Health and Sustainability. Primarily, we suggest that the Medical School explicitly recognise the links between health and the climate crisis and work to include these in the core curriculum as far as possible. Despite the great content and scope of existing courses related to PH, these are elective, and as such, only a small proportion of students within each cohort will be able to learn about these topics. Some suggestions to do so are included below as a starting point. Upon distributing a survey to medical students at Glasgow Medical School regarding some of the questions asked in this report card, we found that many students are unaware of potential Planetary Health teaching at the Medical School. Therefore, we also suggest that existing resources related to PH could be highlighted more clearly to students.

Below, we have suggested a list of both short and long term measures that we believe can be implemented within Glasgow Medical School to increase teaching on Planetary Health/Climate Change and improve Sustainability. They are not exhaustive, and are flexible, and we look forward to future conversations with the Medical school on the development of these suggestions!

Short term/low effort measures:

- Join the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education
 - <https://www.planetaryhealthalliance.org/pha-members>
 - <https://www.publichealth.columbia.edu/research/global-consortium-climate-and-health-education/list-gcche-member-institutions>
- Develop a medical school specific webpage/moodle page helping students locate relevant planetary health supervisors for projects/SSCs, and where students can publicise research they've done on the topic during SSCs/intercal.*
- Develop a relationship with the “Centre for Sustainable Solutions” where members of the medical school faculty can take part in interdisciplinary research.
- Develop relationships and discourse with existing student societies on what curriculum additions they would like to see regarding Planetary Health and work together to implement these changes. (Many student societies e.g. Students for Global Health have hosted events related to these topics and have contacts with potential lecturers, so the workload will not be excessive).*
- Implement a “student liaison” on medical school decision making boards who will be aware of sustainability practises within the medical school and be able to communicate these to other students, and outline current sustainability “best practices” for the medical school.*
- Encourage environmentally friendly transportation options and provide guidelines for students at the Medical School.*
- Develop sustainability guidelines for events hosted at the Medical School.*
- Declare a Medical School Specific Climate Emergency (information in separate email).

Longer term:

- Develop teaching within the curriculum on Planetary Health and Climate Change, specifically:
 - Vocational Skills
 - on how to have conversations with patients about the health effects of climate change.
 - on how to take an environmental/exposure history from patients.
 - discussions on the role of a medical students/health practitioner in the climate crisis.
 - discussions on healthcare produced waste vs the obvious necessity of healthcare.
 - PBLs:
 - relevant environmental and health consequences or connections, e.g. related to infectious diseases (the Epidemiology section of DASPITE).
 - Public Health:
 - specifically mention the environmental and health consequences of the climate crisis during public health talks, where relevant. Examples include when the biopsychosocial model is mentioned.
 - Keeping People Healthy Block
 - provide at least one lecture on the links between climate change and health during this block.

- Develop an incentive program for faculty to develop new Planetary Health/ESH courses or incorporate such teaching into the existing courses.
- Incentivise students to do research/audits on Planetary Health/Climate Change with mutual benefit e.g. producing accessible educational materials for patients about climate and health impacts and/or environmental health exposures.*

*A key point we'd like to be noted when considering the above, is the large number of medical students within Glasgow Medical School who would be available to help develop the above teaching resources or have other ideas they'd like to implement. Therefore, although additions to the curriculum may seem labour intensive, these do not have to be developed by faculty alone. An asterisk next to the above suggestions indicates places we think medical students and staff can work collaboratively.

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance defines planetary health as “a field focused on characterizing the human health impacts of human-caused disruptions of Earth's natural systems.” This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many medical school’s institutional priorities do not reflect the urgency of this danger to human health.

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients’ health. This preparation is in the hands of the institutions providing our medical training. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of color, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among medical schools, we have created a Planetary Health Report Card that medical students internationally can use to grade and compare their home institutions on an annual basis. This medical-student-driven initiative aims to compare medical schools on the basis of discrete metrics in five main category areas: 1) planetary health curriculum, 2) interdisciplinary research in health and environment, 3) university support for student planetary health initiatives, and 4) community outreach centered on environmental health impacts 5) medical school campus sustainability.

Planetary Health Curriculum

Section Overview: This section evaluates the integration of relevant planetary health topics into the medical school curriculum. Today's medical students will be on the frontlines of tackling the health effects of climate change. Therefore, it is critical that medical students are trained to understand the health effects of climate change, as well as planetary health more broadly. Topics like the changing geography of vector-borne diseases, the health consequences of air pollution, environmental health inequities, and disaster response principles must be part of every medical school's core curriculum.

Curriculum: General

1. Did your medical school offer elective courses to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>The University of Glasgow Medical School offers 2 elective courses that include a lecture on planetary health: the “Global Health and Travel Medicine” student selected component (SSC) which can be undertaken during the Year 2 SSC block and the “Global Health” intercal option between year 3 & 4. Topics related to planetary health are covered in both, but they are not the main focus. Due to electives and student selected components being able to be chosen by students, there is the opportunity for students interested in Planetary Health/ESH to do something focused primarily on PH/ESH if they so wish.</i></p>	

Curriculum: Health Effects of Climate Change

2. Does your medical school curriculum address the relationship between extreme temperature health risks and climate change, as well as the socioeconomic/racial disparities in extreme heat exposure?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>This topic was covered during the “Global Health and Travel Medicine” Student Selected Component (SSC) in Y2, by Dr Eric Walker. Student Selected Components are Elective, and as such, not all medical students were taught about this topic; however, this topic was covered in some detail during the SSC.</i></p>	

3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>This topic was covered during the “Global Health and Travel Medicine” Student Selected Component (SSC) in Y2, by Dr Eric Walker. This topic was covered, but not in great detail.</i></p>	

4. Does your medical school curriculum address the impact of climate change on the changing patterns of infectious diseases?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>The impact of climate change on the changing patterns of infectious diseases is taught about during the “Global Health and Travel Medicine” SSC, with a lecture entitled “Pandemics, Epidemics and Outbreaks: looking at the history and with clinical examples” delivered by Dr Eric Walker. As the student selected component is elective, not all students are taught about the impact of climate change on the changing patterns of infectious diseases. However, this topic was covered in great detail during the SSC, with specific examples, and some students choosing to write their elective reports on the diseases covered.</i></p>	

5. Does your medical school curriculum address the cardiorespiratory health effects of climate	
---	--

change, including air pollution?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

This topic is covered during the “Global Health and Travel Medicine” SSC, though not in great detail. However, some students have chosen to write their elective report on this topic.

6. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

This topic is covered in the “Global Health and Travel Medicine” SSC, with a lecture on the “Psychological health issues relating to Travel lecture” delivered by Emley Pine in 2021.

7. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

This topic is covered in the “Global Health and Travel Medicine” SSC with a focus on different interpretations of “health” by different cultures and considering not just “patients” but the wishes and health of the general population. The concept of food security is addressed with a lecture entitled “An introduction to the concept of food security- e.g. production issues, the impact of travel, international trade of food products and waste” delivered by Dr Eric Walker. Another lecture, entitled “One Health’ and the relationships between human and animal health” delivered by Dr Dominic Mellor is also provided, linking human and animal health.

8. Does your medical school curriculum address the outsized impact of climate change on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, and older adults?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

This topic is covered in the “Global Health and Travel Medicine” SSC when discussing the effects of Climate Change and the “Global South”. A lecture was given regarding the “Indian experiences of the coronavirus pandemic” by Professor Thyagarajan (Chennai) in 2021.

9. Does your medical school curriculum address the unequal health impacts of climate change globally?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

This topic is covered during the “Global Health and Travel Medicine” SSC, especially when talking about the “Global South” and how different countries will be/are being more affected than the UK. A lecture was given entitled “Examples from Nepal of health issues affecting the local populations and travellers” by Dr Mike Townend, and “Indian experiences of the coronavirus pandemic” by Professor Thyagarajan (Chennai).

Curriculum: Environmental Health & the Effects of Anthropogenic Toxins on Human Health

10. Does your medical school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

This topic was covered within the “Keeping People Healthy Block” in Year 1 and briefly reiterated within the “Reproduction, Nephrology and Urology” block in Year 2. The first lecture was on “Teratogens and their effects” by Dr. Sharon Sneddon, and the second on “Male reproductive Endocrinology : Spermatogenesis and Endocrine Disruptors” by Dr Michelle Welsh. While the detrimental effects of environmental toxins was discussed, the unequal distribution of their exposure between and within populations was not.

11. Does your medical school curriculum address important human-caused environmental threats that are relevant to the university’s surrounding community?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

The human caused environmental threats are covered during the “Global Health and Travel Medicine” SSC with a lecture entitled “The History of Travel and its impact on our Environment and Climate” delivered by Dr Eric Walker; however, this is not linked to the threats relevant to Glasgow specifically.

12. Does your medical school curriculum address the unique climate and environmental health challenges that have impacted and are impacting Indigenous communities?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

This topic is covered during the “Global Health and Travel Medicine” SSC, with specific lectures from Dr Mike Townend on indigenous communities, and Nepal, with a lecture entitled “Examples from Nepal of health issues affecting the local populations and travellers”.

13. Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, and older adults?

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.

1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>This topic was not covered in the medical curriculum at the University of Glasgow. There is the option to undertake an SSC on the “Healthcare of Homeless Patients” that may address the impact of toxins on homeless populations.</i>	

Curriculum: Sustainability

14. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>This topic was not covered in the curriculum at the University of Glasgow. Teaching on nutrition tended to be based around the “eatwell plate” though, and animal protein was suggested as the last of the protein options, suggesting dairy first.</i>	

15. Does your medical school curriculum highlight the waste generated by the healthcare system and identify ways to advocate for and implement sustainable best practices in health care?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>The Global Health Intercalated degree programme offers a project researching sustainability within the medical school practices and is supervised by Dr Lyndsay Crawford. As intercalated degrees are optional, we consider this ‘elective’ coursework.</i>	

Curriculum: Clinical Applications

16. In training for patient encounters, does your medical school’s curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
<p><i>The medical school curriculum does not introduce any strategies to have conversations with patients about the health effects of climate change.</i></p>	

17. In training for patient encounters, does your medical school’s curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<p><i>The medical school curriculum teaches how to take a “social history” as part of learning how to take a patient’s history. This is covered in all years of the curriculum, and developed in practice over the latter part of 3rd year, and all of 4th and 5th year. The social history involves asking about the patient’s lifestyle, occupation and associated exposures, travel history, and other habits. Although it does not specifically introduce strategies for taking specific environmental history, this may be covered in a broad sense.</i></p>	

Curriculum: Administrative Support for Planetary Health

18. Is your medical school currently in the process of improving Education for Sustainable Healthcare (ESH)/planetary health education?	
4	Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.

2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.
<i>There are no plans to improve Education for Sustainable Healthcare/Planetary Health.</i>	

19. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum?	
6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).
0	There is minimal/no education for sustainable healthcare.
<i>Education for Sustainable Healthcare and Planetary Health are not included at all within the curriculum and are not integrated longitudinally.</i>	

20. Bonus: Does your medical school have a program that offers incentives for faculty/departments to develop new planetary health/ESH courses and/or incorporate planetary health/ESH into existing courses?	
1*	Yes, the medical school has an incentive program.
0	No, the medical school does not have an incentive program.
<i>The medical school has no incentive program for faculty/departments to develop new planetary health/ESH courses.</i>	

Section Total (15 out of 58)	15
-------------------------------------	-----------

Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Interdisciplinary Research

Section Overview: *This section evaluates the quality and quantity of interdisciplinary planetary health research at the medical school and broader institution. Interactions between health and the environment are complex and multifactorial. While climate change has been extensively studied from an environmental science perspective, planetary health is an emerging field. As leading health institutions with talented researchers and research resources, medical schools should fund research studying the health effects of climate change and anthropogenic environmental toxins. This obligation is particularly strong because the public and policymakers are more attentive to climate change when its implications for human health are emphasized.*

1. Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?	
4	Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health and healthcare sustainability.
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in a planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the School of Medicine who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.
<p><i>There are a few faculty members at the Glasgow School of Medicine who research planetary health, but it is not their primary research focus. These members of faculty are: Dr Camille Huser, Dr Andrea Williamson, & Dr Lynsey Yeoman.</i></p>	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?	
3	There is at least one dedicated department or institute for interdisciplinary planetary health research.
2	There is not currently a department or institute for interdisciplinary planetary health research, but there are plans to open one in the next 3 years.
1	There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research.
0	There is no dedicated department or institute.

The Centre for Sustainable Solutions was set up in Glasgow University in April 2020. The Centre is an interdisciplinary research hub that aims to develop links between Schools and Colleges at the University related to Climate Change, and build relationships within the University and the greater Glasgow community, focusing on the Sustainable Development Goals 11 (Sustainable Cities and Communities) and 13 (Climate Action). Since they were set up, the Centre has taken a key role within the University of Glasgow to provide spaces for staff and students to develop Climate Change related initiatives. As can be seen on their website, the Centre provides an overview of the research related to Climate Change, including One Health, going on at the University across various Colleges. As stated on their website, they “enable individuals, communities and organisations to act towards a sustainable future through education, research and partnership... and support interdisciplinary, cross-campus and cross-sectoral solutions to climate change.”

3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?

3	Yes, there is a process in which community members impacted by climate and environmental injustice have decision-making power in the climate + environmental research agenda.
2	Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.
1	No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
0	There is no process, and no efforts to create such a process.

There is no process for communities disproportionately impacted by climate change to give input/make decisions about the research agenda at the medical school.

4. Does your institution have a planetary health website, or a website centralizing various campus resources related to health and the environment?

3	There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.

The Centre for Sustainable Solutions website provides a very thorough overview of both University measures to tackle climate change (Glasgow Green: Climate Strategy for 2030 Carbon Neutrality), student led societies (Green New Deal, Extinction Rebellion, GUEST) and research being undertaken at various colleges. Although not directly linked to Health and the Environment, the resources provided are both varied and show how one can get involved with a number of projects. We'd especially like to point out the 'Spotlights' and updates on projects being undertaken by staff and students being highlighted on the website.

5. Has your institution recently hosted a conference or symposium on topics related to planetary health?

4	Yes, the institution has hosted more than one conference or symposium on topics related to planetary health in the past year, including at least one on climate change.
3	Yes, the institution has hosted one conference or symposium on topics related to planetary health in the past year.
2	Yes, the institution has hosted a conference on topics related to planetary health in the past three years.
1	The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the institution has not hosted a conference on topics related to planetary health in the past three years.

The Global Goals society holds an awareness week each year where they invite speakers regarding the SDGs and sustainable healthcare. This is done in collaboration with the U21 Health Science Group. This year, the conference includes topics on "Sustainability: Implementation in Global Health and Law", a talk entitled "Do something, Do more, Do it better". [1] As part of the U21 partnership, Glasgow uni hosts events related to the sustainable development goals and planetary health. The Centre for Sustainable Solutions hosted a series of Green Recovery Dialogues in Autumn 2020 that looked at how to consider environment-economics-well-being as part of the solution to the climate emergency. In particular they focused on green place-making through nature-based solutions that implicitly encompassed health benefits of green spaces. They also looked at rethinking consumption, which covered 'caring economies' and placing value on community and public health over GDP as a success measure. They had a follow-up roundtable discussion with senior leaders from around Glasgow that also encompassed the role of food and supply chains (particularly local/sustainable) in community/public health. [2]

6. Has your institution or medical school joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education?

2	Yes, the medical school has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education.
---	--

1	Yes, the institution has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education, but the medical school specifically has not.
0	No, the institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.
<i>The Institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.</i>	

Section Total (11 out of 19)	11
-------------------------------------	-----------

Community Outreach and Advocacy

Section Overview: *This section evaluates medical school engagement in community outreach and advocacy efforts associated with planetary health. Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of color. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.*

1. Does your medical school partner with community organizations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>The Centre for Sustainable Solutions recently launched the “Green Recovery Dialogues”, a series of conversations organised jointly by Glasgow City Council, Policy Scotland and the Centre. The Institution also partners with Glasgow City Council, is part of “Climate Ready Clyde”, an initiative run by 15 organisations planning how Glasgow can adapt to the effects of the climate crisis, and “Sustainable Glasgow”, that works to “improve quality of life in Glasgow, boost the economy and protect the environment... with partners from housing, community, business...”. Further links - [1] [2]</i></p>	

2. Does your medical school offer community-facing courses or events regarding planetary health?	
3	The medical school offers community-facing courses or events at least once every year.
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.

0	The medical school has not offered such community-facing courses or events.
<i>The medical school itself has not offered community facing events or courses regarding Planetary Health and it does not seem the Institution has either.</i>	

3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not regularly receive communications about planetary health or sustainable healthcare.
<i>Occasionally, events related to Planetary Health or Climate Change are included in communication updates. However, these are usually at the request of student-led societies (Students for Global Health, Global Goals Glasgow) who are publicising events that they have organised related to these topics. However, occasionally events such as the ‘U21 Sustainable Development Goals’ workshops are publicised via email. There is however, no regular communication on Planetary or Environmental Health.</i>	

4. Do hospitals affiliated with your medical school have accessible educational materials for patients about environmental health exposures?	
2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centers have accessible educational materials for patients.
<i>It does not seem that hospitals associated with Glasgow Medical School have accessible educational materials for patients about environmental health exposures. Information on this was quite difficult to find.</i>	

5. Do hospitals affiliated with your medical school have accessible educational materials for patients about climate change and health impacts?	
2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.

0	No affiliated hospitals have accessible educational materials for patients.
<p><i>It does not appear that hospitals associated with Glasgow Medical School have accessible educational materials for patients on climate change and health impacts. The Greater Glasgow and Clyde health board have a page about sustainability on their website, but their policy does not refer to patients.</i></p>	

Section Total (2 out of 12)	2
------------------------------------	----------

Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Support for Student-Led Planetary Health Initiatives

Section Overview: This section evaluates institutional support for student-led planetary health initiatives, such as funding, fellowships, programming, and student groups. Planetary health is a young field and, as young people facing a future deeply shaped by climate change, students are often some of the first at an institution to engage with it. Institutions should provide support for students to engage in sustainability quality improvement (QI) initiatives, discover mentors in their area of interest, and receive funding for planetary health projects.

1. Does your institution offer support for medical students interested in enacting a sustainability initiative?	
2	Yes, the institution offers grants available to medical students for students to enact sustainability initiatives.
1	The medical school encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available.
0	No, the institution does not offer opportunities or support for sustainability initiatives.
<p><i>The Medical School does support “Self Proposed Student Selected Components” during which students propose a topic they would like to research for the 5 week block. These are entirely organised by students and are self-funded - no funding is provided for any SP-SSC. When students propose sustainability related QI projects, resources are offered, and the SSC office is very helpful in finding relevant supervisors and contacts within Glasgow.</i></p>	

2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
3*	The institution offers an explicit paid fellowship for medical students to do research related to planetary health and/or sustainable healthcare.
2*	The institution offers paid research opportunities for students and planetary health/sustainable healthcare projects would be considered eligible.
1	There are unfunded research opportunities for students to perform research related to planetary health/sustainable healthcare.
0	There are no opportunities for students to receive funding for planetary health/sustainable healthcare research.
<p><i>The Self Proposed Student Selected Component allows students to research any topic they are interested in, as long as they find a relevant supervisor. As such, many students have undertaken research into planetary health and sustainable healthcare. However, these opportunities are not funded.</i></p>	

3. Does the medical school have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.

2	The medical school has a webpage with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a medical school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

There is no such website for medical students to find specific information related to planetary health/sustainable healthcare, or mentors within the medical school.

4. Does your medical school have funded, registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?

2	Yes, there is a funded student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support and/or funding.
0	No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.

There are a few student societies dedicated to Global health (students for Global Health, Global Goals), and a few societies related to Climate Change (Extinction Rebellion, GUEST, Green New Deal); however, there is no society that links the 2 and exclusively works on planetary health or sustainability in healthcare. However, these student societies do put on events on the topic, and do foster a culture of advocacy and many events are climate/health focused. The medical school is involved with the U21 SDG group which focuses on developing awareness and teaching around the Sustainable Development Goals. This group has official faculty support and some funding, although not directly linked to planetary health.

5. Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for sustainability best practices?

1	Yes, there is a student representative that serves on a medical school or institutional decision-making council.
0	No, there is no such student representative.
<p><i>There is no such specific role within the medical school. However, there is an “Environmental Officer” position on the “Students’ Representative Council”. The student who acts as this representative is allowed to sit on sustainability boards at the Institution, and is aware of the sustainability discussions taking place. They serve as a link between the University management and the students. Medical students are able to apply for this position.</i></p>	

6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	
1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students) that follow Leave No Trace principles.
<p><i>The GUEST team at the University (Glasgow University Environment and Sustainability Team) have a communal University garden which students can volunteer to grow local produce, and they provide workshops on sustainable food produce. Societies like Students for Global Health and Global Goals society provide some events on Planetary Health. Some sports clubs follow leave no trace principles e.g. surf club.</i></p>	

Section Total (9 out of 14)	9
------------------------------------	----------

Campus Sustainability

Section Overview: This section evaluates the support and engagement in sustainability initiatives by the medical school and/or institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavor, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinizing every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimizing environmental impact.

1. Does your medical school and/or institution have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<i>The University of Glasgow has an Office of Sustainability, with one member of staff dedicated to Campus sustainability. However, there is no such staff within the medical school.</i>	

2. Does your medical school and/or institution have a stated goal of carbon neutrality by 2050?	
4*	The medical school is already carbon neutral.
3	Yes, there is a stated carbon neutrality goal and the medical school has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal, but the medical school has not created a plan to reach that goal or the plan is inadequate.
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
0	There is no stated goal for reduction of CO2 emissions.
<i>The University of Glasgow has a carbon neutrality by 2030 <u>plan</u> . However, the Medical School does not have a stated plan of its own - rather, the carbon neutrality protocol is centrally run by the University, and the Colleges within the University do not come up with their own plan. As the</i>	

University's goal for carbon neutrality is 2030, it is expected that this will encompass the Medical School too.

3. Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilize renewable energy?

3*	Yes medical school buildings are 100% powered by renewable energy
2	Medical school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.

The medical school buildings source < 20% of energy from offsite/onsite renewable energy. The University's current energy project is EDF (who produce only 11% of their energy from renewables).

4. Are sustainable building practices utilized for new and old buildings on the medical school campus, with design and construction of new buildings and remodeling of old buildings conforming to a published rating system or sustainable building code/guideline?

3	Yes, sustainable building practices are utilized for new buildings on the medical school campus and the majority of old buildings have been retrofitted to be more sustainable.
2	Sustainable building practices are utilized for new buildings on the medical school campus, but most old buildings have not been retrofitted.
1	Sustainable building practices are inadequately or incompletely implemented for new buildings.
0	Sustainability is not considered in the construction of new buildings.

This is a process that may be run centrally by the University, instead of being within the remit of the medical school. The University states on their website that they will ensure that "new buildings are delivered to the highest standard, with designs based on established methods of sustainable construction and whole life costing principles, in order to minimise energy consumption and carbon emissions. All new build developments will be required to achieve a minimum BREEAM rating of "excellent" and EPC "A" rating." [1] As good as this sounds, there is no detailed description as to how this will be achieved. In addition, the investment into new buildings e.g. the new Learning and Teaching hub (£62 million) [2] and the Clarice Pears building (£50 million) whilst existing buildings and spaces are currently highly unused [3], and the lack of mention of retrofitting in the Sustainable Construction section of the Sustainability Policy, suggests that more can be done. The "Glasgow Green" document also suggests that future buildings will be designed to be ready for district-heating and use low carbon heat sources. [3]

[1] [University of Glasgow - MyGlasgow - Sustainability - Sustainable Construction](#)
 [2] [James McCune Smith Learning Hub - University of Glasgow Campus Development](#)
 [3] [Media_767316_smx.pdf \(gla.ac.uk\)](#)

5. Has the medical school implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?

2	Yes, the medical school has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.

The medical school has not implemented strategies to encourage and provide environmentally friendly transport options. The "Nextbike" initiative within Glasgow, that allows students to use public bikes for free for 30 minutes is not adequately advertised by the medical school. However, there are bike parking spaces outside the medical school campus. Upon receiving placement allocations, we are provided with a document detailing transport to the Hospital, which usually mentions the nearest train stations.

6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?

2	Yes, the medical school has both compost and recycling programs accessible to students and faculty.
1	The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0	There is no compost or recycling program at the medical school.

There are available and obvious recycling and food waste bins in the main café of the medical school. These are accessible to both students and faculty and are well positioned.

7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections?

3	Yes, the medical school has adequate sustainability requirements for food and beverages and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.
<p><i>Food is procured centrally by the University and as such, there seems to be no medical school specific guidelines. The University itself has 2 key actors in its food supply chain: Advanced Procurement for Universities & Colleges (APUC) and The University Catering Organisation (TUCO) - which has partnerships with Unilever, a company with low sustainability standards and the world's biggest buyer of palm oil. The University also uses Premier Food, known for unfair payment practises. The University's <u>sustainable food policy</u>, Jan 2019, suggests they aim to "purchase local/regional and seasonal food" and promote the "highest standard of environmental stewardship"; however, there seems to be no concrete way of achieving this. Outwith the remit of the central University procurement, it does not seem that the medical school is specifically attempting to increase food and beverage sustainability.</i></p>	

8. Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement?	
3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.
<p><i>The procurement process is run centrally by the University, not the Medical school. The University was awarded a "Gold CIPS Sustainable Procurement review", which was valid until 03/2019 and their website says they "actively apply principles of sustainable procurement." [1] Their sustainable procurement is measured using categories of "Corporate Social Responsibility, Fair Trade, Community Benefits, Living Wages, Supported businesses, Sustainability Code of Conduct, Antibribery & Corruption." These are measured and monitored using "EcoVadis SAS model, Environment, Labour & Human Rights, Ethics and Sustainable Procurement considerations." [2] Despite these statements, it is unclear how sustainable the actual procurement procedure is. "EcoVadis" is a company which provides sustainability ratings for companies in a universal scorecard. suppliers and ask unsustainable ones to</i></p>	

be better; however, there are no set guidelines about what to do if a supplier is bad, which questions its efficacy and what the University is doing when their supplier is considered unsustainable.

9. Are there sustainability requirements or guidelines for events hosted at the medical school?

2	Every event hosted at the medical school must abide by sustainability criteria.
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required.
0	There are no sustainability guidelines for medical school events.

There are no sustainability guidelines for events hosted at the Medical School.

10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?

2	Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.

There are no programs or initiatives to assist with making lab spaces more environmentally sustainable within the medical school at present. However, "Glasgow Green", the Institution's plan for Sustainability mentions "Improve the energy efficiency of laboratories through the S-labs programme and by acquiring Green Lab Certification through the Laboratory Efficiency Assessment Framework (LEAF)" as an aim, one that will hopefully extend to the Medical School's lab spaces in the near future.
[1]

11. Does your institution's endowment portfolio investments include fossil-fuel companies?

4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	No, the institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil-fuel companies.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.

0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.
---	--

The University of Glasgow decided to divest from fossil fuels in 2014, becoming the first University in Europe to do so, committing to a 10 year divestment period. Yet although the University led the way with its 2014 pledge, it has now been eclipsed by many other Universities due to the slow nature, and potential “greenwashing” of its divestment. As such, it is a “partially divested institution”.

Section Total (14 out of 29)	14
-------------------------------------	-----------

Grading

Section Overview

This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is an average of the section grades. Letter grades for each section and the institution overall were then assigned according to the table below.

Letter Grade	Percentage
A	80% - 100%
B	60% - 79%
C	40% - 59%
D	20% - 39%
F	0% - 19%

Planetary Health Grades for the Glasgow School of Medicine

The following table presents the individual section grades and overall institutional grade for the Glasgow School of Medicine on this medical-school-specific Planetary Health Report Card. The overall institutional grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics.

Section	Raw Score	Grade
Planetary Health Curriculum (30%)	15 / 58 = 25.9%	D
Interdisciplinary Research (17.5%)	11 / 19 = 57.9%	C+
Community Outreach and Advocacy (17.5%)	2 / 12 = 16.7%	F+
Support for Student-led Planetary Health Initiatives (17.5%)	9 / 14 = 64.3%	B-
Campus Sustainability (17.5%)	14 / 29 = 48.3%	C
Institutional Grade	40.5%	C-