



Planetary Health Report Card:

National University of Ireland, Galway



NUI Galway

2020-2021 Contributing Team:

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Summary of Findings

Curriculum	D
<ul style="list-style-type: none"> Planetary health (PH) topics are covered briefly and scattered across the core curriculum, but PH could be applied to many of the current learning objectives. Thus, our impression is that there is potential for increased PH teaching within the framework of the present curriculum. PH and how it relates to different aspects of medicine should be made more explicit in learning objectives, lectures, and tests. PH should be a priority theme and integrated longitudinally in the curriculum. The Social determinants of health is an example of a topic which is successfully integrated longitudinally. Expanding social determinants to also include ecological determinants of health could potentially be a way to adequately integrate planetary health throughout the core medical curriculum. 	
Interdisciplinary Research	B
<ul style="list-style-type: none"> The NUIG medical school should draw from existing centers such as the Centre for One Health and the growing list of academic staff conducting research in the area. The School of Medicine has an excellent undergraduate research summer program to which it would be feasible and desirable to include research opportunities in PH topics 	
Community Outreach and Advocacy	F
<ul style="list-style-type: none"> With a community drive to achieve 'National Park City' status for Galway, NUIG is in an exciting position to further develop their community outreach and advocacy program on PH. While the university has many great initiatives on community engagement and sustainability, the School of Medicine is not very visible, and almost absent, from these. To increase visibility, the School should engage more with current initiatives by adding the medical perspective to public discussions and events on PH. A medical school-specific website that gather PH news, events, resources and opportunities is also advisable. 	
Support for Student-Led Initiatives	C
<ul style="list-style-type: none"> Overall, there is support for student-led PH initiatives, with staff offering their time and advice. To further incentivize student initiatives and engage staff, providing funding, easily accessible information and networking opportunities is advisable. This could for instance be done through a medical school-specific website with contact information to staff mentors, resources, news and events relating to PH. 	
Sustainability	B
<ul style="list-style-type: none"> The Green lab initiative is an example of excellent sustainability efforts being made by NUIG. NUIG is impressively committed to ensuring university sustainability, with many excellent initiatives across the different disciplines. The School of Medicine would benefit from engaging more actively in the work already being done, but also contemplate the unique knowledge and skills medical professionals can offer in the intersection between medicine and sustainability. 	

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	<u>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.</u>
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>Score explanation: The NUIG version of electives would be the Special Study Modules (SSMs) in 1st and 4th year of medicine. In the SSMs, the students choose a topic to immerse themselves in for 2 hours/week for one semester – equal to 5 ECT. The SSMs vary each year. In spring 2020, a new SSM was offered to 1st years called “Nature and Forest Medicine”, in which students studied the clinical health benefits of nature and forest exposure. Examples of areas explored were the importance of nature in dealing with stress, and the cardiovascular benefits of forest walking.</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	<u>This topic was not covered.</u>

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.
<u>2</u>	<u>This topic was briefly covered in the core curriculum.</u>
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: In the module Global Health and Development, there is a lecture on WASH – water and sanitation and how it impacts health. The effects of extreme weather events like drought, harsh weather and flooding on human health is mentioned in a couple of slides. The learning outcome “Be aware of the difficulties faced by health services in resource poor settings and the challenges of strengthening health systems, ensuring adequate human resources for health and equitable access” and “recognize issues related to global health security and addressing the causes and control of public health risks from epidemic prone diseases and climate change” provides opportunity to discuss this in more detail.

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.
<u>2</u>	<u>This topic was briefly covered in the core curriculum.</u>
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: The impact of environmental change at local and global scales on vector density and distribution is mentioned in a lecture on vector borne disease but seem to emphasize more the effect of displacement and war rather than climate change.

5. Does your medical school curriculum address the cardiorespiratory health effects of climate change, including air pollution?

<u>3</u>	<u>This topic was explored in depth by the core curriculum.</u>
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>Score explanation: In the module GHD students are required to make a 6 min presentation on an assigned topic, of which one topic is the effect of air pollution on health. The video is shown for the class and questions asked to the presenting group. The video is 60% of grade in that module. The module MCQ tests everyone on the topic of pollution and health.</i></p>	

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	<u>This topic was not covered.</u>

7. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
3	<u>This topic was explored in depth by the core curriculum.</u>
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>Score explanation: The learning outcome: "Recognize issues related to global health security and addressing the causes and control of public health risks from epidemic prone diseases and climate change" in the GHD module deals with this. Food security, health, natural disasters, future food shortages and UN role in restoring and conserving natural resources is mentioned in one lecture dealing with hunger. In the module GHD students are required to make a 5-7 min presentation on an assigned topic, of which one topic is the effect of water pollution on health. The video is shown for the class and questions asked to the group. The video is 60% of grade in that module. The module MCQ tests everyone on the topic of pollution and health. There is also a separate lecture on the importance of clean water. The role of climate change and ecosystem health could be emphasized more, however.</i></p>	

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	<u>This topic was briefly covered in the core curriculum.</u>

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: The Learning Outcome “demonstrate awareness of social, economic, political, environmental and gender determinants of health disparities; recognize the impacts of globalization, poverty and widening socio-economic inequalities as determinants of health; understand the concepts of development, poverty, economic and social development, and the right to health” in the Global Health and Development module deals with inequalities in health in relation to social and environmental determinants of health. However, from the lectures given the impact of climate change on these determinants is not adequately emphasized.</i></p>	

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	<u>This topic was briefly covered in the core curriculum.</u>
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: One of the learning outcomes states that students should be able to “Recognise issues related to global health security and addressing the causes and control of public health risks from epidemic prone diseases and climate change”. The unequal effects of humanitarian crises and natural disasters is covered, but the role of climate change is only briefly mentioned.</i></p>	

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	<u>This topic was not covered.</u>

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	<u>This topic was not covered.</u>
<i>Score explanation: Human-caused environmental threats are briefly covered in a global context, but there is no learning outcome or lecture material that deal with this in a local context.</i>	

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	<u>This topic was not covered.</u>
<i>Score explanation: Potential to talk about the Traveller community in Ireland and how socioeconomic and environmental determinants of health may uniquely impact their health. Only the socioeconomic determinants are mentioned in relation to the Irish Travellers as of now.</i>	

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	<u>This topic was briefly covered in the core curriculum.</u>
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>Score explanation: While there is no learning outcome our lecture specifically focusing on this, the medical students are trained to consider this when learning to take a social history from their patients. Students are taught to always ask for work and living conditions in order to consider socioeconomic factors in relation to potential toxin exposure.</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	<u>This topic was not covered.</u>
<p><i>Score explanation: A plant-based diet was briefly mentioned in the “Metabolism, Nutrition and Health” module, but the focus is more on the potential diseases and nutritional deficits associated with vegetarian/vegan diets, rather than the benefits.</i></p>	

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	<u>This topic was not covered.</u>
<p><i>Score explanation: Potential for being covered in the Health System lectures in the Global Health and Development Module.</i></p>	

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	<u>No, there are not strategies introduced for having conversations with patients about climate change</u>
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17. In training for patient encounters, does your medical school’s curriculum introduce strategies for taking an environmental history or exposure history?

2	<u>Yes, the core curriculum includes strategies for taking an environmental history.</u>
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.

Score explanation: Students are trained to take a full social history, which includes asking patients about exposures to environmental and occupational hazards e.g., asbestos.

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	<u>No, there are no improvements to planetary health education in progress.</u>

Score explanation: NUIG and the College of Medicine, Nursing and Health Sciences have several sustainability goals and green initiatives, but they are all relating to the operation of the university or college. There are no current plans for improving the content of the curriculum in relation to planetary health education of medical students.

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	<u>Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).</u>

0	There is minimal/no education for sustainable healthcare.
<p><i>Score explanation: The sustainability of healthcare and some planetary health topics like pollution and clean water accessibility are the focus of certain lectures, especially in the Global Health and Development module. The social determinants of health are well integrated into the curriculum, and occasionally the lecturer will touch upon the environmental determinants of health as well, but there is still little mention or discussion on how climate change impacts these determinants and affects human health.</i></p>	

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	<u>No, the medical school does not have an incentive program.</u>

Section Total (21 out of 58)	21
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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	<u>Yes, there are faculty members at the School of Medicine who have a primary research focus in a planetary health or healthcare sustainability.</u>
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>Score explanation: The Centre for One Health at NUIG has several researchers involved with the School of Medicine, including:</i></p> <ul style="list-style-type: none"> <i>*Dr Liam Burke, tracking the antibiotic resistant strains and genes between humans, animals and the environment</i> <i>*Prof Dearbhaile Morris, personal professor of antimicrobial resistance and One Health, and Head of the Discipline of Bacteriology at the School of Medicine.</i> <i>*Prof Ines Thiele, molecular systems physiology, how diet influences human health</i> <i>*Prof Máire Connolly, Emerging infectious diseases, surveillance, pandemic preparedness, humanitarian emergencies, health security</i> <i>*Prof Martin Cormican, antibiotic resistance and foodborne infections</i> <i>*Dr Sinead Duane, Antimicrobial Resistance, Social Marketing, Social Change, Systems Dynamics, Health and the Environment, Stakeholder Engagement</i> <i>*Dr Kelly Fitzhenry, Antimicrobial resistance, waterborne pathogens, environmental microbiology, wastewater disinfection</i> 	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?

3	<u>There is at least one dedicated department or institute for interdisciplinary planetary health research.</u>
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.
<p><i>Score explanation: The Centre for One Health (COH), a trans-disciplinary research centre, is an integral part of the Ryan Institute at NUIG and brings together experts in human health, animal health, microbiology, infectious diseases, agriculture, environmental policy, social marketing and behavioural change from within and outside NUIG. The COH places sustaining human health, animal health and environmental health at the centre of public policy through teaching, research and advocacy. The COH hosts several small events each year and an annual conference.</i></p>	

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	<u>There is no process, and no efforts to create such a process.</u>

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	<u>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.</u>
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.

Score explanation: <http://www.nuigalway.ie/sustainability/> is the most comprehensive sustainability website of NUIG. There are many good resources and information on the page, but it inadequately covers the topics of planetary health and effects of climate change on human health. There is no information on planetary health leaders, little information of events and no funding opportunities for medical students.

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

4	<u>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.</u>
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.

Score explanation: NUIG hosted the 24th Annual Health Promotion Conference online on Thursday, 18 June, 2020. The theme was [‘Promoting Health and Wellbeing: Creating a more equitable and sustainable environment’](#). The conference was hosted by the Health Promotion Research Centre at NUIG in collaboration with the World Health Organisation; Department of Health; the Health Service Executive; and the Association of Health Promotion Ireland. This virtual conference aimed to promote exchange of ideas on research, policy and practice, as well as to act as a networking platform to promote future development of collaborative partnerships in the field of health, wellbeing and sustainability.

The Centre for One Health hosts an annual conference, in 2020 they hosted a symposium on antimicrobial resistance on Nov 20th.

<http://www.nuigalway.ie/ryaninstitute/researchcentresandclusters/coh/cohconferencesevents>

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	<u>No, the institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.</u>
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Section Total (12 out of 19)	12
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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	<u>The institution partners with community organizations, but the medical school is not part of that partnership.</u>
0	No, there is no such meaningful community partnership.
<p><i>Score explanation: NUIG partners with the Terryland Forest Park projejct. The aim is to develop Terryland Forest, Ireland's largest urban forest into a major Outdoor Laboratory and Outdoor Classroom for the benefit of schools and third level research. However, there is little information on other partnerships with community organizations to promote planetary and environmental health.</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	<u>The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.</u>
0	The medical school has not offered such community-facing courses or events.
<p><i>Score explanation: NUIG hosted a conference with the title: Climate Change and Health in 2017 open to the general public, but the School of Medicine was not involved.</i> https://globalhealth.ie/climatehealthirl2017/</p>	

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	<u>Students do not regularly receive communications about planetary health or sustainable healthcare.</u>

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	<u>No affiliated medical centers have accessible educational materials for patients.</u>

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	<u>No affiliated hospitals have accessible educational materials for patients.</u>

Section Total (2 out of 12)	2
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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.

NUIG hosts an annual Student Sustainability Summit, a one-hour workshop for students to collaborate on Sustainability Strategy and showcase student voices for sustainability.

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	<u>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.</u>
0	No, the institution does not offer opportunities or support for sustainability initiatives.
<p><i>Score explanation: The Planetary Health Teaching in Ireland student-led initiative has received support from the School of Medicine administration and key persons. MedSoc is arranging a series of online talks, in which one of the topics is Environment and Health with Irish Doctors for The Environment. The School encourages this initiative. Up to 2019 a Student Sustainability Leadership Award was granted to 4 students. The award consisted of an 8-week scholarship (June-August) to help implement the Sustainability Strategy on campus. This grant was not, however, open to medical students.</i></p> <p>http://www.nuigalway.ie/media/sustainability/Student-Sustainability-Internships-2019.pdf</p>	

2. Does your institution offer opportunities 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	<u>There are unfunded research opportunities for students to perform research related to planetary health/sustainable healthcare.</u>
0	There are no opportunities for students to receive funding for planetary health/sustainable healthcare research.
<p><i>Score explanation: The Planetary Health Teaching in Ireland study has received support from the School of Medicine, but no funding is available. Also note: The aforementioned study is an initiative started and run completely by the medical students themselves. There are no pre-existing opportunities for research directly related to planetary health that medical students can apply to or sign up for.</i></p>	

There is, however, an undergraduate research program which matches students with research groups and helps them apply for funding. This program could easily include planetary health- related research topics.

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	<u>There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.</u>

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	<u>No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.</u>

Score explanation: There are student organizations focusing on environment and sustainability, but none that focuses on planetary health or sustainability in healthcare specifically.

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	<u>Yes, there is a student representative that serves on a medical school or institutional decision-making council.</u>
0	No, there is no such student representative.

Score explanation: The Student Union president is a member of the University Sustainable Advisory Board, which provides strategic oversight of NUI Galway's commitment to sustainability as detailed in the Strategic Plan, Sustainability Strategy and Sustainable Development Goal Accord.
<http://www.nuigalway.ie/sustainability/aboutus/>

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	<u>Panels, speaker series, or similar events related to planetary health that have students as an intended audience.</u>
1	<u>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.</u>
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	<u>Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kavaking, or other outings for students) that follow Leave No Trace principles.</u>

Score explanation:

b. The NUIG Ryan Institute, which comprises the One Health Centre, has regular events which are aimed at students. E.g.

<https://twitter.com/RyanInstitute/status/1356543056443564033>

c. The Galway branch of Irish Doctors for the Environment will be speaking for medical students at NUIG in a conversation series organized by the Medical Society.

f. The NUIG mountaineering society, open to medical students, is affiliated with mountaineering Ireland, which has a LNT principle. The "Forest and Nature Medicine" Special Study Module also focused on leaving no trace.

Section Total (6 out of 14)

6

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	<u>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.</u>
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
<p><i>Score explanation: NUIG has a sustainability committee that meets on a regular basis. In addition, in September 2019, the University appointed a Community and University Sustainability Officer (CUSO), but no specific staff member is responsible for the medical school.</i></p>	

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	<u>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.</u>
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.
<p><i>Score explanation: The NUIG Sustainability Strategy for 2021-2025 has a stated goal of achieving carbon neutrality by 2030. The strategy outlines the following plan for achieving carbon neutrality: (1) measure and report carbon footprint by 2021 and (2) develop a framework by 2023 for the university</i></p>	

to move ambitiously towards carbon neutrality by 2030. The College of Medicine, Nursing and Health Sciences fall under the institutional goal, but there is no specific plan from the college or the School of Medicine on how to reach this goal.

<http://www.nuigalway.ie/media/sustainability/files/Final-Sustainability-Strategy-17-11-2020.pdf>

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	<u>Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.</u>

Score explanation: Solar PV installed on the Human Biology Building, supplies 10% of the building's energy usage. The Sustainability Strategy for 2021-2025 has the goal that 20% of electricity will come from renewable sources by 2025. There are extensive work being done to replace fossil fuels with energy from combined heat and power plant, solar thermal and solar photovoltaic panels, air to water heat pumps, the introduction of biomass boilers and the implementation of LED high efficient lighting systems across campus. NUIG has also managed to cut 40% of their energy usage since 2006, making it a leading institution for energy efficiency and usage in Ireland.

<http://www.nuigalway.ie/media/sustainability/files/Sustainability-report-2020.V2.pdf>

<http://www.nuigalway.ie/media/sustainability/files/Final-Sustainability-Strategy-17-11-2020.pdf>

<https://pvgeneration.ie/case-study-human-biology-building-nuig/>

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	<u>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.</u>
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.

Score explanation: The Human Biology Building, which was built in 2017, is the main building for medical students in their preclinical years. The building was built with sustainability and energy

efficiency in mind and received an BREEAM excellence rating. The university is ISO 50001:2011 certified and committed to retrofit old buildings to become more energy efficient and sustainable. Most buildings have already undergone some form of alteration, and many more are planned. The university also states the following in the NUI Galway Strategic Plan – Shared Vision, Shaped by Values (p16): “We will embrace proven new technologies to increase our buildings’ energy efficiency and Building Energy Rating, by integrating sustainability in all Buildings and Estates planning and development under the auspices of the national Climate Action Plan.”

<https://www.bdp.com/en/projects/m-o/national-university-of-ireland-galway---human-biology-building/>
<http://www.nuigalway.ie/media/sustainability/files/Energy-Review-Report--October-2020.pdf>
<https://www.nuigalway.ie/media/strategicplanning/NUI-Galway-Strategy-2020-2025---Shared-Vision,-Shaped-by-Values.pdf>

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	<u>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.</u>
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.

Score explanation: Most students walk, cycle or take the bus to campus. The university has a shuttle bus system for transporting students across campus, implemented secure cycling storage options, and created walking time maps that show the approximate walking time to campus from different areas in Galway city. NUIG has Travel Plan project and several accessible online resources to encourage active travel and public transport use and discourage car use. Every year the Student Union and the Medical Society also arrange walkathons and competitions to encourage walking to campus.

http://www.nuigalway.ie/media/buildingsoffice/files/maps/nui_galway_walk_times_map.pdf
<https://www.nuigalway.ie/buildings/service-helpdesk/get-to-around/travel-plan/>
<https://www.nuigalway.ie/buildings/service-helpdesk/get-to-around/>

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	<u>The medical school has either recycling or compost programs accessible to students and faculty, but not both.</u>
0	There is no compost or recycling program at the medical school.

Score explanation: Recycling bins for paper and food waste are available throughout the university campus to all students and staffs. Recycling stations for glass and aluminum are also available on the South Campus. Organic bins are currently confined to canteen/food service outlets only. Initiatives such as “bin the bin”, “NUIG waste league table” and “Zero Waste to Landfill” aim to increase recycling. The University aims to divert food waste into compost and increase composting opportunities for students and staff in their Sustainability Strategy 2021-2025, but it is not yet a reality.
<https://www.nuigalway.ie/buildings/service-helpdesk/recycling/>
<http://www.nuigalway.ie/media/sustainability/files/Final-Sustainability-Strategy-17-11-2020.pdf>

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	<u>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.</u>
0	There are no sustainability guidelines for food and beverages.

Score explanation: There is an optional Sustainability Event Checklist which includes several points on local, climate friendly, Fairtrade, vegetarian and seasonal food. The campus caterers have implemented a recycling system to conserve natural resources. The school has increased the number of water fountains on campus to reduce plastic bottle waste. The 18/19 sustainability report highlights that the five main catering contractors placed a strong emphasis on fresh, local, organic and sustainable, in food offerings. The NUIG Sustainability Strategy 2021-2025 aims to “increase the availability of healthy, sustainable (for example, vegan, vegetarian, organic), locally sourced, affordable and fairly traded food options in campus outlets”. The College of Medicine, Nursing and Health Sciences has not included any points about food sustainability in their Sustainability Strategy.
<http://www.nuigalway.ie/media/sustainability/Sustainable-Event-Checklist.pdf>
<http://www.nuigalway.ie/catering-services/ourinitiatives/>
<http://www.nuigalway.ie/media/sustainability/files/NUI-Galway-Sustainability-Report.pdf>
<http://www.nuigalway.ie/media/sustainability/files/Final-Sustainability-Strategy-17-11-2020.pdf>

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	<u>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.</u>

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>Score explanation: The NUIG Procurement Policy states that they align with the principles of “Green Procurement” as outlined by the “Guidelines for Public Procurement” set out by the Irish Office of Government Procurement. The NUIG Policy also states that the university “will incorporate the use of Green Procurement practices in our processes and procedures, in an effort to reduce our environmental impact in conjunction with the Community University Sustainability Programme (CUSP).” There are no concrete sustainability requirements stated in the NUIG policy document. The School of Medicine is involved in efforts to increase sustainability procurement through both the University and the College of Medicine, Nursing and Health Sciences Sustainability Strategy 2021-2025, particularly when it comes to lab resources procurement.</i></p> <p>https://www.nuigalway.ie/procurement-contracts/stepbystepguide/nuigalwayprocurementpolicy/ http://www.nuigalway.ie/media/sustainability/files/Final-Sustainability-Strategy-17-11-2020.pdf http://www.epa.ie/pubs/reports/other/corporate/olg/GreenPublicProcurementfinalwebv2.pdf</p>	

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	<u>The medical school strongly recommends or incentivizes sustainability measures, but they are not required.</u>
0	There are no sustainability guidelines for medical school events.
<p><i>Score explanation: NUIG Sustainable Event Policy. The NUI Galway Sustainable Event Checklist is the first step in the Sustainable Event Policy development process and the checklist is intended as a simplified tool to assist event organizers to organize sustainable events.</i></p> <p>http://www.nuigalway.ie/media/sustainability/Sustainable-Event-Checklist.pdf</p>	

10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	<u>Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.</u>
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.
<p><i>Score explanation: CÚRAM, the SFI Research Centre for Medical Devices based at NUI Galway being the first in Europe to be awarded Green Lab Certification. The NUIG Sustainability Strategy 2021-</i></p>	

2025 aim to have all labs on campus certified as 'green' by 2025 with several labs already having received 'Green Lab Certifications' including the Lambe institute at University Hospital Galway.
<http://www.nuigalway.ie/sustainability/projectsresources/thegreenlabsinitiative/>
<http://www.nuigalway.ie/media/sustainability/files/Final-Sustainability-Strategy-17-11-2020.pdf>

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

4	<u>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.</u>
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.

Score explanation: NUIG committed to divest from fossil fuels by the end of 2017 and is now recognised as being fully divested. NUIG is also committed to invest in renewable energy sources and reinvest energy cost savings into new sustainability technologies and engagement with building occupants as agents for making the university buildings more energy efficient, as evident by the Sustainability Strategy 2021-2025.

<https://gofossilfree.org/europe/nui-galway-commits-to-fossil-fuel-divestment/>

<http://www.nuigalway.ie/media/sustainability/files/Final-Sustainability-Strategy-17-11-2020.pdf>

Section Total (20 out of 29)

20

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

NUIG has been awarded the Green Flag Campus Award for its work on creating a more sustainable and environmentally friendly campus.

<https://www.nuigalway.ie/about-us/news-and-events/news-archive/2019/april/nui-galway-awarded-green-flag-campus-award.html>

The NUIG Sustainability Strategy 2021-2025

<http://www.nuigalway.ie/media/sustainability/files/Final-Sustainability-Strategy-17-11-2020.pdf>

The NUIG Sustainability Report 2020

<http://www.nuigalway.ie/media/sustainability/files/Sustainability-report-2020.V2.pdf>

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 a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. 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 National University of Ireland Galway School of Medicine

The following table presents the individual section grades and overall institutional grade for the _ National University of Ireland Galway School of Medicine on this medical-school-specific Planetary Health Report Card.

Section	Raw Score	Grade
Planetary Health Curriculum (30%)	21 / 58 = 36%	D +
Interdisciplinary Research (17.5%)	12 / 19 = 63 %	B -
Community Outreach and Advocacy (17.5%)	2 / 12 = 17%	F +
Support for Student-led Planetary Health Initiatives (17.5%)	6 / 14 = 43%	C -
Campus Sustainability (17.5%)	20 / 29 = 69 %	B +
Institutional Grade	44%	C -