Planetary Health Report Card (Medicine):

University of Nottingham

2024-2025 Contributing Team:

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Summary of Findings

Overall Grade	B

Curriculum	C

- The curriculum includes some planetary health topics but lacks depth and integration across multiple years. Planetary health is primarily addressed in standalone lectures rather than being woven throughout the curriculum. Topics such as extreme weather events, air pollution, and climate change's effects on health are briefly covered, often in single lecture slides. While some sustainability topics are covered, such as hospital dietary choices and healthcare carbon footprints, there is little discussion on over-medicalisation, sustainable surgical practices, and waste reduction in clinical settings. There is a faculty member overseeing planetary health education, and minor improvements to planetary health education are currently in progress.

- **Recommendations:** Firstly, the medical school needs to enhance Integration of Planetary Health Topics by moving beyond isolated lectures and embed planetary health principles throughout different years of the curriculum. Moreover, climate change-related health risks can be revisited in multiple teaching formats (e.g., lectures, case studies, OSCEs, and placements).

Interdisciplinary Research	A-

- The University of Nottingham is actively engaged in interdisciplinary research on planetary health, with strong contributions from various research beacons and initiatives, such as Future Food and Green Chemicals, which focus on sustainability and environmental resilience. However, there is a need for a more centralised platform for planetary health research and a greater inclusion of disproportionately impacted communities in the research decision-making process.

- **Recommendations**:
  The University should establish a dedicated planetary health research website and increase its involvement in sustainable healthcare research, with potential steps including joining the Planetary Health Alliance and/or the Global Consortium.

Community Outreach and Advocacy	C+

- The University of Nottingham showed some community outreach relating to planetary health. Our university had launched the People-Planet-Health programme, collaborated on research among community partners and external organizations, and engaged in a range of science outreach and public engagement projects. However, students at the University of Nottingham only sometimes receive communications about planetary health and sustainable healthcare. In addition, the university and its affiliated medical centres lack courses relating to planetary health and/or sustainable healthcare for post-graduate providers and accessible educational materials for patients.

- **Recommendations**: Community outreach activities mostly come from the University as a whole instead of from the Medical school. We would recommend the medical school offers more opportunities for community outreach, such as organizing talks to educate the public, and possibly launching a continuing medical education website for postgraduates.

Support for Student-Led Initiatives	A-

- The University of Nottingham medical school demonstrates moderate support for student-led planetary health initiatives. Strengths include student funding for sustainability projects, some research opportunities, active student organisations, and the opportunity for co-curricular programs.

- **Recommendations:** Establishing a dedicated webpage for planetary health initiatives, expanding formal research opportunities, appointing a student representative for sustainability in decision-making, and enhancing engagement with local environmental justice communities. Additionally, increasing funding and integration of sustainability QI projects into the curriculum would further strengthen student involvement. Implementing these measures can significantly enhance the institution's support for planetary health initiatives and improve its overall score.

Campus Sustainability	B+

- The University of Nottingham demonstrates strong sustainability efforts across several areas, particularly in waste management, sustainable food policies, and procurement practices. The Medical School aligns with these initiatives, implementing recycling programs, reducing single-use plastics, and incorporating sustainable criteria into food services and supply procurement.

- **Recommendations:** While the university has general sustainability guidelines for events, clearer, enforceable policies specific to the Medical School's events could be beneficial. Additionally, further initiatives to enhance sustainable transport options, such as incentives for low-carbon commuting, could strengthen the university's environmental impact.

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as "a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth." This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, 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 health professional 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 health professional training. It is imperative that we hold our institutions accountable for educating health professional 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 colour, 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 health professional schools, we have created a Planetary Health Report Card that students internationally can use to grade and compare their institutions on an annual basis. This student-driven initiative aims to compare health professional schools nationally and internationally 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, 4) community outreach centred on environmental health impacts, and 5) school campus sustainability.

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as "the health of human civilisation and the state of the natural systems on which it depends." For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of health professional education.Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.

- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.

- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:

    1. Describe how the environment and human health interact at different levels.
    2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
    3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.

- **Medical School/Department vs. Institution:** When "Medical school" is specified in the report card, this only refers to curriculum and resources offered by the School/department of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to the university more broadly including all of its campuses. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is

specifically targeted for medical students, can meet this metric.

- **Environmental history (Metric #19 in Curriculum Section):** This is a series of questions students are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution. Please be as specific as possible when providing evidence for this metric.

- **Elective:** The word "elective" refers to an optional course or lecture series that a student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.

- **Core Curriculum:** This refers to taught material that is delivered to the entire cohort of students in one year.

- **Clerkship / Outreach:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations, outreach or placements. This is a relatively short (approximately 4-8 weeks) period of study and patient-centred clinical experience that takes place as part of the undergraduate programme.

- **Clinical rotation:** This is a term used to refer to placements that students go on (e.g., ophthalmology, surgery, cardiology).

- **Physiotherapy vs Physical Therapy:** For the purposes of this report card these terms are considered interchangeable. However, physiotherapy will be used primarily.

- **Community organisations:** For most institutions, there are existing groups that are not directly affiliated with the university and exist as a product of what the community the institution exists in cares about or needs. These specific community organisations relevant to this report include those that are focused around some aspect of climate and health preservation. These community organisations can include but are not limited to local mutual aid initiatives, underserved-resource distribution groups, clean-up and nature conservation groups, community gardeners, and other environmental-related organisations. If your institution does not have access to local volunteerships with community groups, please report any community organisations your institution or school has collaborated with.

- **Climate justice:** The idea that certain population groups and geographical locations which are disproportionately more impacted by climate change are already economically and socially disadvantaged. This double vulnerability sits alongside pre-existing social justice concerns and should therefore shift policy and practice to mitigate the inequitable effects of the climate crisis.

- **Extractivism:** The removal of natural resources typically in large quantities. Within anthropology this term is often used in the context of colonialism to refer to the

historic seizing of natural resources, a practice which has developed business models tied to ecological degradation and loss of biodiversity.

- **Global South:** Nations that often have less economic and industrial development and are typically in the southern hemisphere. These nations have been found to be disproportionately impacted by the climate crisis.

- **Low socioeconomic status (SES):** An individual or geographical area that across a variety of socioeconomic factors (e.g., income, education, race/ethnicity) is considered vulnerable. This vulnerability has been correlated to more adverse health outcomes often as a consequence of encountering more barriers in accessing and receiving healthcare.

- **Low and Middle-Income Countries (LMIC):** Countries that have lower degrees of economic affluence.

- **Anthropogenic:** Created through human activity

- **Marginalized communities:** Groups excluded from mainstream economic, educational, social, and/or cultural experiences due to race, gender identity, sexual orientation, age, physical ability, language, and/or immigration status (Sevelius et al., 2020).

Other considerations:

- If there are more than one "tracks" at your institution with two different curricula (for example, Harvard Medical School has a Pathways and HST curriculum track), you can choose to fill out a report card for each track, or fill out just one report card and average the scores received by each track in cases where the scores are different (see the 2021 Harvard or Oxford report cards as examples). Where possible please indicate the proportion of students that are on each track.

Completed in 2022 a Literature Review by Metric is available for the 2022 medicine report card metrics. We are in the process of updating this review and making it more applicable to all the disciplines. However the review serves as a rough collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

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 and other environmental changes. Therefore, it is critical that medical students are trained to understand the health effects of these changes, as well as planetary health issues and principles 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

1.1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
Yes, the medical school has offered **more than one** elective whose primary focus is ESH/planetary health in the past year. (3 points)	
Yes, the medical school has offered **one** elective whose primary focus is ESH/planetary health in the past year. (2 points)	
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. (1 points)	
No, the medical school has **not** offered any electives on planetary health or electives that include ESH/planetary health topics in the past year. (0 points)	
Score Assigned:	2
In fourth year, the Medical School offers an elective called 'Climate Action' delivered by Dr. Helena Clements with the aims of: - *To gain an understanding of the work of the Climate Action within the trust and across Nottingham's integrated care system* - *To work within the MDT to gain knowledge about how climate action and education relates to healthcare* - *To help create training materials and educational resources for medical students and healthcare workers*	

Curriculum: Health Effects of Climate Change

1.2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?
This topic was explored in depth by the core curriculum. (3 points)
This topic was briefly covered in the core curriculum. (2 points)
This topic was covered in elective coursework. (1 point)

This topic was not covered. (0 points)	
Score Assigned:	2
In second year, Professor Ilze Bogdanovica gave a lecture titled 'Environment, occupation and health' which explored the direct health impacts of climate change and extreme heat, as well as a brief mention in a lecture by Professor Michael Randall titled 'Sustainability', the same year.	

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
In second year, Professor Micheal Randall gave a lecture titled 'Sustainability' which contained one slide which touched on the effects of weather events on individual health. *In addition to that, in the lecture, 'Environment, Occupation, and Health' by Professor Ilze Bogdanovica also in year 2, there is a single slide that identifies extreme weather events, such as flooding and heatwaves, as consequences of climate change.*	

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
In second year, Professor Micheal Randall gave a lecture titled 'Sustainability' which contained one slide which touched on the effects of climate change on changes in vector ecology including malaria, dengue, West Nile Fever etc.. Moreover, Professor Ilze Bogdanovica gave a lecture titled 'Environment, occupation and health' which also lightly touched on the subject.	

1.5. Does your <u>medical school</u> curriculum address the respiratory health effects of climate change and air pollution?

This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Professor Ilze Bogdanovica explores the link between air pollution and health impacts. He talks about specific impacts of air pollution on health and which groups are impacted. Moreover, in year 1, there is a lecture by Professor Michael Randall called 'Respiratory Pharmacology: Asthma', which briefly discusses the negative environmental effects of the brown inhaler.	

1.6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
In year 2, in the lecture titled 'Sustainability', Professor Michael Randall briefly touches upon the effects of climate change including extreme heat on cardiovascular health, with Professor Ilze Bogdanovica also utilises the same infographic in the lecture titled 'Environment, occupation and health'.	

1.7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
The University of Nottingham Medical School curriculum does not currently discuss this topic.	

1.8. Does your <u>medical school</u> curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
In year 2, the lecture titled 'Environment, occupation and health' by Prof. Ilze Bogdanovica mentions that climate change can cause an increase in malnutrition related to negative effects in food supply. The same lecture also talks about the indirect effects of climate change on health which include food and water insecurity.	

1.9. Does your <u>medical school</u> curriculum address the outsized impact of climate change on marginalised populations such as those with low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults?	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
In year 2, in the lecture titled 'Sustainability' by Professor Michael Randall, the impact of climate change and air pollution is discussed briefly with regards to BME groups disproportionately being affected by air pollution (asthma higher in black vs white patients). Also in year 2, in 'Environment, occupation and health', Professor Ilze Bogdanovica discusses how greater health harms are more likely to be observed in communities in areas of higher pollution, such as close to busy roads which often will also be low-income communities and how there is clear evidence that people with a low income are affected by air pollution in a number of different ways as they are likely to have existing medical conditions, they also live in areas with poorer outdoor and indoor environments. *However, there is no specific mention of women, indigenous communities, children, homeless people and older adults.*	

1.10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?
This topic was explored **in depth** by the **core** curriculum.
This topic was **briefly** covered in the **core** curriculum.

This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
In year 2 in 'Environment, occupation and health', Professor Ilze Bogdanovica mentions how climate change has a greater effect on certain regions using the specific example of Malaria in Africa. The lecturer mentioned that Malaria is transmitted by mosquitoes and malaria kills over 400,000 people every year – mainly African children under five years old and how this number could get worse with further climate change.	

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

1.11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
The University of Nottingham Medical School curriculum does not currently discuss this topic.	

1.12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
The University of Nottingham Medical School curriculum does not currently discuss this topic.	

1.13. To what extent does your <u>medical school</u> emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?

This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
The University of Nottingham Medical School curriculum does not currently discuss this topic.	

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
The University of Nottingham Medical School curriculum does not currently discuss this topic.	

Curriculum: Sustainability

1.15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
In Year 2, in ITM week 2 under the lecture 'Sustainability' by Professor Michael Randall, the University of Nottingham Medical School discusses the impacts of hospital diets and our own dietary carbon footprints on both the environment and our health.	

1.16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	3
In year 2, in the lecture titled 'Sustainability', Professor Michael Randall discusses the impacts of inhalers, prescribing and anaesthetic gases, as well as general carbon footprints for the hospital. Professor Ilze Bogdanovica in the lecture 'Supporting high quality health systems' also explores the carbon footprint of various areas of the healthcare system.	

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	**Score**
The health **and** environmental **co-benefits** of **avoiding** over-medicalisation, over-investigation and/or over-treatment (2 points)	0
The environmental impact of **pharmaceuticals** and over-prescribing as a cause of climate health harm. Alternatively teaching on **deprescribing** where possible and its environmental and health co-benefits would fulfil this metric. (2 points) .	2
The health **and** environmental **co-benefits** of **non-pharmaceutical management** of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK. (1 point)	0
Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	0
The impact of **anaesthetic** gases on the healthcare carbon footprint and ways to reduce anaestheisa's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions. (1 point)	1
The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers. (1 point)	1
Waste production within healthcare **clinics** and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting) (1 point)	1
In Professor Michael Randall's lecture titled 'Sustainability' in year 2 - he explores the importance of sustainable prescribing and impact of over-medicalisation on climate change. *Although social prescribing has been discussed in various lectures, the environmental benefits of it have not been explored.*	

In Professor Michael Randall's lecture titled 'Sustainability' - he talks about the impact of anaesthetic gases on the climate and explores ways to reduce its impacts. In the same lecture, he also talks about the benefits of dry powdered inhalers over metered dose inhalers. *In the above lecture, Professor Michael Randall discussed strategies to minimise daily waste in the hospital via pharmaceutical changes e.g to encourage patients to return inhalers to local pharmacy for disposal, £300 million of NHS prescribed medicines are wasted each year (preventable and non-preventable) so de-prescribing is crucial, IV to PO switch of antimicrobials, using PO paracetamol and favouring IV bolus over IV infusion.*

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum. (2 points)	
Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework. (1 points)	
No, there are **no** strategies introduced for having conversations with patients about climate change. (0 points)	
Score Assigned:	0
The University of Nottingham Medical School curriculum does not currently discuss this topic.	

1.19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?	
Yes, the **core** curriculum includes strategies for taking an environmental history. (2 points)	
Only **elective** coursework includes strategies for taking an environmental history. (1 point)	
No, the curriculum does **not** include strategies for taking an environmental history. (0 points)	
Score Assigned:	2
Students are trained to take a full history, which includes asking about environmental exposure (e.g. through travel, home environment, etc). However, it is not explicitly stated to be an environmental history. However, this is often specifically with regards to tropical medicine, DVTs or respiratory conditions.	

Curriculum: Administrative Support for Planetary Health

1.20. Is your <u>medical school</u> currently in the process of implementing or improving Education

for Sustainable Healthcare (ESH)/planetary health education?	
Yes, the medical school is currently in the process of making **major** improvements to ESH/planetary health education. (4 points)	
Yes, the medical school is currently in the process of making **minor** improvements to ESH/planetary health education. (2 points)	
No, there are **no** improvements to planetary health education in progress. (0 points)	
Score Assigned:	2
There are major changes planned to be implemented from 2026 (there is going to be a revised curriculum for the whole of undergraduate medicine and one of the longitudinal themes will be planetary health), however, it is difficult to add lectures on sustainability into the current curriculum therefore we can only say there is minor change occurring at the moment.	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum?	
Planetary health/ESH topics are **well integrated** into the core medical school curriculum. (6 points)	
Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum. (4 points)	
Planetary health/ESH is not integrated and is primarily addressed in **(a) standalone lecture(s).** (2 points)	
There is **minimal/no** education for sustainable healthcare. (0 points)	
Score Assigned:	2
As can be seen throughout this section's scoring, only 2/3 standalone lectures discussed the topic of sustainability, and that too not covering all aspects of it: ● *In year 2, in ITM week 2 under the lecture 'Sustainability' by Professor Michael Randall, the University of Nottingham Medical School discusses the impacts of hospital diets, anaesthetic gases and over prescription on both the environment and our health.* ● *Also in year 2, Professor Ilze Bogdanovica in the public health lecture 'Supporting high quality health systems' also explores the carbon footprint of various areas of the healthcare system and their impacts on global warming as well as impacting on hospital admissions.* ● *In another lecture for the same public health series in year 2, 'Environment, occupation and health', Professor Ilze Bogdanovica mentions how climate change has a greater effect on certain regions and demographics, however this is not explored in depth as it discusses more about environmental global differences rather than more local disparities.*	

1.22. Does your medical school employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?

Yes, the **medical school** has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)	
No, the **medical school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)	
Score Assigned:	1
Louise Potter is the main overseer of curriculum changes in the context of planetary health inclusion.	

Section Total (36 out of 72)	**50%**

Interdisciplinary Research

Section Overview: ***This section evaluates the quality and quantity of interdisciplinary planetary health research at the 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, institutions 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 emphasised.*

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your institution?	
Yes, there are faculty members at the **institution** who have a **primary** research focus in planetary health **or** sustainable healthcare/vetcare. (3 points)	
Yes, there are individual faculty members at the **institution** who are conducting research **related** to planetary health or healthcare sustainability, OR are part of a national/international sustainability working group, but it is not their primary research focus. (2 points)	
There are sustainability researchers at the **institution**, but not specifically associated with healthcare/vetcare. (1 point)	
No, there are **no** planetary health and/or sustainability researchers at the **institution** at this time. (0 points)	
Score Assigned:	3
University of Nottingham is actively engaged in a broad spectrum of sustainability research across various disciplines beyond the School of Medicine. The institution has identified six Beacons of Excellence which tackle global challenges. While not all are directly focused on planetary health, several initiatives contribute to sustainable healthcare and environmental resilience. Beyond these beacons, the university actively supports sustainability research through Creative Energy Homes, the Energy Institute, the Centre for the Environment, and sustainable agriculture initiatives. During COP26 and COP27, the university showcased its contributions to environmental policy and innovation. *Furthermore, the School of Life Sciences at the university emphasises research in areas such as ecology, evolutionary biology, and environmental health, which are integral to planetary health studies. SHAping Sustainable Futures Hub is an online research hub aiming to demonstrate how social science research at the University of Nottingham is helping to shape a more sustainable future.*	

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

There is **at least one** dedicated department or institute for interdisciplinary planetary health research. (3 points)
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. (2 points)
There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research. (1 points)
There is **no** dedicated department or institute. (0 points)

Score Assigned:	3

The zero carbon cluster in engineering is an established institute for planetary health in engineering, propulsion etc. It has secured more than £70 million of public and industry co-investment for further research into decarbonising future transport for high-growth industries including aerospace, automotive, marine, rail, off-highway and energy.

2.3. 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 institution?
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. (3 points)
Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda. (2 points)
No, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda. (1 points)
There is **no** process, and **no** efforts to create such a process. (0 points)

Score Assigned:	2

The university has engaged with affected communities in specific research projects related to climate change and environmental sustainability, like the Future Food beacon. The rights lab has been instrumental in policy changes nationally and internationally surrounding climate change, planetary health and modern slavery. They work heavily with those who are disadvantaged by climate change and from the global south.

2.4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?

There is an **easy-to-use, adequately comprehensive** website that **centralises** 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. (3 points)
There is a website that **attempts to centralise** various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive. (2 points)
The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment. (1 point)
There is **no** website. (0 points)

Score Assigned:	1

While the university's Sustainability page - highlights its commitment to sustainability through research, teaching, and campus activities, it does not specifically focus on planetary health or provide a centralized repository of related research activities.

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health?
Yes, the **institution** has hosted at least one conference or symposium on topics related to planetary health in the past year. (4 points)
Yes, the **institution** has hosted at least one conference or symposium on topics related to sustainable healthcare/vetcare in the past year. (3 points)
Yes, the **institution** has hosted a conference on topics related to planetary health / sustainable healthcare/vetcare in the past three years. (2 points)
The **institution** has not hosted any conferences directly, but they have provided financial support for a local planetary health event. (1 point)
No, the **institution** has not hosted a conference on topics related to planetary health in the past three years. (0 points)

Score Assigned:	4

On 14th-15th June 2024, the University of Nottingham hosted the "2024 SDG Student Workshop," organized by the U21 Health Sciences Sustainable Development Goals Initiative Group and the university's EcoHealthcare Society. The two-day workshop focused on the health science theme of data-driven healthcare with a sustainability and planetary health focus. The students benefited from in-person interaction and were hugely engaged in discussing cases and developing their own cases for dissemination amongst the group.

Additionally, in March 2024, the university held a "Sustainability Showcase" at the Theatre Royal Concert Hall. This event highlighted research from across the university addressing sustainability and climate change through interactive displays and installations. The showcase demonstrated the institution's commitment to tackling environmental issues and promoting interdisciplinary collaboration.

2.6. Is your <u>institution</u> a member of a national or international planetary health or ESH/ESV organisation?	
Yes, the institution is a member of a national or international planetary health or ESH/ESV organisation. (1 points)	
No, the institution is **not** a member of such an organisation. (0 points)	
Score Assigned:	1
The University of Nottingham is a member of a planetary health organisation called U21 - this international network of research-intensive universities collaborates to enhance global education and research, with a focus on sustainable development and environmental health. The University of Nottingham's membership facilitates interdisciplinary research and initiatives in planetary health.	

Section Total (14 out of 17)	**82%**

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 colour. 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.*

3.1. Does your institution partner with community organisations to promote planetary health?	
Yes, the **institution** meaningfully partners with **multiple** community organisations to promote planetary and environmental health. (3 points)	
Yes, the institution meaningfully partners with one community organisation to promote planetary and environmental health. (2 points)	
The **institution** does not partner with community organisations, but has participated in community focused events relating to planetary health. (1 point)	
No, there is **no** such meaningful community partnership. (0 points)	
Score Assigned:	3

Yes, our university did partner with community organizations to promote planetary health.

- *The People-Planet-Health programme, launched in July 2020, aims to give voice and visibility to these groups and their work while encouraging them to share their actions, thereby supporting capacity-building within and between grassroots initiatives. People-Planet-Health, initiated by the first and second authors, is supported by Lucerne University of Applied Sciences and Arts and conducted in partnership between Lucerne University, the University of Nottingham, and the International Union of Health Promotion and Education.*

- *The School of Geography (Environment, Health and Society) carried out research that collaborates with community partners and external organizations, including Nottingham City Council, Defra, and the Environment Agency. Research encompasses socio-environmental influences on health, health-related behaviours (for example, vaping), health inequities, historical geographies of health, spatial dynamics of infectious disease, and the relationships between climate change and health. Another focus includes research on environmental stewardship and behaviours, climate justice, policy dynamics and policy capacity, navigating just transitions and transformative change, managing and adapting to climate risks and Blue-Green futures, and making space for nature. There is also extensive research on rural land use and culture, agri-food systems, colonialism in rural Britain, diverse knowledge and worldviews, and environmental governance and risk management.*

3.2. Does your institution offer community-facing courses or events regarding planetary health?	
The **institution** offers community-facing courses or events at least once every year. (3 points)	
The **institution** offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. (2 points)	
The **institution** has promoted community-facing courses or events, but was not involved in planning those courses or events. (1 point)	
The **institution/medical school** have not offered such community-facing courses or events. (0 points)	
Score Assigned:	2
Yes, our institute offers community-facing courses or events regarding planetary health - *Nottingham Trent University and the University of Nottingham are inviting people from the community to apply for a fully-funded 10-week research placement. The 2025 Citizen Scientist Research Projects have been developed in collaboration with local community organisations regarding planetary health are entitled:* *1. Sustainable resources and Wellbeing: Scoping the holistic benefits of community leaf gathering in Nottingham* *2. Beyond Green: Community Participation towards Resilient Urban Nature* - *At the School of Life Sciences, our students are involved in a range of science outreach and public engagement projects, including Pint of Science and University of the Third Age (U3A)*	

3.3. Does your institution have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)	
Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. (1 point)	
Students **do not** receive communications about planetary health or sustainable healthcare. (0 points)	
Score Assigned:	1
Yes, students at the University of Nottingham sometimes receive email communications about planetary health and sustainable healthcare. This is through the biweekly newsletter run by the medical student experience team to relay news of any sustainability events happening in the medical school. From the central university team, emails are sent out if there are any particular sustainability initiatives.	

3.4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?	
Yes, the **institution** or **main affiliated hospital trust** offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health. (2 points)	
Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers. (1 point)	
There are **no** such accessible courses for post-graduate providers. (0 points)	
Score Assigned:	2

The University of Nottingham offers postgraduate courses that incorporate elements of planetary health and sustainable healthcare, notably:

- ***Global Environmental Sustainability MSc**: This interdisciplinary program examines environmental, social, economic, and political factors shaping sustainable development. University of Nottingham*
- ***Climate Change, Environment and Society MSc**: This course focuses on managing climate challenges at a societal level, blending social and physical aspects of climate change with organizational and project management skills. University of Nottingham*

However, these programs are primarily designed for full-time students and may not be specifically tailored for practicing healthcare professionals seeking to update their knowledge in planetary health and sustainable healthcare.

3.5. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?	
Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated medical centres have accessible educational materials for patients. (0 points)	
Score Assigned:	0
No affiliated medical centres have accessible educational materials for patients.	

3.6. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?

Yes, the **medical school** or **<u>all</u> affiliated hospitals** have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	0
No, there isn't a readily apparent centralized collection of patient-facing materials on the health impacts of climate change at Nottingham affiliated teaching hospitals.	

Section Total (8 out of 14)	**57%**

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.*

4.1. Does your institution offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)	
The **institution** encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate. (1 point)	
No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	1
The Environment Initiative Fund, by the university's Environmental Sustainable Committee, provides funding to students who wish to pursue a specific environmental initiative. The budget for this fund is £100,000 for all granted projects. Previous examples include 'Replacing water condensers in labs with waterless condensers' and 'Establishing a medicinal garden at Royal Derby Hospital Centre'. There is no requirement to participate in this.	

4.2. Does your institution offer opportunities for students to do research related to planetary health and/or sustainable healthcare/vetcare?	
The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare/vetcare research. (2 points)	
There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these **require student initiative** to seek these out and carry them out in their spare time. (1 point)	
There are **no opportunities** for students to engage in planetary health/sustainable healthcare research. (0 points)	
Score Assigned:	2
All medical students are required to do the BMedSci during third year although opportunities for sustainability related projects are variable each year. Besides, there is a single elective Student Selected Module (SSM) in fourth year.	

4.3. Does the institution have a web page where students can find specific information related to planetary health and/or sustainable healthcare/vetcare activities and mentors within the institution? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
The institution has a web page with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)	
There is an institution web page that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information. (1 point)	
There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)	
Score Assigned:	2
The University of Nottingham has a comprehensive webpage dedicated to sustainability. It includes information on policy and performance, research, methods of getting involved, funding opportunities and an extremely detailed "Frequently Asked Questions"section. The University of Nottingham also has a dedicated sustainability Facebook, Instagram,Twitter, blog and newsletter. Although there is limited information with regards to healthcare, the university as a whole does have a lot of resources and is making action towards a more sustainable institution.	

4.4. Does your institution have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
Yes, there is a student organisation **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare. (2 points)	
Yes, there is a student organisation at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.** (1 point)	
No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)	
Score Assigned:	2
Yes, there is a student organisation - Uon EcoHealthcare Society. This society focuses on planetary health within medicine and allied professions. They promote a culture of planetary healthcare engagement through inviting guest speakers, including current health care professionals with an interest in sustainability, to deliver speeches such as 'How can we make medicines more sustainable?', 'Data Driven Health Care and Sustainability' and 'Medical Interested in Blue Health'. These speeches were part of the U21 UN Sustainable Development Goal Conference in which attendees also took part in discussions and workshops. *There is also a wider student organisation called Students for Global Health Nottingham. They focus more broadly on global and public health but do cover sustainability and climate justice under this umbrella.*	

There are also several institution-wide student groups such as the UoN Sustainability Society and UoN Conservation and Nature Society.

4.5. Is there a student liaison representing sustainability interests who serves on a department or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	0
Although there are student liaisons (eg. UoN Student Union's Environmental and Social Justice officer), their efforts are more guided towards student and campus engagement with sustainability rather than curriculum reform or institution-level decision making. There is no medical school representative. However, there are currently plans to implement this.	

4.6. 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)	**Score**
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.	0
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 organise hiking, backpacking, kayaking, or other outings for students)	1

Several student-led societies organise for bulb planting and tree planting events on the university campus and locally, such as those organised by such as the UoN Sustainability Society and UoN Conservation and Nature Society.

The University's Environment and Social Justice Network organised a variety of talks with umbrella of 'Climate Crisis Talks' in 2022.

The EcoHealthcare Society invited current healthcare professionals with an interest in sustainability to deliver speeches such as 'How can we make medicines more sustainable?', 'Data Driven Health Care and Sustainability' and 'Medical Interested in Blue Health'. These speeches were part of the U21 UN Sustainable Development Goal Conference in which attendees also took part in discussions and workshops.

Whilst there is a lot of exciting activity around changing practices and actionable steps to a sustainable future, there appears to be limited opportunity to hear from local environmental justice members.

Creative projects related to planetary health are mostly in the form of photography events such as the 'Ponder on Life' photo exhibition. This was a collaboration between the university's sustainability committee, local city council and the university's Biological Photography & Imaging Group. There are also some photography competitions organised by student-led societies.

In terms of local volunteering opportunities, several student-led societies organise for bulb planting and tree planting events on the university campus and locally. There are also litter pick-up events to support the university's Hedgehog Friendly Campus campaign.

There are several wilderness and outdoors programs, particularly for hiking - including ones organised by the Wilderness Medicine society.

Section Total (12 out of 15)	**80%**

ADDITIONAL SUSTAINABLE INITIATIVES:

The university's Green Rewards initiative encourages students to engage with sustainable practices, such as calculating carbon footprint and making a plastic pledge, with prize draws and vouchers as incentive.

Amongst university accommodation halls, competitions are held to promote sustainable activities such as least energy consumption and #WasteNott for least amount of food waste.

Campus Sustainability

Section Overview: ***This section evaluates the support and engagement in sustainability initiatives by the 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 endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising 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 minimising environmental impact.*

5.1. Does your institution have an Office of Sustainability?	
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. (3 points)	
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 hospital sustainability. (2 points)	
There are **no salaried sustainability staff,** but there is a sustainability task force or committee. (1 point)	
There are **no** staff members **or** task force responsible for overseeing campus sustainability. (0 points)	
Score Assigned:	3
The university has three teams dedicated to sustainability - Energy and carbon management, Environment and grounds, with full-time staff in each team. The university also has a dedicated head of sustainability and a director of environmental sustainability roles. Regarding hospital sustainability, the Nottingham University Hospitals NHS Trust employs dedicated staff focused on environmental and sustainability efforts. There is a dedicated Environmental and Sustainability Officer and a Green Plan Champion at the Trust Board level to oversee sustainability initiatives.	

5.2. How ambitious is your institution's plan to reduce its own carbon footprint?	
The institution has a **written and approved plan** to achieve carbon neutrality by **2030** (5 points)	
The institution has a written and approved plan to achieve carbon neutrality by 2040 (3 points)	
The institution has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate** (1 point)	
The institution/medical school does **not** meet any of the requirements listed above (0 points)	
Score Assigned:	3

The University's plan is informed by the establishment of an evidenced science-based carbon reduction target - has the ambition – to be net zero by 2040 and zero carbon by 2050, with an interim target for 2030.

5.3. Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?

Yes, institution buildings are **100%** powered by renewable energy. (3 points)

Institution buildings source **>80%** of energy needs from off-site and/or on-site renewable energy. (2 points)

Institution buildings source **>20%** of energy needs from off-site and/or on-site renewable energy. (1 point)

Institution buildings source **<20%** of energy needs from off-site and/or on-site renewable energy. (0 points)

Score Assigned:	1

The University of Nottingham has demonstrated a strong commitment to sustainability and renewable energy across its campuses. Notably, the Jubilee Campus, which houses the School of Education, the School of Computer Science, and the Nottingham University Business School, incorporates several environmental innovations. These include living roofs that aid in storm drainage and promote biodiversity, as well as solar panels to harness renewable energy.

A prominent example is the GlaxoSmithKline Carbon Neutral Laboratory for Sustainable Chemistry, located on the Jubilee Campus. This facility is constructed from natural materials and is designed to be carbon-neutral, featuring a green roof and solar panels covering 45% of the roof area, providing up to 230.9 kW of power.

While these initiatives highlight significant strides in renewable energy usage, comprehensive data indicating that 100% of the university's teaching buildings are powered entirely by renewable energy is not readily available, however sources such as People & Planet suggest the percentage may be around 33%. Therefore, based on the provided criteria, it is reasonable to conclude that the institution's buildings source more than 20% but less than 80% of their energy needs from renewable sources, corresponding to a score of 1 point.

5.4. Are sustainable building practices utilised for new and old buildings on the institution's campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?

Yes, sustainable building practices are utilised for new buildings on the institution's campus and the **majority** of old buildings **have been retrofitted** to be more sustainable. (3 points)

Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have **not been retrofitted.** (2 points)	
Sustainable building practices are **inadequately or incompletely** implemented for new buildings. (1 point)	
Sustainability is **not considered** in the construction of new buildings. (0 points)	
Score Assigned:	3

The University aims for a minimum standard of BREEAM Excellent for all new capital projects, ensuring sustainability is integrated throughout all stages of building development, from design through to post-occupancy.For existing buildings, the University has implemented significant carbon reduction projects. Starting in 2015, initiatives at the Medical School have targeted building fabric improvements, ventilation control, and the replacement of central chilled water systems. These efforts have led to substantial reductions in greenhouse gas emissions and annual savings of £560,000. Additionally, in 2014, a high-efficiency rooftop cooling unit was installed at the Medical School to provide more efficient and less carbon-intensive cooling. This project was expected to save 140 tonnes of carbon dioxide annually.

5.5. Has the <u>institution</u> implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?	
Yes, the institution 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-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default. (2 points)	
The institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised. (1 point)	
The institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options. (0 points)	
Score Assigned:	2

The university offers a semester-long bike hire program for students and staff, making cycling an accessible option for commuting. Regular free bike maintenance sessions, known as "Dr Bike," are available to ensure bicycles remain in good working condition. Significant investments have been made in cycling infrastructure across campuses, including the creation of cycle paths and walking routes, pedestrianisation of areas, and the development of active trails. Moreover, the university provides a free inter-campus bus service for staff and students, connecting University Park Campus with Sutton Bonington Campus, Royal Derby Hospital Centre, King's Meadow Campus, and Jubilee Campus. The university has also installed electric vehicle charging points across five campuses to support the use of low-emission vehicles.

5.6. Does your institution have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?	
Yes, the institution has **both** compost **and** recycling programs accessible to students and faculty. (2 points)	
The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)	
There is **no** compost or recycling program at the medical school. (0 points)	
Score Assigned:	2
The university maintains a recycling scheme across its campuses, including the Medical School, with clearly marked bins for materials such as aluminum, paper, plastic, and glass. Additionally, biodegradable waste from campus cafes is collected in designated green bins and sent for composting. The university also composts approximately 500 tonnes of garden waste annually, reusing it within the campus grounds as soil improver. In the 2022/23 academic year, the university processed 96 tonnes of food waste through a local anaerobic digester, converting it into energy. Furthermore, the university has partnered with Terracycle to recycle used pens and stationery items, with collection bins available in all main libraries across University Park. This initiative has successfully diverted 30 kilograms of pens from landfill so far.	

5.7. Does the institution apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
Yes, the institution has a**dequate s**ustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability. (3 points)	
There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution **is engaged** in efforts to increase food and beverage sustainability. (2 points)	
There are sustainability guidelines for food and beverages, but they are **insufficient or optional.** The institution is **not** engaged in efforts to increase food and beverage sustainability. (1 point)	
There are **no** sustainability guidelines for food and beverages. (0 points)	
Score Assigned:	2
The university supports local and smaller suppliers, ensuring they are not discriminated against in the procurement process and that all procurements represent value for money. The university collaborates with suppliers, contractors, and partners to minimize environmental and social impacts associated with the products and services provided. The university is committed to reducing waste in its catering operations, including initiatives to minimize packaging and promote recycling.	

5.8. Does the institution apply sustainability criteria when making decisions about supply procurement?	
Yes, the institution has **adequate** sustainability requirements for supply procurement **and** is **engaged** in efforts to increase sustainability of procurement. (3 points)	
There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **engaged** in efforts to increase sustainability of procurement. (2 points)	
There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **not engaged** in efforts to increase sustainability of procurement. (1 point)	
There are **no** sustainability guidelines for supply procurement. (0 points)	
Score Assigned:	3
The university's Sustainable Procurement Policy outlines acting in an environmentally responsible manner and contributing to advancing the environmental agenda. It also involves collaborating with suppliers and contractors to ensure that goods and services are procured sustainably and meet the university's environmental standards. Contracts for computers specify low power demand equipment, consider whole life costing, and provide for the return of packaging and recycling of old equipment. For office furniture, all suppliers are certified by the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC).	

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?	
Every event hosted at the institution **must** abide by sustainability criteria. (2 points)	
The institution **strongly recommends or incentivizes** sustainability measures, but they are **not required.** (1 point)	
There are **no** sustainability guidelines for institution events. (0 points)	
Score Assigned:	1
While there are no specific guidelines exclusively for the Medical School, the university's broader policies apply to all departments. The university's Environmental Sustainability Policy encourages event organizers to minimize waste by utilising eco-friendly materials, reducing printed materials, and adopting digital alternatives. Organizers are also urged to prioritize energy efficiency and responsible transportation in event planning and execution. Additionally, the university's Sustainable Events and Activities Implementation Plan 2024/2025 outlines various initiatives aimed at promoting sustainability in campus events.	

5.10. Does your institution have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
Yes, the institution has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable. (2 points)	
There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)	
There are **no** efforts at the institution to make lab spaces more sustainable. (0 points)	
Score Assigned:	2
Yes, the University of Nottingham has implemented several programs and initiatives to enhance the environmental sustainability of its laboratory spaces. There is the Sustainable Laboratories Program - recognizing that laboratories are among the most resource-intensive areas on campus, the university's Sustainability Team has developed a program aimed at reducing their environmental impact. This initiative encourages all lab users to adopt practices that promote sustainability - UoN Sustainable Labs. Moreover, the Sustainable Laboratory Good Practice Guidelines supports the Sustainable Laboratories Program. This is a comprehensive guide detailing best practices for creating more sustainable lab environments. This guide serves as a resource for lab users to implement environmentally friendly practices in their daily operations. The GlaxoSmithKline Carbon Neutral Laboratory for Sustainable Chemistry, located on the Jubilee Campus exemplifies the university's commitment to sustainable research environments. The laboratory is constructed from natural materials and operates on renewable energy sources, serving as a model for future lab designs.	

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
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. (4 points)	
The institution is **entirely divested** from fossil fuels. (3 points)	
The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments. (2 points)	
The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organised advocacy** for divestment. (1 point)	
Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that. (0 points)	
Score Assigned:	3
In April 2018, the University of Nottingham announced its commitment to divest its £50 million endowment fund from fossil fuel investments. At that time, approximately 6% of the fund was	

invested in the oil and gas sector. By April 2019, the university had fulfilled its commitment, fully divesting from fossil fuel companies.

Section Total (25 out of 32)	**78%**

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(36/72) x 100 = 50%	C
Interdisciplinary Research (17.5%)	(14/17) x 100 = 82%	A-
Community Outreach and Advocacy (17.5%)	(8/14) x 100 = 57%	C+
Support for Student-led Planetary Health Initiatives (17.5%)	(12/15) x 100= 80%	A-
Campus Sustainability (17.5%)	(25/32) x 100 = 78%	B+
Institutional Grade	**67%**	**B**

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which University of Nottingham has participated in the Planetary Health Report Card initiative.