



Planetary Health Report Card (Medicine):

***The University of North Carolina at
Chapel Hill School of Medicine***



2024-2025 Contributing Team:

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Land Acknowledgement (adapted from the Land Acknowledgement of the UNC Gillings School of Global Public Health): UNC School of Medicine's main campus is located on the Chapel Hill campus of the University of North Carolina. Long before the campus existed, there were teachers, students, elders and youth inhabiting the spaces we enjoy today, trading knowledge and goods with one another.

North Carolina is home to the Occaneechi, Lumbee, Coharie, Haliwa-Saponi, Eastern Band of Cherokee, Meherrin, Tuscarora, Sappony and Waccamaw-Siouan Nations, along with many other indigenous peoples living in both tribal homeland and urban settings. In fact, North Carolina is the state with the largest Indigenous population east of the Mississippi River. We acknowledge and give thanks to the First Peoples of this land and their descendants.

It is also important to acknowledge and honor the crucial role of enslaved people in the early days of this campus. Enslaved people were sold as escheated property to help fund the establishment of UNC, and the labor of enslaved people built UNC-Chapel Hill and undergirded its operations until Emancipation. We acknowledge and give thanks to the enslaved people who built UNC and their descendants.

May we build upon the memories and goodwill of all who walked and labored here before us with truth, integrity and honor.

Summary of Findings

Overall Grade	C
Curriculum	F+
- Since the implementation of the redesigned UNC School of Medicine curriculum, few topics related to planetary health and sustainable practice have been incorporated into the core curriculum and elective coursework. Recommendations: There is ample opportunity to incorporate new planetary health content and information previously included in the core curriculum. The school could expand coverage of these topics whenever possible in Medical Science, Social Health Science, and Patient-Centered Care courses and develop additional pertinent electives for the Planetary Health Scholarly Concentration.	
Interdisciplinary Research	A
- Interdisciplinary research related to planetary health continues to flourish at UNC. Projects and multi-tier collaboration are fostered by an Institute for the Environment, Center for Resilient Communities and Environment, centralised website, and several dedicated summits and conferences. Recommendations: The School of Medicine should follow the lead of its student-run organization, Climate Leadership & Environmental Action Network (CLEAN), and become a member of a national or international planetary health or ESH organization.	
Community Outreach and Advocacy	B-
- UNC meaningfully partners with multiple community organizations and actively educates the community about current environmental science and sustainability. The UNC Health Sciences Library has also begun offering community-facing modules on the health effects of climate change. Recommendations: The School of Medicine could offer community-facing courses or events in partnership with the Center for Public Engagement with Science, create a list of planetary health materials that qualify as CME credits, and add health educational materials about environmental exposures to the library website.	
Support for Student-Led Initiatives	B
- The School of Medicine provides plentiful opportunities for interested students with initiative to design QI projects and research related to planetary health and sustainable healthcare, and the student-run organization CLEAN is supported by a faculty advisor. UNC has also offered numerous co-curricular planetary health programs and initiatives. Recommendations: UNC SOM could explicitly encourage and fund students to coordinate planetary health-related QI projects and research. A student liaison from CLEAN could also be included on decision-making councils to advocate for curriculum reform, in particular.	
Campus Sustainability	C
- UNC has pledged to achieve carbon neutrality by 2040, despite continuing to invest in fossil-fuel companies. The institution has also employed sustainable practices for new construction (including the new medical education building) and lab spaces, increased accessibility to composting and recycling programs, and encourages use of public transport. Recommendations: UNC's Office of Sustainability could designate a staff member for efforts at UNC Health. On campus, consider retrofitting old buildings and creating and requiring sustainability guidelines for food and beverages, supply procurement, and hosted events. Divestment from fossil-fuel companies and sourcing more energy from renewable resources are strongly encouraged.	

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 schools’ 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, and 4) community outreach centred on environmental health impacts 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 <u>medical school</u> 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:	0
<i>Score explanation: There is not currently an elective offered at the UNC School of Medicine that exclusively focuses on Sustainable Healthcare or Planetary Health. Students may apply to join the new Planetary Health Scholarly Concentration, which will reportedly include the elective "Planetary Health and Human Medicine." Additionally, there are sessions incorporated into the Social Health Systems (SHS) curriculum that engage with related topics such as "Policy and Environmental Health" and "Migration and Health."</i>	

Curriculum: Health Effects of Climate Change

1.2. Does your <u>medical school</u> 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:	0
<i>Score explanation: At this time, the effects of extreme heat on health risks and their relationship to climate change is not explicitly discussed in the UNC School of Medicine curriculum. Though previously discussed during a Social Health Systems session on the Impact of Jails and Prisons on Health Outcomes, the redesigned curriculum has not been adjusted to include a discussion of extreme heat.</i>	

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:	0
<i>Score explanation: Since the redesign of the UNC School of Medicine curriculum that was first implemented in the 2023-24 school year, extreme weather's impact on individual health and healthcare systems has not yet been incorporated.</i>	

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
<i>Score explanation: The increasing rate of community-acquired malaria in Texas and Florida was briefly discussed during a microbiology lecture. Other examples of the changing nature of infectious diseases are explored in similarly brief capacities during the Microbiology coil* of the preclinical curriculum.</i>	
<i>*Coils are recurring topics like anatomy, biochemistry, and pharmacology interwoven throughout different sections of the larger curriculum.</i>	

1.5. Does your medical school 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:

0

Score explanation: Air pollution is categorized as a significant factor in respiratory disease during the pulmonary block, but there was not a larger discussion related to climate change or planetary health. Though occupational and environmental hazards to respiratory health, like asbestos, blastomyces, and others, were covered, these also lacked further contextualization.

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. (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:

0

Score explanation: Since the redesign of the UNC School of Medicine curriculum that was first implemented in the 2023-24 school year, a discussion covering the cardiovascular impact of climate change has not yet been incorporated.

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. (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:	0
<i>Score explanation: At this time, the neuropsychological effects of climate change is not explicitly discussed in the UNC School of Medicine curriculum. Though previously discussed during a Social Health Systems session on Health and Human Rights, the redesigned curriculum has not been adjusted to include a discussion of planetary and mental health.</i>	

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. (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:	0
<i>Score explanation: Since the redesign of the UNC School of Medicine curriculum that was first implemented in the 2023-24 school year, the relationship between individual health, food and water security, and climate change has not yet been incorporated.</i>	

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. (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:	0
<i>Score explanation: Since the redesign of the UNC School of Medicine curriculum that was first implemented in the 2023-24 school year, a discussion of climate change's disproportionate effects on low SES and minority groups has not yet been incorporated.</i>	

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. (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:	0
<i>Score explanation: Although topics related to planetary health are included in the periphery of Social Health System discussions, the regional impacts of climate change are not the main focus of a session. Migration and Health is the title of one session that discusses how dynamic movement patterns, and their various underlying causes, have influenced healthcare.</i>	

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. (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:	0
<i>Score explanation: Although the teratogenic effects of medications are thoroughly covered in the embryology sections of the curriculum, the effects of industry-related environmental toxins are not explored.</i>	

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. (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:	0
<i>Score explanation: There is no discussion of human-caused environmental threats that are relevant to the local community in the curriculum. There were student-led initiatives to raise awareness of the desire to burn pellets at the UNC Cogeneration Facility that would result in the release of PFAs</i>	

into the local community. Additionally, the administration did informally discuss the damaging effects of Hurricane Helene, an extreme weather event that severely affected western North Carolina.

1.13. To what extent does your medical school 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. (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:

0

Score explanation: The current medical school curriculum does not explore Indigenous knowledge when addressing planetary health solutions. The school offers an elective Planetary Health Scholarly Concentration that provides students with the opportunity to research a topic of their choice, and this topic could be explored in this setting. Additionally, Social Health Systems 2 offers an Op-Ed assignment where students can write about a topic that personally resonates with them relating to public health ethics.

1.14. Does your medical school 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. (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:

1

Score explanation: The topic of how toxins disproportionately impact marginalized groups was discussed in the Social Health Systems 3 elective course titled "Environmental Health" by highlighting situations where marginalised groups led climate activism movements to address climate injustices in their neighborhoods or workplaces. For example, the class discussed situations where Latino farmworkers protested against harmful pesticide use on farmland or where a minority and low-income community protested against PCB disposal on local North Carolina land for many weeks in 1982.

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. (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
<i>Score explanation: During Application Phase, a required Gaples Nutrition Module mentions how animal products have a greater impact on greenhouse gas production than plant-based foods. When discussing sources of protein and healthy fats, it briefly mentions the resources required to produce each type of food.</i>	

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. (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
<i>Score explanation: In the Social Health Systems 4 course, students received one presentation from CACHE (Carolina Advocates for Climate, Health, and Equity). This presentation discussed how healthcare systems contribute to global carbon emissions, including the energy requirement of running health systems and the contribution of inhaled anesthetics to carbon emissions.</i>	

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)	0

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 anaesthesia'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)	0
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)	0
<i>Score explanation: As above, students received a presentation from CACHE (Carolina Advocates for Climate, Health, and Equity) during the Social Health Sciences 4 course that addressed the contribution of inhaled anesthetics to carbon emissions. The other components of sustainable practice are not addressed in the curriculum.</i>	

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
<i>Score explanation: The current medical school curriculum does not introduce strategies for having conversations with patients about climate change.</i>	

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
<i>Score explanation: Students are taught to elicit an environmental history, including residence, occupational history, etc. early on in the curriculum. This is practiced in small groups and evaluated in simulations throughout all four years of medical training. However, students do not practice eliciting an extensive environmental exposure history.</i>	

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:	0
<i>Score explanation: There have been no explicit, ongoing efforts to improve planetary health education since 2024.</i>	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> 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
<i>Score explanation: The role of pollution and environmental contaminants on human health is discussed during foundational lectures on asthma and chronic lung disease. As part of the Social Health Sciences course, there are two sessions focusing on pollution and its role on human health, "Policy and Environmental Health" and "Migration and Health." These topics are discussed in a standalone fashion.</i>	

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:

0

Score explanation: The medical school does not have a specific faculty member responsible for overseeing curricular integration of planetary health and sustainable healthcare.

Section Total (12 out of 72)

16.7%

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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

Score explanation: There are several labs in the Center for Environmental Medicine, Asthma, and Lung Biology ([CEMALB](#)) that primarily explore how environmental toxins impact respiratory biology and physiology, specifically in regards to effects on respiratory illnesses like asthma, COPD, cardiovascular diseases, and respiratory infection. CEMALB lists many collaborations, including the Marsico Lung Institute to investigate military burn pit impacts on health, the Children's Research Institute to investigate pollutant impacts on children's respiratory illness, Gillings School of Public Health, and the Institute for the Environment for public communication of results.

Separately, Gillings School of Public Health has many [ongoing projects](#) covering a broad range of planetary health and climate policy disciplines, including industrial hygiene and occupational health, global health, health equity, climate justice, environmental security, among others.

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
<i>Score explanation: The Institute for the Environment (IE) fosters collaboration across departments, faculty, and students to identify and address climate issues and to sustain the environment. The IE has its own air and water departments paired with the Center for Public Engagement with Science, which translates research results into action in NC communities through education and community engagement, and also partners with Sustainable Carolina, which tracks and reports UNC's sustainable goals at various field sites through NC. The institute is composed of faculty from university departments and also professionals from the private sector, including the Center for Environmental Modeling for Policy Development, Carolina Drone Lab, and Sustainable Carolina, among others.</i>	

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
<i>Score explanation: The Center for Resilient Communities and Environment as part of the Institute for the Environment works closely with NC communities to understand how environmental impact their lives in the short and long term. Using this information, the Center works to develop adaptive and resilient community solutions. Although the community does not directly design the research projects, the community expressed needs are central to the research conducted.</i> <i>The Community Engagement Core focuses on bridging community leaders, K-12 educators, and public health professionals to researchers to address metal contamination in well water that the community drinks.</i>	

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:

3

Score explanation: The [Institute for the Environment](#) compiles climate news, upcoming events, research, and climate centers. Additionally, the [Center for Environmental Health and Susceptibility](#) offers up to date information about climate research being conducted across campus.

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

Score explanation: The UNC Institute for Global Health and Infectious Diseases hosted a conference titled "[Friday Conference: Regional Emerging Special Pathogen Treatment Center](#)," where lecturers discussed the center's mission of caring for patients who just landed from abroad with a suspected pathogen. The conference discussed how the risk of infectious pathogens would increase with climate change.

The annual [Clean Tech Summit](#) offers students the opportunity to connect with the private sector, government officials, and other stakeholders, creating dialogue around the clean energy transition and networking opportunities for those interested in climate technology innovation. The event is credited to be one of the largest university-led energy summits.

The annual [UNC Water and Health Conference](#) creates a space for policy makers, physicians, and researchers to debate current research and determine how to best increase access to safe drinking water, sanitation, and hygiene in a sustainable manner.

2.6. Is your institution 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:

0

Score explanation: The University of North Carolina School of Medicine is not currently part of a planetary health organization. The medical student-led group Climate Leadership and Environmental Action Network (CLEAN) is affiliated with Medical Students for a Sustainable Future.

Section Total (15 out of 17)

88.2%

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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 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 <u>institution</u> partner with community organisations to promote planetary and 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 participates in community focused events relating to planetary health. (1 point)	
No, there is no such meaningful community partnership. (0 points)	
Score Assigned:	3
<i>Score explanation: UNC oversees several centers, including the UNC Center For Public Service, Gillings School of Public Health, and UNC Institute for the Environment, that partner with community organisations in an effort to improve sustainability and environmental health. Among these community organizations are Clean Water for NC, Environmental Justice Action Research Clinic, and Winyah Rivers Alliance.</i> <i>For undergraduate students, the Carolina Center for Public Service offers the opportunity to work with local organizations and underserved areas of North Carolina to promote environmental sustainability. The Sustainable Triangle Field Site also offers UNC undergraduates the opportunity to partner with community organisations while building their sustainability skill sets and conducting research.</i> <i>For graduate students, the Ackerman Center for Excellence in Sustainability supports MBA student engagement with the community to raise awareness about sustainability and environmental impact of business practices. Additionally, graduate students at the Gillings School of Public Health may complete an “Environmental Health Solutions” Practicum by partnering with an external organization and helping to provide environmental solutions for public health and well-being. The UNC School of Medicine houses The Center for Environmental Medicine, Asthma, and Lung Biology (CEMALB), focusing broadly on the impacts of environmental changes on respiratory health. Although this center does not directly partner with community organizations, it has partnered with the Center of Environmental Health and Susceptibility and the Institute for</i>	

Environmental Health solutions to communicate research to the general public, lawmakers, and other community stakeholders.

3.2. Does your institution offer community-facing courses or events regarding planetary health?

The **medical school** offers community-facing courses or events at least once every year. (3 points)

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. (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** has not offered such community-facing courses or events. (0 points)

Score Assigned:

1

Score explanation: The UNC School of Medicine offers several [community facing courses/modules](#), including courses for nutrition, diabetes, grief counseling, and pregnancy, but does not offer courses regarding planetary health.

UNC's Center for Public Engagement with Science works to enhance public understanding of environmental science and research via informal science education, science communication, and community engagement initiatives. For example, the Center spearheaded the Youth Engaging in the Science of Resilience: Sensing the Environment and Envisioning Solutions ([YES Resilience: SEE Solutions](#)), a project supporting youth and informal educators in fostering environmental health literacy and developing locally relevant solutions to climate impacts in their communities. Each April, UNC also holds the [UNC Science Expo](#), which focuses broadly on teaching the community about STEM topics and research efforts at the university, which may include environmental sustainability and climate change.

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 **sometimes** included in communication updates. (1 point)

Students **do not** receive communications about planetary health or sustainable healthcare. (0 points)

Score Assigned:

1

Score explanation: [Vital Signs](#), a UNC Health Newsletter distributed to health professionals throughout the UNC network, occasionally features announcements related to planetary health and environmental justice. These updates are typically related to current research efforts at the

university but may also include community service efforts. These are solely related to the university and not to broader planetary health issues.

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:

0

Score explanation: Among Continuing Medical Education's offered activities (which are listed by individual departments of the UNC School of Medicine), none are related to planetary health or sustainable health care. Of note, UNC's [Office of Continuing Professional Development](#) neither maintains a comprehensive list of CME sessions nor tracks session topics.

3.5. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?

Yes, the **institution** 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 hospitals have accessible educational materials for patients. (0 points)

Score Assigned:

2

Score explanation: The Gillings School of Global Public Health offers three [online modules](#) at no cost to community members: "UNC: Extreme Heat and Air Quality: Implications for Human Health," "Environmental Asthma Triggers," "and "Mold and Moisture." UNC Health no longer offers an online Health Library with an Environmental Health Learning Center.

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 institution 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:	2
<i>Score explanation: The UNC Health Science Library has educational materials about the health effects of climate change. On this page, there are links to webpages for more information on air pollution, increasing allergens, extreme heat, water quality, and more.</i>	

Section Total (9 out of 14)	64.3%
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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 <u>institution</u> offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum. (2 points)	
The institution 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 and there is no requirement to participate. (1 point)	
No, the institution does not offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	1
<i>Score explanation: UNC School of Medicine does not have specific monetary grants to fund sustainability initiatives/QI projects, nor are sustainability QI projects part of the core curriculum. However, there are several opportunities for students to design QI projects and receive non-monetary resources to succeed in these projects. For example, the Planetary Health Scholarly Concentration Program, the Clinician Leadership in Quality and Safety Scholarly Concentration Program, the Community Based Longitudinal Care clerkship course, and Social Health Systems (SHS) 5 course all have a QI project requirement. Students may focus on sustainability if they wish, but it is not required.</i>	

4.2. Does your <u>institution</u> offer opportunities for students to do research related to planetary health and/or sustainable healthcare?	
The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare 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:	1

Score explanation: UNC School of Medicine does not house funded specific research programs or fellowships for medical students to conduct planetary health/sustainable healthcare research. However, there are research opportunities for students to perform research related to planetary health/sustainable healthcare if they have the initiative to seek and carry them out. The newest addition of a [Planetary Health Scholarly Concentration Program](#) in the School of Medicine offers an opportunity to design a longitudinal four-year-long final project to be presented at the annual spring Scholarly Concentration Program symposium. Students can obtain funding for planetary health/sustainable healthcare through the [Carolina Medical Student Research Program \(CMSRP\)](#), an 8-week-long summer research program, or by working with eligible MD/PhD faculty members through the interdisciplinary graduate program's [Curriculum in Toxicology & Environmental Medicine](#). UNC Gillings School of Public Health offers medical students the opportunity to pursue a Masters in Public Health (MPH), which can include coursework and research that focus on planetary health/sustainable healthcare. There is an [MPH concentration in Environment, Climate and Health](#), but it is less accessible for medical students due to a separate application process and additional graduation requirements. Outside of the MPH degree programs, there are also research projects through Gillings-affiliated programs such as the [Center for Environmental Health and Susceptibility \(CEHS\)](#), which is funded through a P-30 grant from the National Institutes of Environmental Health Sciences.

4.3. Does the institution have a webpage where students can find specific information related to planetary health and/or sustainable healthcare 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 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. (2 points)

There is an institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the institution, 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:

1

Score explanation: UNC School of Medicine has a website for the new [Planetary Health Scholarly Concentration Program](#) which lists the faculty advisor, medical student co-directors, and student leadership team. However, the website focuses on the program structure rather than providing centrally-located specific information on planetary health/sustainable healthcare. There are interdisciplinary websites with information related to planetary health research such as the [Center for Environmental Medicine, Asthma and Lung Biology](#) and its [affiliated programs/collaborators](#) which includes departments such as [Pediatric Allergy/Immunology](#), [Pediatric Rheumatology](#), [Pediatric Pulmonology](#), and the [Division of Pulmonary Diseases and Critical Care Medicine](#).

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 institution dedicated to planetary health or sustainability in healthcare. (2 points)	
Yes, there is a student organisation at my institution 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
<i>Score explanation: Climate Leadership & Environmental Action Network (CLEAN) is a student organization in the UNC School of Medicine dedicated to planetary health and sustainability in healthcare and the recognition of climate change as an urgent threat to human health. CLEAN has an official faculty advisor and receives funding from UNC School of Medicine Student Government and the Office of Global Health Education for projects and scholarships to engage students with global health and planetary health education. This led to the creation of a new Planetary Health Scholarly Concentration Program. CLEAN has partnered with the UNC Family Medicine Clinic to host film screenings and support a new community garden initiative and partnered with North Carolina Black Alliance to talk about environmental justice.</i>	

4.5. Is there a student liaison representing sustainability interests who serves on a <u>department or institutional</u> 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
<i>Score explanation: There is no student liaison specifically dedicated to represent sustainability interests and advocate for curriculum reform and/or sustainability best practices within the UNC School of Medicine Student Government although officers involved with Education Development, Curriculum Affairs, or other roles could choose to champion these interests if desired. There is also no such medical student liaison on the Carolina Sustainability Council which currently has student representatives from the Undergraduate Student Government and Department of Earth, Marine, and Environmental Sciences for 2024-2025.</i> <i>It should be noted that there is a Climate Crisis Committee of the Graduate and Professional Student Government (GPSG) that is working alongside Sustainable Carolina to help update and improve UNC's Climate Action Plan, so if a medical student was interested in joining and acting as a student liaison, that could be possible.</i>	

4.6. In the past year, has the <u>institution</u> had one or more co-curricular planetary	Score
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health programs or initiatives in the following categories? (1 point each)	
Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.	1
Panels, speaker series, or similar events related to planetary health that have students as an intended audience.	1
Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.	1
Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	1
Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.	1
Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	1

Score explanation:

UNC School of Medicine Student Government hosts biannual days of service to encourage medical students in community service. One opportunity is held at the [Carolina Community Garden \(CCG\)](#), an engagement program of the North Carolina Botanical Garden located on UNC Chapel Hill campus. CCG is an organic, sustainable garden that grows produce to distribute to UNC lower wage workers. The North Carolina Botanical Garden also hosts [Edible Campus UNC](#), an agricultural and educational program where students can volunteer and responsibly harvest produce from gardens throughout campus for their own consumption. In addition, Biology 217 (The Physician's Garden) is an undergraduate course whose students learn about medicinal properties of plants and maintain the [Sam W. Hitt Medicinal Plant Garden](#) with another undergraduate student organization called The Gardening and Ethnobotany in Academia (GAEA) Project.

For medical students, the required Social and Health Systems 4 course dedicated a session to planetary health and global health. The new [Planetary Health Scholarly Concentration Program](#) hosted a monthly planetary health seminar series open to any interested medical student. The [Curriculum in Toxicology & Environmental Medicine](#), an interdisciplinary graduate program at UNC, also hosts regular seminars on various planetary health topics. Following the annual Climate Action Day, the 2024 Charles E. Lenner Seminar Series from the UNC Chapel Hill Environment, Ecology, and Energy Program hosted a lecturer for a talk about the impacts of climate change on marine organisms and sustainable aquaculture solutions.

CLEAN has partnered with [North Carolina Black Alliance](#) to talk about environmental justice. CLEAN also encourages members to get involved with the [Carolina Advocates for Climate, Health, and Equity \(CACHE\)](#) through their annual symposium and monthly advocacy training sessions for health professionals in North Carolina who are interested in centering health equity in climate change conversations and fostering resilient health systems and communities in the face of changing climate. The annual [Climate Action Day](#) at UNC is hosted by the Climate Crisis Committee of the Graduate and Professional Student Government (GPSG) at the University of North Carolina at Chapel Hill. Students are encouraged to stop by and connect with local sustainability-focused organizations ([Climate Action NC](#), [Carolina Thrift](#), Orange County Sustainability, [North Carolina Conservation Network](#), [Carrboro Vermicomposting](#), [Weaver Street Market](#)) and learn more about campus initiatives on sustainability (UNC Renewable Energy

Special Projects Committee [RESPC], Sunrise UNC, UNC Office of Waste Reduction and Recycling [OWRR], UNC Trash Force, Edible Campus UNC, Carolina Dining Services, UNC Chemistry Sustainability Committee). The [Institute for Environment at UNC](#) and [Sustainable Carolina](#) also have a list of events that include partnerships with local environmental justice organizations. Some of the aforementioned local sustainability-focused organizations and campus initiatives and others such as [No Coal UNC](#) have volunteering/community engagement opportunities for students to build community resilience in the face of climate crisis.

Sunrise UNC hosted an [Art Build](#) to kick off the Southern College Climate Gathering at UNC Chapel Hill. The Department of Environmental Affairs of UNC Undergraduate Student Government hosted the [Sustainable Strut](#), a student-based fashion show that showcases clothing that has been cultivated sustainably and ethically, at the Ackland Art Museum.

UNC Chapel Hill's [Outdoor Education Center](#) hosts outdoor programs for all students (kayaking, hiking, camping, etc.) and offers outdoor equipment rentals. CLEAN hosts group hikes/walks for interested medical students.

Section Total (11 out of 15)

73.3%

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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 <u>institution</u> 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:	2
<i>Score explanation: On Earth Day 2020, former Chancellor Guskiewicz announced the creation of Sustainable Carolina, UNC's Office of Sustainability. Sustainable Carolina is directed by Mike Piehler, Ph.D., the University's Chief Sustainability Officer, and "links strategic visions outlined by the Carolina Sustainability Council with schools, departments and offices across campus." Currently, there are no representatives from UNC School of Medicine or UNC Health on the council.</i>	

5.2. How ambitious is your <u>institution's</u> 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

Score explanation: UNC released its [Climate Action Plan](#) in 2021, which lays out more ambitious goals to achieve net-neutrality in carbon emissions by 2040. Twenty-three strategies have been identified to reduce greenhouse gas emissions by 79% compared to the 2007 baseline, including the use of alternative and renewable fuels, purchasing renewable electricity, and carbon offsets.

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:

0

Score explanation: In line with the overarching goal of carbon neutrality by 2040, UNC is currently engaged in efforts to reduce total carbon and purchased electricity carbon. However, most of the electricity currently used to power campus buildings, including UNC School of Medicine facilities, comes from stationary combustion or is purchased from Duke Energy. Duke Energy generates the majority of electricity from burning fossil fuels. More information can be found in the 2023 Greenhouse Gas Inventory Report, available [here](#).

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:

2

Score explanation: UNC's flagship medical education building, Roper Hall, opened in 2023, has a LEED Silver certification pending, having earned more than half of the LEED certification points.

Sustainable design features of the building [include](#) “high-efficiency heating, cooling, and lighting systems as well as low-flow stormwater and condensate harvesting. Its cooling and air handling systems enable it to use 30% less energy and 40% less water than similar structures.” The Mary Ellen Jones building was renovated in 2020 and received a LEED Gold certification. Marsico Building, which houses School of Medicine research labs and classrooms, was also constructed to LEED Silver standards. The majority of older School of Medicine buildings have not been retrofitted to incorporate sustainable practices.

5.5. Has the institution 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

Score explanation: UNC’s [Commuter Alternative Program](#) formally incentivizes faculty, staff, and students to use sustainable transportation options, including the town of Chapel Hill’s free bus system. UNC also provides all University faculty, staff, students and affiliates and UNC Hospital employees with [free GoPasses](#) for GoTriangle bus routes. Many first and second-year medical students use buses or bicycles to commute to campus during pre-clinical years, as availability and cost further restrict access to parking on UNC’s campus. During third and fourth years, UNC School of Medicine requires a car to access clinical sites, and environmentally-friendly transportation options are not available.

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 institution. (0 points)

Score Assigned:

2

Score explanation: Conventional recycling facilities with multiple bins are available throughout UNC SOM's Roper Hall and all other campus buildings. An organic recycling program is also available on campus with compost bins available in the Beach Café (the main School of Medicine dining facility), but only one compost bin available on the first floor of Roper Hall. On UNC's undergraduate campus, recycling and composting are also available in dining halls.

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 **adequate** sustainability 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:

1

Score explanation: Carolina Dining Services (CDS), which provides food and dining services to the University of North Carolina, has multiple ongoing sustainability initiatives, including local sourcing, rotating climate-friendly options, and efforts to reduce food and plastic waste. CDS operates only one dining hall on the medical school campus, the Beach Cafe, which is primarily composed of outside vendors without clearly defined sustainability guidelines. There are no guidelines or requirements for catering services or outside food procurement, and the School of Medicine is not otherwise engaged in efforts to increase food and beverage sustainability.

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:

1

Score explanation: UNC Chapel Hill's [Sustainability Policy](#) includes guidelines for energy efficient purchasing and procurement that are predominantly focused on energy efficiency ratings for equipment. There are no other sustainability guidelines. The School of Medicine does not apply its own sustainability guidelines for equipment procurement.

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:

0

Score explanation: There are no sustainability guidelines for UNC School of Medicine 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

Score explanation: The University of North Carolina's [Green Labs](#) offers programs dedicated to increasing awareness and adoption of sustainable practices in laboratories on campus. UNC's Green Labs program also offers opportunities for sustainable certification.

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:

1

Score explanation: Based on the most recent UNC Investment Fund and Chapel Hill Investment Fund annual report, 4.6% of the UNC endowment portfolio encompasses energy and natural resources, which includes oil, natural gas, and other commodity-related investments. Multiple undergraduate and graduate student groups continue to advocate for a commitment to full divestment from fossil fuel companies.

Section Total (16 out of 32)

50.0%

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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 North Carolina at Chapel Hill School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(12/72) \times 100 = 16.7\%$	F+
Interdisciplinary Research (17.5%)	$(15/17) \times 100 = 88.2\%$	A
Community Outreach and Advocacy (17.5%)	$(9/14) \times 100 = 64.3\%$	B-
Support for Student-led Planetary Health Initiatives (17.5%)	$(11/15) \times 100 = 73.3\%$	B
Campus Sustainability (17.5%)	$(16/32) \times 100 = 50.0\%$	C
Institutional Grade	$(16.7 \times 0.3) + (88.2 \times 0.175) + (50.0 \times 0.175) + (73.3 \times 0.175) + (50.0 \times 0.175) = 50.8\%$	C

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which **University of North Carolina at Chapel Hill School of Medicine** has participated in the Planetary Health Report Card initiative.

Planetary Health Report Card Trends for University of North Carolina at Chapel Hill School of Medicine

