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# **Planetary Health Report Card:** *The University of North Carolina at Chapel Hill*

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**UNC**

**SCHOOL OF  
MEDICINE**

2021-2022 Contributing Team:

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## Summary of Findings

Overall	C+
<u>Curriculum</u>	C-
<ul style="list-style-type: none"> <li>● <b>Strengths:</b> The University of North Carolina School of Medicine (UNC SOM) includes planetary health in the curriculum, but it lacks specific topics and depth of materials.</li> <li>● <b>Recommendations:</b> UNC SOM could include planetary health in the core competencies and offer planetary health-specific electives. Education could include the significant carbon footprint of healthcare.</li> </ul>	
<u>Interdisciplinary Research</u>	A-
<ul style="list-style-type: none"> <li>● <b>Strengths:</b> UNC has researchers and departments focused on planetary health and its impacts on human health, but healthcare sustainability and carbon footprint of UNC Health are not researched. The medical school has not hosted a conference and is not a member of an international planetary health organization.</li> <li>● <b>Recommendations:</b> UNC researchers could research healthcare sustainability. UNC SOM could organize a planetary health conference and join the Planetary Health Alliance and the Global Consortium on Climate and Health Education.</li> </ul>	
<u>Community Outreach and Advocacy</u>	C-
<ul style="list-style-type: none"> <li>● <b>Strengths:</b> UNC Health has maintained its partnership with CleanAIRE NC. The health care system has also added an Environmental Health Learning Center to its online Health Library for patients.</li> <li>● <b>Recommendations:</b> UNC SOM could add content to the online learning center. Planetary health and sustainable healthcare news and events could be featured in UNC Health’s newsletter <i>Vital Signs</i>. The SOM could collaborate with the school of public health to create public education courses and events on planetary health. UNC could create and clearly list planetary health-related CME courses on UNC department websites.</li> </ul>	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> <li>● <b>Strengths:</b> UNC SOM is supportive of student-led initiatives related to planetary health. Funding for CLEAN Med UNC was awarded for 2021-2022 academic year. Administration is willing to receive and act on feedback related to including more planetary health issues in required courses.</li> <li>● <b>Recommendations:</b> UNC SOM could create an organized, easily-navigable website detailing ongoing research projects/mentors and related grant opportunities specifically addressing planetary health. UNC could develop student research-funding grants related to planetary health and could make a dedicated planetary health academic program (such as a Scholarly Concentration or MPH concentration for medical students focusing on planetary health).</li> </ul>	
<u>Campus Sustainability</u>	C
<ul style="list-style-type: none"> <li>● <b>Strengths:</b> The town surrounding UNC Chapel Hill has a reliable, free public transportation system with goals to shift to 100% renewable energy sources by 2050. Composting and recycling sites are mildly accessible on campus, and the UNC Green Labs program encourages labs to have sustainable practices.</li> <li>● <b>Recommendations:</b> The school could retrofit older buildings with environmentally-friendly strategies. UNC could purchase renewable energy from their current energy source, Duke Energy, and could move money away from fossil-fuel companies and towards environmentally-friendly and sustainable sources.</li> </ul>	

# 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 analyzing 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, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many medical school’s institutional priorities do not reflect the urgency of this danger to human health.

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

With the purpose of increasing planetary health awareness and accountability among medical schools, we have created a Planetary Health Report Card that medical students internationally can use to grade and compare their home institutions on an annual basis. This medical-student-driven initiative aims to compare medical schools 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 centered on environmental health impacts 5) medical school campus sustainability.

# Definitions & Other Considerations

## Definitions:

- **Planetary Health:** is described by the *Planetary Health Alliance* as “a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth”. 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 medical school 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.
- **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 vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (for example, undergraduate departments (USA), other related departments eg Public Health, Population Health departments). In contrast, when “institution” is specified in the report card, we are referring to the university more broadly. 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

providers 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 mold 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.

- **Elective:** The word “elective” refers to an optional course or lecture series that a medical 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.
- **Clerkship:** 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 or placements.

#### **Other considerations:**

- If there are more than one “tracks” at your medical school 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 example).

Added to our resources this year, the Planetary Health Report Card [Literature Review by Metric](#) collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a 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*

<b>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?</b>	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation: There were no electives offered in the past year at UNC SOM focusing solely on planetary health. Planetary health issues (e.g., pollution, migration) are sometimes touched on in electives related to social determinants of health, but they are not the focus of any elective offered. During some electives, students have the opportunity to choose their own topics to explore for projects or papers and may have the opportunity to choose topics related to planetary health.</i></p>	

## *Curriculum: Health Effects of Climate Change*

<b>2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

*Score explanation: Heat-related illness is a topic that was addressed briefly (few slides in a lecture) as part of an elective social medicine course on incarceration and health as well as the course of health and human rights at UNC SOM. In the health and human rights course, the National Climate Assessment on Human Health was discussed during class. This document outlines impacts on health of heat in urban communities and heat islands and temperature related illnesses and death. However, there are no elective opportunities dedicated solely to health impacts of climate change, including heat-related illnesses. Additionally, content on heat-related risks of nephrolithiasis and acute kidney injury was incorporated into the Renal block starting Spring 2021.*

**3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?**

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

*Score explanation: The topic of extreme weather events on individual health and/or the healthcare systems is not explicitly covered in the current curriculum.*

**4. Does your medical school curriculum address the impact of climate change on the changing patterns of infectious diseases?**

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

*Score explanation: The impact of climate change on changing patterns of infectious diseases is discussed at various points of the longitudinal Microbiology preclinical curriculum at UNC. One example is the likelihood of increased disease incidence in the United States due to climate change is mentioned in the context of Chagas disease, mosquito-borne diseases, and endemic fungal pathogens. Updates to the curriculum are largely based on the CDC website's prevalence maps.*

**5. Does your medical school curriculum address the respiratory health effects of climate change and air pollution?**

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

*Score explanation: The core preclinical curriculum addresses air pollution as a major respiratory health hazard during the Respiratory/Pulmonology block. Air pollution is discussed in the context of industrial toxins, especially in developing countries, and also with regard to wildfires. Fine particulate matter, ozone, sulfur dioxide, nitrogen dioxide, and airborne lead and their respective respiratory health impacts are discussed. The core curriculum does less to highlight the impact of air pollution on cardiovascular health with “pollution” mentioned briefly in the context of environmental or epigenetic factors that may play a role in cardiovascular disease. Supplementary information was provided to students in the cardiovascular disease block to be reviewed outside of class.*

<b>6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

*Score explanation: Although not discussed during class time by faculty, supplementary information, produced by the UNC club Climate Leadership and Environmental Action Network (CLEAN) in collaboration with faculty, is given to all students to review on their own time. The information provided during the cardiovascular block contains information pertinent to the health effects of climate change on cardiovascular health, including increased heat.*

<b>7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.



*Score explanation: The mental health and neuropsychological effects of environmental degradation and climate change are discussed in the Social Health Systems course “Health and Human Rights,” There is a dedicated class discussion regarding the ethics and impact of climate change, including its impact on mental health. This class is discussion based, after various assigned readings on the topic of climate change.*

**8. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?**

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

*Score explanation: The current preclinical core curriculum does not address the relationships between individual patient food security, ecosystem health, and climate change. However, interested students may choose to explore these topics through the Humanities and Social Sciences Scholarly Concentration and/or the Nutrition Scholarly Concentration.*

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

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

*Score explanation: One option for students in their third-semester elective for Social and Health Systems (SHS) is Health and Human Rights. This course includes discussion dedicated to climate change and human rights, and students prepare for this discussion by reading two relevant materials: 1) “Climate Change, Human Rights, and Social Justice” by Levy and Patz in Annals of Global Health, and 2) Chapter 14 of the Fourth National Climate Assessment by the US Global Climate Change Research Program. Additionally, students may choose to explore these topics through the Humanities and Social Sciences Scholarly Concentration. These topics are also covered in the weekly lectures for the Patient Centered Care course for MIs. Of note, content related to these topic areas will likely be incorporated into the preclinical core curriculum’s ‘Social and Health Systems’ class in coming years after discussions with faculty who are receptive to the idea.*

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

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

*Score explanation: Similar to the effects of climate change on mental health, this topic is covered in the Social Health Systems course on Health and Human Rights. One specific topic covered is the disproportionate generation of greenhouse gasses and the impact on lesser contributing countries.*

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

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

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

*Score explanation: The core preclinical curriculum addresses air pollution as a major respiratory health hazard during the Respiratory/Pulmonology block. Air pollution is discussed in the context of industrial toxins, especially in developing countries, and also with regard to wildfires. Fine particulate matter, ozone, sulfur dioxide, nitrogen dioxide, and airborne lead and their respective respiratory health impacts are discussed. The core curriculum does less to highlight the impact of air pollution on cardiovascular health with “pollution” mentioned briefly in the context of environmental or epigenetic factors that may play a role in cardiovascular disease. These environmental toxins are referenced during lectures on embryology, which occur in every system block. There is special focus placed on their differential impact depending on time of exposure, weeks 0-8 being the most sensitive.*

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

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

0	This topic was not covered.
<i>Score explanation: This topic is not currently covered in the medical school curriculum. Efforts on the broader campus have addressed the university's reliance on coal and protests have been organized locally to open the conversation in the Chapel Hill community.</i>	

<b>13. To what extent does your medical school emphasize the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?</b>	
3	Indigenous knowledge and value systems are integrated throughout the medical school's planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.
0	This topic was not covered.
<i>Score explanation: Indigenous knowledge is not currently incorporated into the medical school curriculum regarding planetary health solutions.</i>	

<b>14. Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>Score explanation: Similarly to point 10, this topic is discussed in the Social Health Systems course, Health and Human Rights. The differential impact is discussed in the broad class discussion. The group speaks about impacts in the US and abroad.</i>	

***Curriculum: Sustainability***

<b>15. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?</b>	
3	This topic was explored in depth by the core curriculum.

2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: Pre-clinical nutrition lectures tend to focus on the health benefits of various diets (i.e., Mediterranean diet, DASH diet) as evidenced by clinical study outcomes. The Mediterranean diet is promoted in lecture material as a healthful diet because a large component is fruits, vegetables and legumes, but the environmental impacts are not addressed. A purely plant-based (“vegan”) diet is mentioned in some lecture materials as potentially beneficial for certain diseases (e.g., diabetes), but lectures do not go further in discussing this diet. A summer elective class in culinary medicine did not address environmental impacts of diet. Content in the Nutrition Scholarly Concentration acknowledges in passing that some diets are more environmentally friendly, but spends little to no time on these aspects.</i></p>	

<b>16. Does your medical school curriculum address the carbon footprint of healthcare systems?</b>	
3	This topic was explored in depth by the core curriculum
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: This topic is covered in elective coursework in the Social Health Systems course, but not in the school curriculum. This is a topic of interest for the Climate Leadership and Environmental Action Network, and discussion has been had about incorporating this topic into the curriculum and action to reduce our footprint at UNC.</i></p>	

<b>17. Does your medical school curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (1 point each)</b>	
1	Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally anaesthetic gas options with reduced greenhouse gas emissions

1	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 fulfill this metric.
1	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 for obesity. This is commonly known as social prescribing in the UK.
1	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
<p><i>Score explanation: These topics have yet to be breached by the medical school curriculum. As mentioned in 16, discussion has begun between the UNC hospital system and medical school about education and sustainability efforts.</i></p>	

**Curriculum: Clinical Applications**

<b>18. In training for patient encounters, does your medical school’s curriculum introduce strategies to have conversations with patients about the health effects of climate change?</b>	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
<p><i>Score explanation: The Patient Centered Care course, which teaches clinical skills during the pre-clinical semesters, does not address climate change or teach strategies for having conversations with patients about climate change. This was a topic of discussion in the “Health and Human Rights” elective course. The course focused on how to inspire action and mitigate the mental health impacts felt due to the climate crisis.</i></p>	

<b>19. In training for patient encounters, does your medical school’s curriculum introduce strategies for taking an environmental history or exposure history?</b>	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.

*Score explanation: The Patient Centered Care course includes instruction on how to take a history from patients regarding environmental exposures. One specific case that students utilize involves a patient with likely pneumonitis due to exposure to inhaled irritants through military work.*

**Curriculum: Administrative Support for Planetary Health**

**20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?**

4	Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.

*Score explanation: Administrators welcome planetary health as part of the core curriculum. This has not been implemented yet, but will be approved at future medical education committee meetings (anticipated spring/summer 2022). Further, discussion with the UNC Health system has opened the door to future improvements and collaboration. These discussions will lead to major improvements in 2022-2023 with further progress in the coming years. For example, climate change and its health impacts are in the process of being written in as core competencies for focus by the medical school curriculum. This will push faculty in all health system blocks to address climate directly. By having these competencies as part of the curriculum, it will provide top down motivation for faculty in the preclinical and clinical curriculum to teach about climate and health impacts.*

**21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum?**

6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).
0	There is minimal/no education for sustainable healthcare.

*Score explanation: The discussions regarding sustainable healthcare remain mostly between the Climate Leadership and Environmental Action Network, medical school faculty, and the hospital*

system. These efforts will hopefully lead to broader discussion and inclusion in the medical school curriculum in the coming years.

**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?**

1	Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
0	No, the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.

*Score explanation: Recent discussions with medical school faculty have resulted in support for incorporation of planetary health education and sustainable healthcare as core learning objectives. These changes will take place during 2022 in collaboration with the Climate Leadership and Environmental Action Network. Drs. [Kurt Gilliland](#) and [Beat Steiner](#) of the medical school faculty have taken interest and support for implementation of a more robust curriculum.*

<b>Section Total (29 out of 69)</b>	<b>42.0%</b>
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*Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Interdisciplinary Research

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

<b>1. Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?</b>	
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health <b>or</b> healthcare sustainability.
2	Yes, there are individual faculty members at the School of Medicine who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.

*Score explanation: The University of North Carolina has many faculty researchers in planetary health. The Center for Environmental Health and Susceptibility (CEHS), a Gillings School of Global Public Health reference, has three main research areas in translational medicine: cardiopulmonary disease, developmental disease, environmental cancer. However, these collaborative departments may have medical school faculty and/or public health school faculty leading research. The [Center for Environmental Medicine, Asthma, and Lung Biology](#) is housed within the medical school and hosts seven labs researching mucociliary clearance of aerosols (Bennett Lab), allergy development (Moran Lab), and impact of pollution on host defense responses and asthma/COPD (Jaspers Lab, Peden Lab). Further, the Curriculum in Toxicology and Environmental Medicine is an interdisciplinary program with faculty of the School of Medicine and other programs across UNC. There are no researchers who focus on the sustainability of healthcare.*

<b>2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?</b>	
3	There is at least one dedicated department or institute for interdisciplinary planetary health research.
2	There is not currently a department or institute for interdisciplinary planetary health research, but there are plans to open one in the next 3 years.



1	There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research.
0	There is no dedicated department or institute.
<p><i>Score explanation: The UNC Institute for the Environment (IE) is the “face” of all environmental programs on campus, working to centralize publications, research efforts, and various student and faculty efforts. The IE focuses on using the collaborative spirit of departments and schools to find answers to and ask further questions of multidisciplinary issues in planetary health. While some programs through the IE are focused more specifically on modeling environmental impact, many branch centers such as the CEHS in the UNC Gillings School of Global Public Health focus on translational medical research, individual and group susceptibilities to environmental and occupational factors, and education and outreach on these topics. This center has four strategic goals: 1) to facilitate translational research in cardiopulmonary disease, developmental disease, and environmental cancers, 2) to disseminate knowledge and technology across research groups working on environmental susceptibility, 3) to recruit and train environmental health science workforce in research and its translation, 4) to engage public health and community leaders to respond to environmental health threats facing North Carolinians and the United States. It has 93 faculty members across schools at UNC.</i></p>	

<b>3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?</b>	
3	Yes, there is a process in which community members impacted by climate and environmental injustice have decision-making power in the climate + environmental research agenda.
2	Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.
1	No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
0	There is no process, and no efforts to create such a process.
<p><i>Score explanation: In the previous year, there was no official process by which communities disproportionately impacted by environmental injustice give input or make decisions about the research agenda at the UNC SOM. However, as of November 2021, the Center for Environmental Health and Susceptibility (CEHS) “supports a Stakeholder’s Advisory Board that provides insight into community priorities as to environmental health issues” according to Michael Sanderson at the CEHS. The CEHS has member faculty from the School of Medicine, School of Public Health, School of Dentistry, School of Pharmacy, School of Nursing, Institute for the Environment, and College of Arts &amp; Sciences.</i></p>	

**4. Does your institution have a planetary health website that centralizes ongoing and past research related to health and the environment?**

3	There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.
<p><i>Score explanation: The Institute for the Environment (IE) at UNC hosts a central website “to act as the ‘public face’ of all environmental programs on the campus, providing information on these programs and a way to celebrate their success and expertise.” Other IE goals include bringing all programs and departments together to tackle interdisciplinary environmental problems and to create new interdisciplinary areas to study. The website clearly lists institutional faculty who have research, mentoring, or teaching roles in environmental health under the <a href="#">About page</a>. Further, finding scholarship, program, or publication information is easily found. While there is a function for upcoming events under Sustainable Carolina, there are not current or recent events listed.</i></p>	

<b>5. Has your institution recently hosted a conference or symposium on topics related to planetary health?</b>	
4	Yes, the <b>medical school</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.
3	Yes, the <b>institution</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.
2	Yes, the institution has hosted a conference on topics related to planetary health in the past three years.
1	The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the institution has not hosted a conference on topics related to planetary health in the past three years.
<p><i>Score explanation: The University of North Carolina at Chapel Hill has hosted multiple conferences in 2021:</i></p> <ul style="list-style-type: none"> <li>- <i>Water and Health conference, hosted by the School of Public Health annually since 2012. The conference was 100% virtual in the fall 2020 and October 4-8, 2021. <a href="#">Conferences at The Water Institute</a></i></li> <li>- <i>Institute for the Environment (IE) also hosted its 20th annual Community Modeling and Analysis System (CMAS) conference that works to develop air quality modeling technology. The CMAS primary goals are to build models, develop datasets, analyze results, and understand model behavior, and these models are helpful tools to analyze the air quality impact</i></li> </ul>	

*on human health. the 2021 conference spanned November 1-5, 2021.*  
<https://www.cmascenter.org/conference/archive.cfm>  
*The UNC School of Medicine has not hosted a conference related to planetary health.*

<b>6. Is your medical school a member of a national or international planetary health or ESH organization?</b>	
1	Yes, the medical school is a member of a national or international planetary health or ESH organization
0	No, the medical school is not a member of such an organization
<p><i>Score explanation: UNC School of Medicine is not a member of any planetary health organization. The UNC School of Global Public Health is a member of the Global Consortium on Climate Health and Education, and there has been an invitation for the SOM to join, but this awaits approval from the Executive Dean. UNC is not a Planetary Health Alliance member.</i></p>	

<b>Section Total (14 out of 17)</b>	<b>82.3%</b>
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*Are there additional research resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Community Outreach and Advocacy

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

<b>1. Does your medical school partner with community organizations to promote planetary and environmental health?</b>	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation: UNC Health is a healthcare partner of <a href="#">CleanAIRE NC</a>, a nonprofit organization that works to “advocate for the health of all North Carolinians by pursuing equitable and collaborative solutions that address climate change and air pollution.” According to CleanAIRE NC’s Director of Operations, however, the COVID-19 pandemic has partly interrupted the relationship.</i></p>	

<b>2. Does your medical school offer community-facing courses or events regarding planetary health?</b>	
3	The medical school offers community-facing courses or events at least once every year.
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.
0	The medical school has not offered such community-facing courses or events.
<p><i>Score explanation: ‘<a href="#">UNC: Extreme Heat &amp; Air Quality: Implications for Human Health</a>’ is a free module developed by the UNC Gillings School of Global Public Health to inform community members</i></p>	

about the associations between extreme heat, air pollution, and health. Gillings also offers [‘Environmental Asthma Triggers,’](#) another free module that addresses the effects of air pollution on asthma and the populations that are disproportionately affected. Finally, Gillings provides [online educational materials](#) related to DNA damage due to toxic metal and industrial chemical exposures, although they were primarily designed for biology students and teachers.

In partnership with the NC Museum of Natural Sciences, the UNC Institute for the Environment also offers the Youth Engaging in the Science of Resilience Program, a free summer program for high school students to explore the impacts of climate change in their local communities, investigate strategies for increasing community resilience, and complete a community action project.

**3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?**

2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not regularly receive communications about planetary health or sustainable healthcare.

*Score explanation: Vital Signs, the UNC Health newsletter received by the medical school community, has featured a few announcements related to planetary health and environmental justice.*

**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?**

2	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.
1	Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are no such accessible courses for post-graduate providers

*Score explanation: UNC’s Office of Continuing Professional Development does not maintain a comprehensive list of Continuing Medical Education (CME) courses or activities, and the CME Coordinator is currently unaware of any that were related to planetary health or sustainable health care.*

**5. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about environmental health exposures?**

2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centers have accessible educational materials for patients.

*Score explanation: UNC Health’s online Health Library features an [Environmental Health “Learning Center”](#) that contains information about numerous related health topics, including but not limited to “Avoiding Mercury in Fish,” “Child Safety: Air Pollution,” “Quick Tips: Shopping for Organic and Chemical-Free Foods,” “Insect Repellants,” and “Black Lung Disease.”*

**6. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about climate change and health impacts?**

2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.

*Score explanation: UNC Health does not have patient-facing materials about climate change and its health impacts.*

<b>Section Total (6 out of 14)</b>	<b>42.8%</b>
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*Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# 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.*

<b>1. Does your institution offer support for medical students interested in enacting a sustainability initiative/QI project?</b>	
2	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.
1	The medical school encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, the institution does not offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation: UNC SOM does not have grants to enact sustainability initiatives/QI projects or integrate sustainability QI projects as part of the core curriculum. However, the SOM encourages sustainability QI projects and offers resources to succeed in these projects. For example, students in the Clinician Leadership in Quality and Safety Scholarly Concentration may focus on environmental sustainability in healthcare for their program's required QI project.</i></p>	

<b>2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?</b>	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	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.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.
<p><i>Score explanation: UNC does not have fellowships for medical students specifically focusing on planetary health/sustainable healthcare. However, there are research opportunities for students to seek out and perform research related to planetary health. UNC's Gillings School of Public Health offers medical students the opportunity to pursue a Masters in Public Health which can include coursework and research that focus on planetary health and/or sustainable healthcare. There is an MPH</i></p>	

*Environmental Health Solutions concentration, but it is less accessible for medical students to complete due to a separate application process and additional graduation requirements. Outside of the MPH degree programs, medical students can also work on research projects through Gillings-affiliated programs (such as the Center for Environmental Health and Susceptibility). The CMSRP (Carolina Medical Student Research Program) is an 8-week summer program that can give students funding for research related to planetary health/sustainable healthcare.*

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

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

*Score explanation: The medical school does not have one centralized web page with specific information related to planetary health or sustainable healthcare. CLEAN UNC has its own webpage as a student organization with information about planetary health and sustainable healthcare, but it is not an official SOM website. UNC SOM websites that include planetary health information and research include [Curriculum in Toxicology](#) and [Collaborative Departments](#), but these are not centrally organized. There is a database for finding research mentors, but as of February 2022, there are only a few projects and mentors that focus on environmental factors affecting pathophysiology of disease and that focus on the built environment or sustainable agriculture impacting disease and nutrition.*

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

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



*Score explanation: There is a student organization with faculty support dedicated to planetary health and sustainability in healthcare at UNC SOM (CLEAN - Climate Leadership and Environmental Action Network). CLEAN Med UNC has an official faculty advisor, and the organization has received encouraging support from some faculty and deans (although not all faculty are on board). CLEAN is also funded annually by the Office of Global Health Education and SOM for projects and scholarships that increase student engagement and learning of global health education and planetary health.*

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

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

*Score explanation: There is no official position for such a student liaison currently.*

**6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)**

1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)

*Score explanation: The Carolina Community Garden is an organic, sustainable garden that hosts workdays for any volunteers - many of which are faculty, staff, and students at UNC. UNC SOM students participate in an annual service day which includes a special medical student workday at this garden. UNC has an ongoing agricultural and educational garden called Edible Campus UNC that students can volunteer at and harvest produce for their own consumption.*

*Students at UNC were invited to a speaker event from CCPS (Carolina Center for Public Service): Climate change, experiential education and civic purpose: A conversation with Michaela Stith, author of Welp: Climate Change and Arctic Identities. UNC SOM's Curriculum in Toxicology and Environmental Medicine also hosts regular seminars on various planetary health topics - for example, air pollution-induced cardiovascular disease.*

*The No Coal UNC is a group that advocates for the use of clean renewable energy at UNC. The group is led by Chapelboro community members. UNC students (including SOM students) attend this group's meetings and anti-coal protests.*

*CompostMates is a UNC-born organization that offers free compost pick-up for people who otherwise can't afford similar services. The organization is funded by a fellowship and allows weekly pick ups of compost to be dropped off at the Edible Campus Gardens or Carolina Community Gardens. The NC Botanical Garden, located in Chapel Hill, offers volunteer opportunities for community members conservation, education, garden maintenance, and more.*

*UNC SOM re-started its Wilderness Medicine Club with a weekend-long trip to western NC that included kayaking, camping, hiking, and educational sessions on wilderness medicine. UNC has an outdoor education center that organizes programs for all UNC students to get outdoors (kayaking, hiking, camping, etc.) and offers outdoor equipment rentals.*

<b>Section Total (10 out of 15)</b>	<b>66.6%</b>
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*Are there additional student-led initiative resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Campus Sustainability

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

1. Does your medical school and/or institution have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation: UNC's Office of Sustainability, <a href="#">Sustainable Carolina</a>, launched in 2020. The office's primary goals are 1) net zero water usage, 2) zero waste to landfills, and 3) net zero greenhouse gas emissions. Sustainable Carolina is led by Mike Piehler, a professor who is extensively involved in sustainability, with faculty and staff from 8 departments and schools and 3 students making up the advisory council. However, there are no representatives from the medical school on the council.</i></p>	

2. How ambitious is your medical school/institution's plan to reduce its own carbon footprint?	
4	The institution has a stated goal of carbon neutrality by 2030 or earlier and the medical school / institution has a well-defined and adequate plan in place to achieve this goal.
3	Yes, there is a stated carbon neutrality goal by at least 2040 and the medical school/institution has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal by at least 2040, but the medical school/institution has not created a plan to reach that goal or the plan is inadequate.
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
0	There is no stated goal for reduction of CO2 emissions.

*Score explanation: UNC plans to reach carbon neutrality by 2040. This goal is supported by several categories and steps to meet the carbon neutrality deadline. The categories with the highest potential for emission reduction include eliminating coal use (~15%), exploring next generation fuels (~34%), procuring renewable energy (21%), purchasing renewable energy certificates (21%), and exploring air travel carbon offsets (10%). More information on the Climate Plan can be found here: <https://sustainable.unc.edu/climate-action-plan/>*

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

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

*Score explanation: UNC is analyzing ways to negotiate renewable energy purchases from Duke Energy; however, they do not currently purchase renewable energy. UNC's [cogeneration facility](#) does convert waste heat from natural gas heating water, which provides 1/3 of the campus's electricity.*

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

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

*Score explanation: The new medical education building [Roper Hall](#), which is planned to be completed in 2022, has been registered for LEED certification. They plan on using “high efficiency heating, cooling and lighting systems and will employ low-flow fixtures and stormwater and condensate harvesting. These features will enable the building to use 30% less energy and 40% less water than the baseline for this building type.” The Mary Ellen Jones building was renovated and received a gold certified LEED NC 2009 rating. Marsico Hall was also constructed to LEED Silver standards. Most older buildings have not been retrofitted to improve sustainability measures.*

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

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

*Score explanation: The town of Chapel Hill offers free public transportation, and their bus system is widely used by students. Students who don't park on campus are eligible for the Commuter Alternative Program, which provides free bus passes for the Triangle bus system. Students who do park on campus generally get around using the bus system, walking, or biking since parking is quite challenging at the University.*

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

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

*Score explanation: Recycling bins can be found throughout the campus. Carolina Dining Services provides compost bins in food service areas which can be accessed by both students and faculty. However, unlike recycling centers, compost centers are not always easily located, nor are they present in every building.*

**7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?**

3	Yes, the medical school 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.
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2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.

*Score explanation: Carolina Dining Services (CDS) provides a [sustainability report](#) annually. It has received a [Gold Award](#) from the Association for the Advancement of Sustainability. However, the main CDS centers are near undergraduate buildings, and few medical students and faculty use these buildings. The medical school dining areas have some food provided by CDS, some of which meets sustainability criteria, but several outside vendors including Chick-fil-A also provide food which does not meet criteria. The medical school is not engaged in efforts to improve the sustainability of food and beverage provided.*

<b>8. Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement?</b>	
3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.

*Score explanation: UNC has published their sustainability procurement procedure on STARS. Guidelines include the following: purchasing environmentally preferable products; housekeeping purchased chemicals should comply with LEED for existing chemicals; IT products should be ENERGY STAR certified; purchased paper should be a minimum of 30% recycled content; among other requirements/suggestions. However, the medical school is not currently engaged in a way to increase sustainability.*

<b>9. Are there sustainability requirements or guidelines for events hosted at the medical school?</b>	
2	Every event hosted at the medical school must abide by sustainability criteria.
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required.
0	There are no sustainability guidelines for medical school events.

*Score explanation: There are no criteria for food provided for medical school events. Food is purchased from local vendors (Mediterranean Deli) and other franchise vendors (Jimmy John's, Insomnia Cookies).*

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

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

*Score explanation: UNC hosts a "[Green Labs](#)" program that works with members of the UNC community to encourage sustainable practices. There have also been a few campaigns to encourage specific types of recycling, including gloves and plastic film.*

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

4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	No, the institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest, but currently still has fossil fuel investments.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

*Score explanation: The [Daily Tar Heel](#) estimates that UNC invests \$420.5 million in fossil fuels. Students and faculty advocated to stop using coal through the "[Beyond Coal](#)" movement on campus in 2010. The "[No Coal UNC](#)" movement has been active with virtual meetings during the COVID-19 pandemic, an in-person and virtual rally on September 10, 2021, and on social media. The university has moved to natural gas and "cogeneration" as a temporary measure while researching other renewable energy sources.*

<b>Section Total (16 out of 31)</b>	<b>51.6%</b>
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*Are there additional sustainability resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*



# 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%

*\*Within each grade bracket, a score in the top 5% (\_5 to \_9%), receives a "+", and a score in the bottom 5% (\_0- \_4%) receives a "--". For example, a percentage score of 78% would be a B+.*

## Planetary Health Grades for the University of North Carolina School of Medicine

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

Section	Raw Score	Letter Grade
<b>Planetary Health Curriculum (30%)</b>	$(29 / 69) \times 100 = 42.03\%$	C-
<b>Interdisciplinary Research (17.5%)</b>	$(14 / 17) \times 100 = 82.35\%$	A-
<b>Community Outreach and Advocacy (17.5%)</b>	$(6 / 14) \times 100 = 42.86\%$	C-
<b>Support for Student-led Planetary Health Initiatives (17.5%)</b>	$(10 / 15) \times 100 = 66.67\%$	B
<b>Campus Sustainability (17.5%)</b>	$(16 / 31) \times 100 = 51.61\%$	C
<b>Institutional Grade</b>	<b>55.22%</b>	<b>C+</b>

# Report Card Trends

## Section Overview

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

