Planetary Health Report Card (Medicine):

University of Virginia

2024-2025 Contributing Team:

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Land acknowledgment:
Please join us in acknowledging the Monacan People as the traditional custodians of the land in and around the lands we are on today. Dispossessed from these lands and continuing to live with that legacy, we pay respects to their elders past and present. Our acknowledgment of the Monacan People reflects a commitment to respect and greater inclusion through a formal recognition of those who were here first and whose continued presence is important to our future.

We also acknowledge and pay respect to the individual lives of the African peoples and their descendants who were forced to dedicate their labor to the construction of what is now the University of Virginia. Scholars estimate that at least 5,000 enslaved Black enslaved laborers worked on the Grounds, with many in residence, starting with the construction of the Lawn in 1817 and lasting through the end of the Civil War in 1865. These enslaved people built and then sustained the everyday life of the University.

These acknowledgments are but one form of a public intervention, but serve a necessary step toward honoring the Monacan People and Enslaved Laborers. We reflect on the injustices committed to these native communities and enslaved peoples. We honor their stories, told and untold, and their descendants past, and leaders, present and emerging.

(Adapted from UVA's Land Acknowledgement statement)

Summary of Findings

Overall Grade	B

Curriculum	B-

- There have been no significant changes since the previous PHRC. However, new learning objectives have been added to different courses in the pre-clerkship curriculum via the climate health thread that directly addresses climate change and environmental health, as well as their relationship to disease. In fourth year, the required Bedside to Community course provides a lecture on climate change and environmental justice and the two-week elective on Climate Change and Health addresses the health impacts of climate change through several lectures.
- **Recommendations:** UVA SOM has made excellent progress over the past few years in adding important climate change-related topics to the curriculum. The next step is to cover these topics more thoroughly in required curricular elements, especially in the pre-clerkship phase. In reference to 1.17, there is opportunity to encourage system leaders to discuss potential environmental impact.

Interdisciplinary Research	A-

- The planetary health interdisciplinary research efforts at UVA are supported by faculty specifically dedicated to facilitating and conducting planetary health research. In addition, an annual symposium held by the UVA School of Nursing further supports planetary health research efforts. Finally, infrastructure exists to facilitate collaboration on climate health-related projects between the school and community members.
- **Recommendations**: The UVA SOM could organize its own conference on planetary health. In addition, community participation in this area of research could be cultivated through the creation of planetary health-specific grants or discussion topics within iTHRIV or other platforms.

Community Outreach and Advocacy	C+

- UVA as an institution holds multiple events for sustainability, particularly Earth Month which is a month-long program with different events about sustainability. UVA SOM does not partner with community organizations, but has participated in feasibility studies with the Fifeville Community Projects and promoted events such the UVA School of Nursing annual conference on climate change and health. The Inova Hospital in Fairfax does provide online resources for patients discussing how climate changes health, but the UVA hospital does not publish any materials. UVA SOM students do not receive regular communications updates related to planetary health or sustainable healthcare.
- **Recommendations**: Send regular communications updates on planetary health to students such as via newsletter and, using Inova Hospital in Fairfax as an example, UVA SOM could publish educational materials on climate and public health.

Support for Student-Led Initiatives	B

- The University of Virginia, as well as the SOM, are home to many student-led initiatives focused on planetary health. Students are provided with opportunities to seek out funding to engage in research and participate in community projects. Additionally, the Health Systems Sustainability Committee offers students a voice in steering institutional decisions regarding sustainability within the hospital system.
- **Recommendations**: The UVA SOM could offer additional avenues for funding and connecting with faculty mentors to encourage student participation in research efforts. Although there are some opportunities at UVA to engage with the local community, the SOM could host more events led by members of the local community that emphasize how planetary health intersects with the health of local communities.

Campus Sustainability	B+

- UVA and the School of Medicine have made some progress in their campus sustainability goals. There is increased access to composting and some sustainability guidelines for Zero Waste events compared to the PHRC from last year. UVA has continued its use of improving old buildings, making new buildings LEED certified, encouraging recycling, and eco-friendly transportation. The biggest deficits in scoring for this section are UVA's reliance on fossil fuels for heating and cooling, and still having investments in fossil fuel companies.
- **Recommendations**: UVA needs to allocate more resources to renewable energy sources, both to supply the university and in its portfolio. Without making these changes, UVA may not reach its 2030 target of carbon neutrality.

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 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 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) medical 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 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.

- **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 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.

- **Core Curriculum:** This refers to taught material that is develiered 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.

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

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

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

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

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

- **Anthropogenic:** Created through human activity

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

Other considerations:

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

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

Planetary Health Curriculum

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

Curriculum: General

1.1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
Yes, the medical school has offered **more than one** elective whose primary focus is ESH/planetary health in the past year. (3 points)	
Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year. (2 points)	
The medical school does **not** have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a **lecture** on planetary health. (1 points)	
No, the medical school has **not** offered any electives on planetary health or electives that include ESH/planetary health topics in the past year. (0 points)	
Score Assigned:	2
Score explanation: UVA offers a two-week elective, Climate Change and Health, designed for fourth-year medical students. First introduced in 2022 through collaboration between students and faculty, the course has been offered annually and consistently reaches its capacity of 25 students. The curriculum features lectures by experts on topics ranging from infectious diseases to extreme weather events, complemented by self-directed learning and group discussions. The course concludes with a capstone project and an Advocacy Day, where students engage with Virginia state legislators.	

Curriculum: Health Effects of Climate Change

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

This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: The pre-clerkship core curriculum at UVA includes a few learning objectives that briefly address the health risks associated with extreme heat and climate change. In the Intro to MBB: The Nervous System lecture, the associations between extreme temperature fluctuations and the incidence of strokes and migraines are highlighted. The Overview of the Cardiovascular System lecture discusses the link between climate change, extreme heat events, and the resulting shifts in cardiovascular disease epidemiology. In 2024, three new learning objectives that specifically mention extreme heat as a risk factor for developing acute kidney injury and chronic kidney disease were introduced. However, this content was not reflected in the lectures or in the associated lecture resources. *The required fourth-year Bedside to Community (B2C) course contains a lecture entitled Climate Change, Health, and Physician Advocacy that addresses the potential health consequences of extreme heat. Additionally, this topic is further explored in the fourth-year Climate Change and Health elective, specifically during a session on Extreme Heat and Severe Weather.*	

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: The UVA core pre-clerkship curriculum addresses the health impacts of climate change and extreme weather through several lectures. The Life Cycle lecture during the Foundations of Medicine block briefly covers the risks posed by extreme weather events and pollution on the health of children. The physiologic changes that climate change can contribute to in the elderly were mentioned in a session called Aging and Loss. The role of extreme weather and pollution in the development of respiratory conditions, specifically asthma, was discussed in the Climate Change and Respiratory Health lecture. The impacts of extreme weather events on individual health is covered in depth in the fourth-year Climate Change and Health elective.	

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
Score explanation: In the Cells, Blood, and Cancer pre-clerkship block, a lecture entitled Transfusion III: Adverse Events in Transfusion includes one learning objective discussed in class that briefly explores the impact of vector-borne illnesses on the blood supply and how the geographical reach of these diseases is expanded by climate change. The Microbes and the Immune System block, however, did not include any discussion about the effect of environmental factors on the changing patterns of infectious diseases. Optional pre-class material on environmental factors influencing disease transmission including temperature, humidity, altitude, housing density, and air pollution were mentioned in relation to epidemic outbreaks, but this was not explicitly taught or discussed during the core required coursework. *This topic is covered extensively in the session entitled "Infectious Diseases" in the fourth-year Climate Change and Health elective.*	

1.5. Does your <u>medical school</u> curriculum address the respiratory health effects of climate change and air pollution?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Score explanation: In the pre-clerkship pulmonary system block, the topic of climate change and respiratory health is explored extensively in a 50 minute lecture entitled, Climate Change and Pulmonary Disease. This session focuses exclusively on the science of climate change as well as its effects on respiratory health. The learning objective: "Explain how and why social and environmental factors contribute to asthma disparities in the United States" was also covered in a lecture about the clinical approach to asthma. This topic is additionally covered in the Air Pollution and Increasing Allergens session offered as a fourth-year elective, as well as in a required session titled Climate Change, Health, and Physician Advocacy that was a part of the required Bedside to Community course for fourth year students.	

1.6. Does your <u>medical school</u> 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:	2
Score explanation: In the pre-clerkship core curriculum, the Overview of the Cardiovascular System lecture had three slides discussing the effects of heat exposure on the cardiovascular system, the increasing frequency/intensity of extreme heat events due to climate change, and the relationship between extreme heat and cardiovascular mortality. The topic was further addressed in the Renal System block, which added several new learning objectives in 2024 discussing the impact of extreme heat events on the increased risk for pre-renal acute kidney injuries, rhabdomyolysis, and chronic kidney disease. Additionally, the required pre-clerkship Foundations of Medicine block featured a lecture, Aging and Loss, that briefly discussed why the elderly are more susceptible to exacerbations of cardiovascular disease caused by extreme heat. *This topic was additionally briefly addressed in the Climate Change, Health, and Physician Advocacy session that was a part of the required Bedside to Community course for fourth year students.*	

1.7. Does your <u>medical school</u> 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:	2
Score explanation: The required core curriculum course Mind Brain and Behavior had multiple learning objectives and materials that discussed the impact of climate change on mental health and neurologic disease. One learning objective specifically addressed the mental health consequences of major weather events linked to climate change. However, these were covered very briefly in class. The topic is additionally covered in a lecture titled Mental Health and Stress-Related Disorders in the fourth year elective class.	

1.8. Does your medical school 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:	2
Score explanation: The pre-clerkship unit on gastroenterology has a single learning objective on the impact of climate change and pollution on food and water and the associated impact on children. However, it is only briefly touched on and does not have a lecture and/or inter-lecture thread focused on the relationship during the six weeklong course, despite numerous nutrition lectures that could readily integrate the topic. The topic is discussed more in depth during the fourth year elective "Climate Change and Health". *Relevant Learning Objectives:* *Describe how the supply and safety of food and water is impacted by climate change and pollution and explain how this impact affects children's health and development. (Gastrointestinal System)*	

1.9. Does your medical school 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:	2
Score explanation: The pre-clerkship unit on pulmonology has a lecture titled "Climate Change and Pulmonary Health", with a powerpoint that touches on the outsized impact of climate change on the elderly, children, racial/ethnic minorities, and low SES status. Additionally, during the required Bedside to Community course at the beginning of fourth year, the sixth day of the course is focused on health equity and discusses increased exposure to pollution, including factory waste, in marginalized populations. Finally, this topic is discussed throughout the "Climate Change and Health" elective during fourth year. *Relevant Learning Objectives:* *Define climate change and identify how it affects vulnerable populations. (Pulmonology Lecture: Climate Change and Pulmonary Health)* *Discuss the disproportional impact of climate change on vulnerable populations. (Climate Change and Health)*	

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:	1
Score explanation: The core pre-clerkship and clerkship curriculum do not directly address the unequal regional health impacts of climate change. The unequal health impacts of climate change is addressed directly in the fourth year elective "Climate Change and Health", with Day 7 dedicated to discussing vulnerable populations, including vulnerability by region, and one lecture on Day 3 addressing forced migration. The elective "Global Health, Human Rights, and the Social Determinants of Health" also has readings and a lecture addressing the rights and health needs of climate migrants. The relevant course learning objectives are listed below. *Relevant Learning Objectives:* *Discuss the disproportional impact of climate change on vulnerable populations. (Climate Change and Health)* *Discuss the impact of climate on human migration and international efforts to address the human rights of climate migrants. (Global Health, Human Rights, and the Social Determinants of Health)*	

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:	2
Score explanation: Pre-clerkship students during the endocrine/reproductive unit were required to watch a student-made pre-recorded lecture discussing the impact of extrinsic factors such as toxins on reproductive health. The topic was not a part of the daily live lectures by professors. *Relevant Learning Objectives:* *Describe the relationship between endocrine disrupting chemicals (eg. per- and polyfluoroalkyl substances or PFAS) to obesity, diabetes, reduced male fertility and PCOS.* *(Endocrine/Reproductive System)*	

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:	2
Score explanation: The Climate Change, Health, and Clinician Advocacy lecture in the required Bedside to Community course for fourth year students briefly describes the different ways in which climate change affects health in the Southeast as well as specifically in Virginia. Additionally, the Climate Change and Health elective addresses the threads of environmental justice and the disproportionate impact of climate change on vulnerable populations locally and globally. Furthermore, there are the following related learning objectives for the elective: 1. *Evaluate the current approaches to waste in health care systems.* 2. *Appraise where the UVA Health System is doing well and where it could improve.* 3. *Create opportunities to advocate for climate health solutions in your community.* 4. *Recognize the landscape of climate policy in Virginia and how you can elevate your impact, understanding the trusted and privileged role of the physician.*	

1.13. To what extent does your <u>medical school</u> emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
This topic was explored **in depth** by the **core** curriculum. (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: As a part of our Social Issues in Medicine course, there is an annual lecture on Indigenous health. While Indigenous knowledge as it pertains to planetary health was not explicitly covered, we discussed the negative impacts of US policies on tribal communities' diets and water supply. *Additionally, there was an optional lunchtime lecture with indigenous health professionals in which they discussed native knowledge systems on botanical medicine. However, this conversation also did not directly involve a discussion of planetary health solutions.*	

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?	
This topic was explored **in depth** by the **core** curriculum. (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
Score explanation: During a required lecture in the Bedside to Community course for fourth year students titled "Inequities in US Healthcare," climate change and environmental impacts on marginalized populations were discussed in the context of a young man's story of his childhood asthma. Multiple infographics depicting the intersectionality of race, income and housing location were used to discuss the higher rates of asthma seen within their community. Another lecture for upper-years in the required Bedside to Community course addressed the issue of unequal exposure to factory waste among residents of lower socioeconomic areas, and how this exposure directly influences life expectancy. Finally, there is one learning objective in UVA's Climate Change and Health Elective offered to M4s which states: *1. Understand how human-produced air pollutants disproportionately impact vulnerable regions and populations.* *Significant advances have not been made since last year's report.*	

Curriculum: Sustainability

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

Score explanation: There were 2 learning objectives in the core curriculum, one of which has been newly added in 2024, that address the relationship between dietary choices, climate change, health, and related issues as seen below. There was a recommended nutrition lecture in the M1 Gastrointestinal unit as well as a lecture in the M2 Cardiovascular unit that discussed co-benefits of a plant-based diet. Additionally, UVA's Climate Change and Health elective offered to M4s requires a pre-class reading titled "Deforestation, Agriculture, and Diet Are Fueling the Climate Crisis" that explains the benefits of a plant-based diet.

1. *Explain what a plant-based diet is. Describe the benefits of a plant-based diet for health and society (e.g. impact on climate change) and the barriers to the option of a plant-based diet.*
2. *Describe how the supply and safety of food and water is impacted by climate change and pollution and explain how this impact affects children's health and development.*

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
Score explanation: This topic was not expressly covered in the preclinical curriculum. While the "Foundations of Clinical Medicine" course discusses the importance of trying to select high value care and keep in mind resource use and cost when ordering imaging and labs to work up patients, there could be a stronger emphasized tie to climate and global health concerns. In Phase 3 of the curriculum, M4s take a required Bedside to Community course in which this topic is briefly covered during the Climate Change, Health, and Physician Advocacy lecture. During this lecture, there are two slides that include a brief discussion of the magnitude of CO2 pollution and greenhouse gas emissions by the healthcare sector. Additionally, there are extra opportunities for M4s to further explore this topic in the Climate Change and Health elective. This elective includes independent learning activities and lectures on the science of climate change and sustainability in healthcare which address the impact of greenhouse gas emissions, the role of healthcare in contributing to pollution, and ideas for reducing emissions by healthcare systems.	

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)	2
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 anesthesia'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
Score explanation: There is a required lecture series for M1s on high-value care and the benefit of reducing excess medical tests, though this largely focuses on cost reduction and resource sharing between patients in need. During our Transitions to Clerkship course, third year medical students (M3s) are required to watch a pre-recorded lecture titled "EPA 3" that discusses and encourages students to recognize wasteful practices in the healthcare system leading to low-value care and increased physical waste. *In addition to didactic material, students are presented with patient cases on a weekly basis in their "Foundations of Clinical Medicine" course where part of the decision making process includes the cost component of each lab requested and whether it meets the threshold of high-value care.* *In regard to the benefits of non-pharmaceutical management of diseases, a seminar series about the impact of exercise and yoga on mental health in medical school is a required course during the second year. There is also an additional lecture discussing the importance of non-pharmaceutical management of type 2 diabetes. While health benefits were discussed, the potential impact of this non-pharmaceutical management on the environment was not emphasized.* *The topic of efficient use of healthcare is also touched upon in the Bedside to Community course, which is a health policy and public health course that lasts 10 days and is required for all rising M4s. However, the course did not explicitly discuss the impact of healthcare waste on the environment or ways to mitigate that effect.* *Lastly, the impact of anesthetic gasses on the healthcare carbon footprint is discussed in a required reading during the 3rd year of medical school during the Anesthesia rotation.*	

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 **not** strategies introduced for having conversations with patients about climate change. (0 points)

Score Assigned:	1
Score explanation: The Climate Change and Health elective at UVA equips participating students with the knowledge and skills to talk to patients about the health effects of climate change, though enrollment is limited to 25 students. In the core curriculum, we are increasingly well-equipped with knowledge of how climate change is impacting the prevalence or management of disease, which hopefully can be used to counsel and inform our future patients.	

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
Score explanation: At the University of Virginia School of Medicine, in the Foundations of Clinical Medicine (FCM) course which meets weekly in the afternoons to review fundamental clinical skills, students are trained to take an environmental and exposure history as part of the full social history in Phase 1. This knowledge is further reinforced through future rotations across Phase 2 and 3, including pulmonology, urology, anesthesiology, and pediatrics.	

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:	4
Score explanation: University of Virginia School of Medicine has made significant changes to the core curriculum to implement climate health related topics across various classes. We received approval for a Climate Health and Sustainable Healthcare curricular thread, headed by Dr. Matthew Meyer in 2023. This is an effort that has been championed by both student and faculty advocates. As reflected in the questions above, there has been a major effort to integrate this content into each part of our curriculum. Nearly every major system within the initial pre-clerkship year includes topics related to climate health, and numerous 3rd and 4th year rotations have core material addressing some of the topics mentioned previously. In the year 2024, UVA has made	

major improvements to ESH/planetary health education, with the most notable being the creation of a new phase 3 elective exclusively devoted to these subjects. See below (1.21 score explantation) for more information on the recent changes to the curriculum.

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:	4
Score explanation: In 2023, a climate curriculum thread was developed to ensure longitudinal and appropriately integrated ESH/planetary health materials into the core curriculum. Efforts are ongoing to ensure that there is appropriate content related to planetary health in each preclinical block, as well as throughout every phase of medical education. Many faculty members have already worked to integrate this material. Some examples of this integration discussed and approved at the curriculum committee meeting include adding learning objectives in the curriculum during each of the three phases on climate change, impacts on health, pollution, infectious disease patterns, skin cancer, rheumatic diseases, food and water supply, children's development, mental health, cardiovascular care, plant-based diet, vulnerable conditions, chronic illnesses, maternal/fetal outcomes, and advocacy throughout lectures and grand rounds. *In addition, an ongoing CE elective on "Climate Change and Health" offers students a chance to learn about science behind climate change, air pollution and increasing allergens, water quality and sea level impacts, infectious diseases, extreme heat and severe weather, water and food security impacts and environmental degradation, sustainability in healthcare, mental health and stress-related disorders, advocacy, and student selected topics, culminating on an advocacy day trip to Richmond, VA at the end of the rotation.* *However, more work is needed to ensure these learning objectives are addressed in lectures across systems and that the teaching is emphasised enough to be memorable to students.*	

1.22. Does your medical school employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?	
Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)	
No, the **medical school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)	
Score Assigned:	1
Score explanation: As of 2023, Dr. Matthew Meyer was appointed as Chair of the climate curriculum thread, and is specifically responsible for overseeing curricular integration of ESH/planetary health topics into the curriculum.	

Section Total (45 out of 72)	**62.5%**

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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: The UVA Environmental Institute (EI) supports transdisciplinary research and training at the intersection of environmental changes and human well-being and sponsors a number of studies conducted by faculty members across the UVA School of Medicine. Current research conducted by School of Medicine faculty and supported by the EI include the following:

- *The Impact of Weather and Climate on Hospital and Emergency Department Admissions in Virginia*
- *Climate and Enteric Infectious Disease Risk and Vulnerability*
- *Climate and Health in Virginia: Investigating Underlying Causes of Climate-Related Diseases and Disparities*

Faculty listed in the Expert Directory of the EI are open to collaboration or have collaborated with other researchers on EI projects such as the ones listed above related to environmental resilience or sustainability research.

In addition to the EI initiatives above, other researchers have been leading UVA Health in the SPRINGS Consortium, an international partnership led by the Amsterdam Institute of Global Health and Development and Amsterdam UMC. The aim of the work is to identify how climate change and shifting weather patterns have affected the spread of pathogens that commonly cause childhood diarrhea.

Within the EI, there are other initiatives that research the relationship of human well-being and the environment such as the Center for Health and Design, an initiative out of the School of Architecture. This center aims to understand the relationship between built environments and

human health and well-being, and promotes research that investigates improving building design to promote health and combat the effects of climate change.

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
Score explanation: UVA Environmental Institute (EI) is the primary department that works across schools, including UVA School of Medicine, to promote planetary health research. The mission of EI is to support interdisciplinary research and training that is both "great and good" at the intersection of environmental change and human well-being by connecting faculty, students, and citizens to create solutions for a more equitable, resilient, and sustainable future. *Within the School of Medicine itself, there is not a specific department/center that promotes planetary health research.*	

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:	1
Score explanation: The iTHRIV program (integrated Translational Health Research Institute of Virginia) helps to increase connections between researchers and community members. It provides a platform through which community members could provide impact on climate health related	

research via participation in the iTHRIV Community Advisory Board or "Community Engagement Studios." Additionally, iTHRIV is expanding opportunities for community groups to request iTHRIV resources and services in order to address specific research questions. However, to date, there has not been any specific community engagement tailored to populations impacted by environmental injustice. In September, 2023, iTHRIV and the UVA School of Medicine co-hosted a Climate and Health Research Workshop to try to strengthen this collaboration with climate-interested researchers. A similar event was not held in 2024.

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 UVA Sustainability website comprehensively includes information about events, student organizations, and funding opportunities related to sustainability . The website also links to the Environmental Institute, which lists affiliated faculty involved in environmental health across a variety of disciplines.	

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:	3

Score explanation: The University of Virginia School of Nursing Continuing Education, along with the Virginia Clinicians for Climate Change (VCCA) and the University of Virginia Environmental Institute, hosted their fourth annual "Protecting Health in a Changing Climate: Rising Heat and Health in Virginia" conference on April 13-14th, 2024.

University of Virginia's Environmental Institute in collaboration with other institutions including the SOM hosted a Climate and Health Workshop (Climate and Health Research Workshop | Environmental Resilience Institute | ERI (virginia.edu)) in 2023 and continues to host similar events in lecture series, with the most recent topics including thriving in a changing climate, climate collaboratives, climate change/displacement/migration, disproportionate health burdens, and extreme weather events.

2.6. Is your institution a member of a national or international planetary health or ESH/ESV organisation?	
Yes, the medical school is a member of a national or international planetary health or ESH organization (1 points)	
No, the institution is **not** a member of such an organisation. (0 points)	
Score Assigned:	1

Score explanation: The University of Virginia School of Medicine is a member of the SPRINGS International Consortium and the Global Consortium on Climate and Health Education. UVA is also a member of Practice Greenhealth since 2022, a membership and networking organization for sustainable health care, and was recently recognized for efforts on reducing OR waste - "Greening the OR Recognition Award."

Section Total (14 out of 17)	**82.4%**

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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 institution partner with community organisations to promote planetary and environmental health?	
Yes, the **institution** meaningfully partners with **multiple** community organisations to promote planetary and environmental health. (3 points)	
Yes, the **institution** meaningfully partners with **one** community organisation to promote planetary and environmental health. (2 points)	
The institution does not partner with community organisations, but has participated in community focused events relating to planetary health. (1 point)	
No, there is **no** such meaningful community partnership. (0 points)	
Score Assigned:	3
Score explanation: UVA was originally involved in the Fresh Farmacy program that ended in 2024. UVA is currently involved in feasibility studies with Fifeville Community Projects that are meant to improve community resources like wellness. *UVA also hosted an Earth Month in April where events such as Clothing Swaps, a Carnival Market with local vendors, and more. UVA is also part of the Resilient Together initiative which partners with several organizations in Albemarle county and the city of Charlottesville to conduct community workshops about climate resiliency. UVA also sponsored Bike to Work Week at UVA grounds which is part of the larger Charlottesville Bike Month, to support biking in the city. Finally, UVA frequently sends students from UVA SOM to the VCCA Climate Advocacy day where students can learn to talk to lawmakers in the state legislature about climate legislation.*	

3.2. Does your institution offer community-facing courses or events regarding planetary health?
The **institution** offers community-facing courses or events at least once every year. (3 points)
The **institution** offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. (2 points)

The institution has promoted community-facing courses or events, but was not involved in planning those courses or events. (1 point)	
The **institution** has not offered such community-facing courses or events. (0 points)	
Score Assigned:	2
Score explanation: As explained above in the score explanation for question 3.2, UVA helps organize and host events during Earth Month, such as the Cville Carnival Market, Hoo's Cooking, and Clothing Swap to name a few. While Earth Month is available to the public, it seems to be geared more towards students at UVA.	

3.3. Does your institution have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)	
Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. (1 point)	
Students do not receive communications about planetary health or sustainable healthcare. (0 points)	
Score Assigned:	0
Score explanation: UVA SOM students do not currently receive regular communication updates regarding planetary health or sustainable healthcare from the UVA School of Medicine or the UVA Office for Sustainability. A potential source of sustainable healthcare updates could come from the Health System Committee on Sustainability. This committee currently has yearly updates that are posted on the UVA Sustainability website and committee membership is open to SOM students.	

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 provider. (1 point)	
There are **no** such accessible courses for post-graduate providers. (0 points)	
Score Assigned:	2

Score explanation: UVA School of Nursing hosted a conference on Protecting Health in a Changing Climate: Rising Heat and Health in Virginia, which took place in April 2024. The conference was targeted for MDs, RNs, PAs, and medical students. In December, 2024, there was a Seminar on Climate Change in Healthcare hosted by Kimberley R. Barker with a focus on worsening air quality and increasing respiratory illness and infectious disease with increasing climate change. (1 CME Credit)

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 medical centres have accessible educational materials for patients. (0 points)	
Score Assigned:	0
Score explanation: UVA health and the affiliated Inova Hospital do not have patient educational resources related to environmental exposures to pollutants, chemicals, or pesticides.	

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 **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:	1
Score explanation: The Inova Hospital in Fairfax has online resources for patients depicting the effect of climate change on the pediatric and elderly population, as well as on heart and lung health. However, UVA hospital does not publish any accessible education materials on the intersection between climate change and health for patients.	

Section Total (8 out of 14)	**57.1%**

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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 institution offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the institution *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)	
The **institution** encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate. (1 point)	
No, the institution does not offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	2
Score explanation: Since 2011, the GIFT (Green Initiatives Funding Tomorrow) Grant, funded by the Student Council's Sustainability Committee with assistance from the Office of the Dean of Students, has provided tens of thousands of dollars for student sustainability initiatives to solve sustainability challenges on Grounds through innovation and creativity. Additionally, the Jefferson Trust has funded several projects related to sustainability including solar and environmental education. The University of Virginia Environmental Institute also offers Spark Grants which provides seed funding for interdisciplinary teams who conduct solutions-focused research on specific sustainability-related issues.	

4.2. Does your institution offer opportunities for students to do research related to planetary health and/or sustainable healthcare/vetcare?	
The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare/vetcare research. (2 points)	
There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these require student initiative to seek these out and carry them out in their spare time. (1 point)	
There are **no opportunities** for students to engage in planetary health/sustainable healthcare research. (0 points)	
Score Assigned:	1

Score explanation: The University of Virginia Environmental Institute offers interdisciplinary research programs related to planetary health and climate change. These include a ten-week Summer Internship Program on real-world applications of environmental research, the Decarbonization Corps Spring internship on the impact of carbon emissions, and the Environmental Futures Fellows program which offers grants up to $8,000 for sustainability research projects. However, while these programs are described as open to students of all disciplines, the language on the website describing these programs suggests they are more targeted for "undergraduate, Masters, and PhD students."

4.3. Does the institution have a webpage where students can find specific information related to planetary health and/or sustainable healthcare/vetcare activities and mentors within the institution? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)	
There is an institution 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: UVA School of Medicine's Student Clinicians For Climate Action website has been active since 2022 and includes details on current initiatives, completed projects, and resources to local and national sustainability programs and organizations. However, the website does not provide contact information for potential mentors.	

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

Score explanation: UVA School of Medicine continues to have an established interdisciplinary group of Student Clinicians for Climate Action (SCCA) aimed at advocating for planetary health and sustainable healthcare. We have an official faculty advisor, funding through the School of Medicine student government, and mentorship by the state group Virginia Clinicians for Climate Action. We also have registered Contracted Independent Organization status at UVA.

4.5. Is there a student liaison representing sustainability interests who serves on a department or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	1
Score explanation: There are multiple medical student representatives on the Health Systems Sustainability Committee.	

4.6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	**Score**
Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.	**1**
Panels, speaker series, or similar events related to planetary health that have students as an intended audience.	**1**
Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.	0
Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	0
Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.	0
Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	**1**

Score explanation: Outside of the medical school, the University offers programs related to organic agriculture and sustainable food systems through the Office for Sustainability such as a community garden and courses through Morven Farms. The UVA Sustainable Food Collaborative also offers projects and grant-funded opportunities for students to become involved with food justice and food sustainability.

There are no substantial opportunities for panels, speaker series, or events outside of the curriculum hosted by the medical school. Infrequently, there are Medical Center Hour presentations that address planetary health. The School of Nursing frequently hosts a "Human Health in a Changing Climate" event with panelists and speakers. In the School of Medicine's preclinical curriculum, there are new learning objectives that specifically address planetary health and climate change. Additionally, there are guest speakers that introduce 3rd year students to planetary health during intersession lectures.

There have not been cultural events sponsored by either the medical school or the university to celebrate planetary health. Charlottesville boasts many local organizations willing to accept student participants, however the School of Medicine does not sponsor opportunities to partner with these organizations.

Both the Wilderness Medicine Interest Group and Outdoor Adventures Club host outdoor programs such as hiking and climbing. Furthermore, the UVA School of Medicine student government organizes community-building hikes and a weekend-long camping excursion for first-year students. Additionally, there is a wilderness medicine 4th year elective that incorporates hiking and other outdoor activities into its curriculum.

Section Total (10 out of 15)	**66.7%**

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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 institution have an Office of Sustainability?	
Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital. (3 points)	
There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of hospital sustainability. (2 points)	
There are no salaried sustainability staff, but there is a sustainability task force or committee. (1 point)	
There are no staff members or task force responsible for overseeing campus sustainability. (0 points)	
Score Assigned:	3
Score explanation: UVA has an Office of Sustainability established in 2013 which supports university-wide sustainability efforts. A special projects coordinator and sustainability strategic planner are assigned to the health system.	

5.2. How ambitious is your institution's plan to reduce its own carbon footprint?	
The institution has a written and approved plan to achieve carbon neutrality by 2030 (5 points)	
The institution has a written and approved plan to achieve carbon neutrality by 2040 (3 points)	
The institution has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate (1 point)	
The institution does not meet any of the requirements listed above (0 points)	
Score Assigned:	5
Score explanation: UVA SOM is included in the 2020-2030 Sustainability Plan. The plan includes multiple goals, including reaching carbon neutrality by 2030 and being fossil fuel free by 2050,	

with strategic action plans that build off of the 2016-2020 Sustainability Plan. The UVA sustainability office releases annual summary and greenhouse gas reports to present quantitative details regarding the progress towards achieving these goals.

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: Most SOM buildings receive energy in the following forms: electricity, district chilled water, district heating water and steam, and/or natural gas. District chilled water is an efficient way to provide cooling to many buildings at the same time. Likewise, district heating water and steam are also pumped to many SOM buildings for heating. In the case of heating water and steam, the major inputs there are natural gas and coal from the UVA Main Heat Plant. About two thirds of the energy provided to SOM is electricity or chilled water (generated from electricity). UVA procures about 20% of its electricity from off-site solar facilities. This means that ~13% of the energy delivered to the SOM is renewable energy.	

5.4. Are sustainable building practices utilised for new and old buildings on the institution's campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
Yes, sustainable building practices are utilised for new buildings on the institution's campus and the majority of old buildings have been retrofitted to be more sustainable. (3 points)	
Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have not been retrofitted. (2 points)	
Sustainable building practices are inadequately or incompletely implemented for new buildings. (1 point)	
Sustainability is not considered in the construction of new buildings. (0 points)	
Score Assigned:	3
Score explanation: All new building projects are required to be LEED certified. Claude Moore Medical Education Building is one of 87 LEED projects at UVA. The library has been updated to	

be more energy efficient with lighting and HVAC systems. Several other buildings in which the SOM has space have also received energy efficiency upgrades, including Pinn Hall and MR-4. There is a large Smart Labs energy efficiency retrofit nearing completion at MR-4 which is one of the largest building-wide efficiency efforts to date at UVA, with a similar project now underway in the building MR-5. These projects will reduce energy usage by approximately 30% per building.

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: The Charlottesville Area Transit (CAT) bus system offers free fares to UVA students in arrangement with the university. The institution also offers the University Transit System (UTS) for free, which is available for transportation to health system buildings. The CAT utilizes diesel-electric hybrid buses in their fleet. UVA's UTS system recently purchased five all-electric buses in the summer of 2024, which should enter service in the 2024-2025 school year. Additionally, the "Wahoo Commute" program, which incentivizes UVA staff and employees to utilize alternative modes of commute, went live at the start of the 2024 academic year. UVA plans for full transit fleet electrification in the future, achieving carbon neutrality by 2030 and emissions-free by 2050.	

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: UVA has recycling programs accessible to students and faculty including aluminum and other metals, cardboard, electronics, glass, plastics (1-7), and white and mixed office paper. Recycling is available in resident halls, educational buildings, and faculty offices. The UVA office of sustainability also assists in providing Zero Waste events.

The Reusable Office Supply Exchange (ROSE) programe store collects gently used office materials from UVA departments to provide to the local community for free. In addition, the Merci program serves to recycle medical supplies and provide unused supplies to local organizations.

Compost has also been made more accessible for students and faculty. UVA partners with Black Bear Composting to collect compost on Grounds. Students and faculty can drop off compost at Zero Waste Stations at various places on Grounds that are accessible 24/7. Compost bins are also available in certain dining locations and dorms.

5.7. Does the institution apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
Yes, the institution has a**dequate s**ustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability. (3 points)	
There are sustainability guidelines for food and beverages, but they are insufficient or optional. The institution is engaged in efforts to increase food and beverage sustainability. (2 points)	
There are sustainability guidelines for food and beverages, but they are **insufficient or optional.** The institution is **not** engaged in efforts to increase food and beverage sustainability. (1 point)	
There are **no** sustainability guidelines for food and beverages. (0 points)	
Score Assigned:	2

Score explanation: The UVA Sustainable Food Collaborative has implemented food-related sustainability goals in UVA's 2020-2030 Sustainability Plan. Some of these goals include increasing sustainable food and beverage purchases by 30% by 2030 for UVA dine and UVA overall, reducing the volume of food waste sent to landfills from dining operations and expanding composting and recycling initiatives for on-Grounds events by 2030, creating data-informed policies and programs to promote food equity and security at UVA, enhancing awareness of sustainable and equitable food systems, empowering individuals to make informed choices and engage in meaningful participation, collaborating with community-led food justice initiatives by offering support, skills, and resources to help advance their goals.

UVA also partners with Morven Programs and Kitchen Garden to increase the number of plant-based meals in UVA dine. The Sustainable Food Action plan also includes purchasing food from historically marginalized farmers of color and Black and Brown businesses. Altogether, UVA is striving to increase the amount of Virginia-grown and produced food.

In 2023, 37% of food and beverage purchased at UVA Dine, UVA Health, and the Darden School of Business was sustainable according to the Advancement for Sustainability in Higher Education criteria.

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:	2
Score explanation: UVA has the Green Workplace Program which provides recommendations for UVA employees, including UVA health, to engage in sustainable supply procurement and receive a Green Workplace Certification. The guidelines for a Green Workplace include education and awareness, reminder signage, energy and water, waste reduction, social equity and health, and ongoing communications. In addition to the Green Workplace Program, UVA's 2030 Sustainability Plan highlights their commitment to reducing single-use plastics on Grounds by not purchasing, selling or distributing certain single-use plastics when there are alternatives. These plastics include single-use plastic and polystyrene food service containers, single-use disposable plastic straws and cutlery, single-use plastic water bottles, and disposable plastic shopping bags. These regulations apply to purchases using University funds, all organizations associated with the university and/or operating on grounds, and all events on Grounds or University-owned buildings. This Waste Minimization and Landfill Diversion policy applies to the Medical Center as well.	

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?	
Every event hosted at the institution **must** abide by sustainability criteria. (2 points)	
The institution strongly recommends or incentivizes sustainability measures, but they are not required. (1 point)	
There are **no** sustainability guidelines for institution events. (0 points)	
Score Assigned:	1
Score explanation: There are no published sustainability criteria that events hosted at the medical school are required to abide by. The greater Office of Sustainability encourages minimizing waste during events held across UVA, and has a Zero Waste Events Guide available on their website to advise those planning events at UVA. Use of compostable products has largely replaced single use plastics, and as of 2024, initiatives have reportedly reduced total waste by 36.8% compared to	

before 2010. In 2023, 38.6% of total waste was diverted from landfills. There is a UVA-wide policy banning the use of certain single-use plastics (bottled water, plates, cups,cutlery, bags) that all events must abide by, including events held at the SOM. The published guidelines include suggestions and resources that can be requested to make an event zero-waste, but there are no SOM guidelines or incentives to encourage conducting events in the manner suggested in the guide.

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 SOM is involved in the Green Labs program that awards certifications to labs that meet sustainability goals related to cold storage, chemicals & reagents, electronics & appliances, materials & refuse, and engagement. Labs at UVA can apply for a Green Labs certificate. In 2023, the program reportedly decreased CO_2e emissions and energy use by 22% by engaging with over 450 principal investigators across the university. In 2022, 25 labs at UVA won the "Top Academic Organization Award" in the International Freezer Challenge. The challenge, hosted by Green Labs and the International Institute for Sustainable Laboratories, promotes increased energy efficiency in cold store management.	

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:	2

Score explanation: As of 2024, UVA's endowment was not divested from fossil fuels. A student-led coalition called Divest UVA is advocating for UVA's divestment from fossil fuels. The University Investment Management Co. 's (UVIMCO) Investor Responsibility Framework and Fossil Fuel Investment Principles include a formal commitment to transitioning the University's endowment to net-zero emissions by 2050, if not sooner. In 2024, they report adding $107M "in new commitments to climate solutions investments" and a total of $308M allocated to environmental impact focused funds.

Section Total (24 out of 32)	**75%**

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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%

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(45/72) x 100 = 62.5%	B-
Interdisciplinary Research (17.5%)	(14/17) x 100 = 82.4%	A-
Community Outreach and Advocacy (17.5%)	(8/14) x 100 = 57.14%	C+
Support for Student-led Planetary Health Initiatives (17.5%)	(10/15) x 100= 66.7%	B
Campus Sustainability (17.5%)	(24/32) x 100 = 75%	B+
Institutional Grade	**67.97%**	**B**

Report Card Trends

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