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# Planetary Health Report Card (Medicine): *University of Virginia*

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2023-2024 Contributing Team:

● Students: Aly Dwight\*, Marcelo Sanabria\*, Nicholas Underwood\*, Farah Contractor, Jessica Bryant, Thi Nguyen, Meg Hofstedt, Moritz Lange, Vishal Reddy, Initha Setiady, Maya Parker, Lucy Miao

Faculty Mentors: Homan Wai, MD

● \*Primary Contact: Aly Dwight, [ewd6vs@virginia.edu](mailto:ewd6vs@virginia.edu); Marcelo Sanabria, [qkp6fj@virginia.edu](mailto:qkp6fj@virginia.edu); Nicholas Underwood [nru3ej@virginia.edu](mailto:nru3ej@virginia.edu)

## Summary of Findings

Overall	B-
<u>Curriculum</u>	B-
<ul style="list-style-type: none"> <li>• A major advancement since the previous PHRC was the addition of a climate health thread throughout the preclinical curriculum. This facilitated the addition of learning objectives among different courses that directly addressed climate change and environmental health, as well as their relationship to disease. In addition, the Bedside to Community course offers a lecture on climate change and environmental justice.</li> <li>• <b>Recommendations:</b> Incorporate training for students on having conversations with patients about climate change. Continue to work with system leaders to add more lectures that address climate change’s negative effect on health, and the disproportionate impact these effects have on vulnerable populations.</li> </ul>	
<u>Interdisciplinary Research</u>	A-
<ul style="list-style-type: none"> <li>• The UVA SOM has multiple faculty members whose primary research is on planetary health. UVA also has a department dedicated to interdisciplinary research on planetary health. The iTHRIV program has recently focused on climate-specific initiatives to connect the community to planetary health researchers at UVA.</li> <li>• <b>Recommendations:</b> UVA SOM could organize a conference on planetary health independent of the annual Nursing school climate change conference. UVA should also continue to expand climate-specific initiatives within the iTHRIV program to encourage community involvement in the medical school’s research agenda.</li> </ul>	
<u>Community Outreach and Advocacy</u>	C-
<ul style="list-style-type: none"> <li>• SOM faculty members are involved in leading the School of Nursing annual conference on climate change and health. UVA SOM students do not receive sustainability communication updates from the SOM, though students may sign up for the Office for Sustainability <a href="#">newsletter</a>.</li> <li>• <b>Recommendations:</b> Develop new community-facing educational events and resume or create new partnerships with community organizations. Using Inova Hospital in Fairfax as an example, UVA SOM could publish educational materials about climate and public health.</li> </ul>	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> <li>• UVA and the UVA SOM both have many opportunities for students to participate in community projects, research, and funding for these initiatives. Additionally, students are involved in some institutional decisions regarding sustainability and planetary health.</li> <li>• <b>Recommendations:</b> The UVA SOM could invite community groups to speak to students about climate change and healthcare and create a streamlined platform for students to learn about participating with these groups. Additionally, the student-led SCCA group should optimize their current website to display ongoing research projects, community initiatives, and institutional planetary updates.</li> </ul>	
<u>Campus Sustainability</u>	B
<ul style="list-style-type: none"> <li>• UVA as an institution has set ambitious objectives and dedicated sustainability staff. In 2023, UVA met both our 2030 sustainable food and our nitrogen reduction goals and also surpassed its ten-year energy use per square foot reduction goal, achieving a 27% reduction for University buildings, including the SOM and Medical Center. UVA has done an effective job with utilizing sustainable construction practices for new and retrofitted buildings through its required <a href="#">Green Building Standards</a>, part of Facility Design Guidelines.</li> <li>• <b>Recommendations:</b> The UVA SOM should establish sustainability guidelines for all events such as <a href="#">Zero Waste Events</a>. Additionally, UVA should make greater progress to achieve carbon neutrality by 2030.</li> </ul>	

# Statement of Purpose

*Planetary health is human health.*

The Planetary Health Alliance describes planetary health as “a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth.” This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many medical school’s institutional priorities do not reflect the urgency of this danger to human health.

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

With the purpose of increasing planetary health awareness and accountability among medical schools, we have created a Planetary Health Report Card that medical students internationally can use to grade and compare their home institutions on an annual basis. This medical-student-driven initiative aims to compare medical schools nationally and internationally on the basis of discrete metrics in five main category areas: 1) planetary health curriculum, 2) interdisciplinary research in health and environment, 3) university support for student planetary health initiatives, and 4) community outreach centered on environmental health impacts 5) medical school campus sustainability.

# Definitions & Other Considerations

## Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as “the health of human civilization 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 minimizes 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 vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (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. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

- **Environmental history (Metric #19 in Curriculum Section):** This is a series of questions providers are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mold after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.
- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

**Other considerations:**

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

Added to our resources in 2022, the Planetary Health Report Card [Literature Review by Metric](#) collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

# Planetary Health Curriculum

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

## Curriculum: General

<b>1.1. Did your <u>medical school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?</b>	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	<b>Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.</b>
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation: At UVA, there is an elective offered to fourth-year medical students entitled Climate Change and Health. The organization of this elective was student-driven and faculty supported and was offered for the second consecutive year in 2023. The two-week intensive course features field expert speakers, self-guided learning, and a capstone project as well as participation in an Advocacy Day with Virginia state legislators. The elective has reached capacity (25 students) each year that it has been offered.</i></p>	

## Curriculum: Health Effects of Climate Change

<b>1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?</b>	
3	This topic was explored in depth by the core curriculum.
2	<b>This topic was briefly covered in the core curriculum.</b>
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: As part of the preclinical core curriculum at UVA, the Overview of the Cardiovascular System lecture briefly discussed the effects of heat exposure on the cardiovascular</i></p>	

*system, the increasing frequency/intensity of extreme heat events due to climate change, and the relationship between extreme heat and cardiovascular mortality. We did not identify associated assignments in this lecture. As of 2023, there is one new learning objective in the preclinical curriculum that specifically mentions heat as a culprit in cardiovascular and pulmonary disease exacerbations in the elderly.*

*Additionally, the Bedside to Community (B2C) course included a lecture entitled Climate Change, Health, and Physician Advocacy which touched upon the warming climate and health consequences of extreme heat, including an example case of a patient who experienced heat stroke.*

*Furthermore, extreme heat and related health impacts are addressed in depth in the (M4) elective session entitled Extreme Heat and Severe Weather.*

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

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

*Score explanation: UVA's curriculum included a lecture titled Climate Change and Respiratory Health, which briefly discusses the role of extreme/severe weather in contributing to air pollution and the development of respiratory conditions (specifically, asthma). In addition, the impact of extreme weather events is covered in a session in the fourth-year elective entitled Extreme Heat and Severe Weather.*

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

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

*Score explanation: This topic is covered in the session entitled "Infectious Diseases" in the fourth-year Climate Change and Health elective. An updated review of the 2023 materials for our required pre-clerkship block titled Microbes and the Immune System did not include any discussion about how environmental factors can affect 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.*

**1.5. Does your medical school curriculum address the respiratory health effects of climate change**

and air pollution?	
3	<b>This topic was explored in depth by the core curriculum.</b>
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: In the 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.</i></p>	

1.6. Does your <u>medical school</u> curriculum address the cardiovascular health effects of climate change, including increased heat?	
3	This topic was explored in depth by the core curriculum.
2	<b>This topic was briefly covered in the core curriculum.</b>
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: As part of the preclinical core curriculum at UVA, the Overview of the Cardiovascular System lecture briefly discussed 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. 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. As of 2023, in the preclinical curriculum, there is one learning objective that specifically addresses heat and several other new learning objectives that allude to the effects of heat on children's health, mental illness, and public health generally.</i></p>	

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



*Score explanation: Multiple new learning objectives and related lecture materials were taught during the required core curriculum course titled Mind Brain and Behavior in 2023. Materials discussing the impact of climate change on neurologic health and disease as well as mental health consequences of weather events linked to climate change were incorporated into the core curriculum at UVA. 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?**

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

*Score explanation: There is one session entitled “Water and Food Security Impacts and the Forced Migration” offered in the fourth-year elective. As of 2023, there is a new learning objective in the Gastrointestinal system of the preclinical curriculum that is relevant to this question: “Describe how the supply and safety of food and water is impacted by climate change and pollution and explain the consequences for children’s health and development.”*

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

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

*Score explanation: During a required lecture in the Bedside to Community (B2C) 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. Additionally, an overview of the climate-related pulmonary disease disparities such as asthma incidence in Black, Hispanic and Indigenous populations were discussed during a lecture in the preclinical core curriculum titled Climate Change and Respiratory Disease. Please see a newly implemented learning objective relevant to this topic below.*

- 1. Define climate change and identify how it affects vulnerable populations.*

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

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

*Score explanation: The pre-clerkships and clerkship curriculums do not address the unequal health impacts of climate change globally. However, the "Climate Change and Health" elective explores the threads of environmental justice and the disproportionate impact of climate change on vulnerable populations locally and globally. Additionally, several required readings within this elective address this topic including one article describing "Cancer Alley", a geographic band in Louisiana where communities of color are exposed to industrial air pollution with devastating health effects, and others explaining the link between historical racist housing policy in the US and current poor climate/health outcomes. Other required readings include, but are not limited to, articles describing the global expansion of Aedes-borne viral transmission in the setting of climate change and the impact of climate change on global food systems.*

*Additionally, the elective course "Global Health, Human Rights, and the Social Determinants of Health" for fourth year students had a two hour class titled "Refugees, Climate Change, Ethics, and Human Rights." During this session, students learned about the unequal impacts of climate change globally and specifically how this does and will lead to climate refugees.*

*Finally, a lecture 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. However, this does not directly relate to climate change.*

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

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

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

*Score explanation: Multiple relevant learning objectives are included in the Reproductive system in the core pre-clerkship curriculum and taught in various lectures including but not limited to Birth Defects with Prenatal Diagnostic Testing. Additionally, in this system, students were required to watch a pre-recorded lecture designed and recorded by a medical student that discusses the topic of endocrine disrupting chemicals and the various effects on the human body. Please see relevant learning objectives below.*

*1. Compare and contrast how extrinsic factors (including medications, irradiation, environmental*

exposures, and perinatal infections) can lead to birth defects.

2. Formulate a plan for the clinical management of women with extrinsic risk factors (including medications, irradiation, environmental exposures, and perinatal infections) for birth defects

3. Describe the relationship between endocrine disrupting chemicals (e. Per- and polyfluoroalkyl substances or PFAS) to obesity, diabetes, reduced male fertility and PCOS.

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

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

*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 medical school emphasize the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?**

3	Indigenous knowledge and value systems are integrated throughout the medical school's planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.
<b>0</b>	<b>This topic was not covered.</b>

*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.*

**1.14. Does your medical school curriculum address the outsized impact of anthropogenic**

**environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?**

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

*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. Additionally, a lecture 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.*

**Curriculum: Sustainability**

**1.15. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?**

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

*Score explanation: There was a recommended nutrition lecture in the M1 Gastrointestinal unit as well as a newly implemented 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. The newly implemented 2023 learning objective in the core curriculum can be seen below.*

- 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.*

**1.16. Does your medical school curriculum address the carbon footprint of healthcare systems?**

3	This topic was explored in depth by the core curriculum.
<b>2</b>	<b>This topic was briefly covered in the core curriculum.</b>

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: This topic was not covered in the preclinical curriculum. However, 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.</i></p>	

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)	
2	<b>The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment</b>
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 fulfill this metric.
1	<b>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.</b>
1	Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated
1	<b>The impact of anesthetic gasses on the healthcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anesthesia or choosing less environmentally harmful anesthetic gas options with reduced greenhouse gas emissions</b>
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
<p><i>Score explanation: There is a required lecture series for M1s on high-value care and the benefit of reducing excess medical tests. 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 waste in the healthcare system leading to low-value care. 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, and there is an additional lecture discussing the importance of non-pharmaceutical management of type 2 diabetes.</i></p>	

	<p>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.</p> <p>Lastly, the impact of anesthetic gasses on the healthcare carbon footprints is discussed in a required reading during the 3rd year of medical school during the Anesthesia rotation.</p>
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**Curriculum: Clinical Applications**

<b>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?</b>	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	<b>Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.</b>
0	No, there are not strategies introduced for having conversations with patients about climate change
<p><i>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. However, the elective is limited to 25 people, so not all medical students will have this exposure.</i></p>	

<b>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?</b>	
2	<b>Yes, the core curriculum includes strategies for taking an environmental history.</b>
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<p><i>Score explanation: At the UVA School of Medicine, in the Foundations of Clinical Medicine course, students are trained to take an environmental and exposure history as part of the full social history.</i></p>	

**Curriculum: Administrative Support for Planetary Health**

<b>1.20. Is your <u>medical school</u> currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?</b>	
4	<b>Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.</b>
2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.

0	No, there are no improvements to planetary health education in progress.
<p><i>Score explanation: Over the last year, the University of Virginia has made significant changes to the core curriculum to implement climate health related topics across various classes. In 2023, we received approval for a Climate Health and Sustainable Healthcare curricular thread. 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 2023, UVA has made major improvements to ESH/planetary health education.</i></p>	

<b>1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?</b>	
6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	<b>Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.</b>
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).
0	There is minimal/no education for sustainable healthcare.
<p><i>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.</i></p>	

<b>1.22. Does your <u>medical school</u> 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?</b>	
1	<b>Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare</b>
0	No, the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.
<p><i>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.</i></p>	

<b>Section Total (46 out of 72)</b>	<b>63.9%</b>
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# Interdisciplinary Research

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

<b>2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>medical school</u>?</b>	
<b>3</b>	<b>Yes, there are faculty members at the medical school who have a primary research focus in planetary health or healthcare sustainability.</b>
2	Yes, there are individual faculty members at the medical school who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.
<p><i>Score explanation: Matthew Meyer, MD, is an Associate Professor in the Department of Anesthesiology whose primary research focus is in healthcare sustainability. Additional faculty members who conduct research in the field of planetary health include Kyle Enfield, MD, Karen Johnston, faculty in the Center for Design and Health. Additionally, UVA has a partnership with the Inova Health System where many students complete their clinical rotations. Faculty members with an interest in planetary health research include Dr. Samantha Ahdoot and Dr. Homan Wai. This year, two members of the SOM faculty, part of the Infectious Disease Department, joined an international consortium <a href="#">SPRINGS</a> studying the links between climate change and childhood diarrheal disease. Another multidisciplinary effort is: <a href="#">Climate and Health in Virginia: Investigating Underlying Causes of Climate-Related Diseases and Disparities</a>.</i></p>	

<b>2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u>?</b>	
<b>3</b>	<b>There is at least one dedicated department or institute for interdisciplinary planetary health research.</b>
2	There is not currently a department or institute for interdisciplinary planetary health research, but there are plans to open one in the next 3 years.
1	There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research.
0	There is no dedicated department or institute.



*Score explanation: The UVA Environmental Institute “supports interdisciplinary research and training that is both great and good at the intersection of environmental change and human well-being. The Environmental Institute (formerly the Environmental Resilience Institute or “ERI”) connects faculty, students, and citizens to create solutions for a more equitable, resilient, and sustainable future.”*

[About | Environmental Resilience Institute | ERI \(virginia.edu\)](#)

**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 medical school?**

3	Yes, there is a process in which community members impacted by climate and environmental injustice have decision-making power in the climate + environmental research agenda.
2	Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.
1	<b>No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.</b>
0	There is no process, and no efforts to create such a process.

*Score explanation: The iTHRIV program (integrated Translational Health Research Institute of Virginia), which helps to increase connections between researchers and community members, is currently working to expand its climate-health related research, which will allow for more community input on our climate-related research agenda. To elaborate on this, interested community members can participate in the iTHRIV Community Advisory Board or “Community Engagement Studios” where they would meet with researchers interested in specific topics. 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.*

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

3	<b>There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.</b>
2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.

*Score explanation: The UVA Sustainability website comprehensively includes information about events, student organizations, and funding opportunities related to sustainability ([Homepage 2023 | UVA Sustainability \(virginia.edu\)](#)). The website also links to the Environmental Institute, which lists affiliated faculty involved in environmental health across a variety of disciplines ([Expert Directory | Environmental Resilience Institute | ERI \(virginia.edu\)](#)).*

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

4	Yes, the medical school has hosted at least one conference or symposium on topics related to planetary health in the past year.
3	<b>Yes, the institution has hosted at least one conference or symposium on topics related to planetary health in the past year.</b>
2	Yes, the institution has hosted a conference on topics related to planetary health in the past three years.
1	The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the institution has not hosted a conference on topics related to planetary health in the past three years.

*Score explanation: The University of Virginia School of Nursing Continuing Education, along with the Virginia Clinicians for Climate Change and the UVA Environmental Institute, hosted their third annual “Protecting Health in a Changing Climate” conference on April 22, 2023. The next annual conference will be held in April 2024.*

*On September 11, 2023, UVA’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 \(virginia.edu\)](#)). This involved talks by UVA and UVA-affiliated faculty and included an opportunity for researchers and community members to collaborate and exchange ideas with the aim of “catalyze[ing] research that may mitigate harms to human health from climate risks and prevent the healthcare system from indirectly contributing.” This involved “flashtalks” on the topics of the health risks posed by climate change and about the healthcare system’s contributions to both problems and solutions in this realm, followed by a “grant brewing opportunity” to initiate new projects and collaborations. This event, though welcome and valuable, was not a formal symposium or conference. This workshop was meant to be the first of a series of similar events (a “series of conversations”) and did not involve the gathering of diverse researchers or the publicity expected of a symposium or conference.*

**2.6. Is your medical school a member of a national or international planetary health or ESH organization?**

1	<b>Yes, the medical school is a member of a national or international planetary health or ESH organization</b>
0	No, the medical school is not a member of such an organization

*Score explanation: The UVA School of Medicine is a member of the Global Consortium on Climate and Health Education. UVA is also a member of [Practice Greenhealth](#), a membership and networking organization for sustainable health care.*

**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 color. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.*

<b>3.1. Does your <u>medical school</u> partner with community organizations to promote planetary and environmental health?</b>	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	<b>Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.</b>
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation: Physicians in the pediatrics and pediatric surgery departments at UVA have a project in conjunction with <a href="#">Local Food Hub's Fresh Farmacy</a> to provide local produce to qualifying pediatric patients and in-need families in the community. Unfortunately, past partnerships with other organizations were halted due to COVID and were not resumed.</i></p>	

<b>3.2. Does your <u>medical school</u> offer community-facing courses or events regarding planetary health?</b>	
3	The medical school offers community-facing courses or events at least once every year.
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	<b>The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.</b>
0	The institution/medical school have not offered such community-facing courses or events.
<p><i>Score explanation: The UVA School of Nursing holds a yearly conference on climate change and health. However, this is organized by the School of Nursing, Virginia Clinicians for Climate Action, and UVA Environmental Resilience Institute, without the involvement of the School of Medicine. The conference is open to the public, but is primarily geared toward health care providers.</i></p>	

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

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

*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. (<https://sustainability.virginia.edu/committee-sustainability>).*

**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?**

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

*Score explanation: The University of Virginia School of Nursing Continuing Education and School of Medicine Office of Continuing Medical Education put on an annual interprofessional conference, [Protecting Human Health in a Changing Climate](#), which offers numerous CME credits. In addition, in 2023 Dr. Matthew Meyer led a Grand Rounds session on sustainable health care for pediatrics targeted to individuals post graduation. Moving forward, Dr. Meyer will also teach sustainable critical care for anesthesia ICU fellows, although this has not commenced.*

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

2	Yes, the medical school or <u>all</u> affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	<b>No affiliated medical centers have accessible educational materials for patients.</b>

*Score explanation: Neither Inova hospital nor UVA Hospital publish accessible information about pollution, pesticide, or chemical exposures aimed toward patient education.*

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

2	Yes, the medical school or <u>all</u> affiliated hospitals have accessible educational materials for patients.
1	<b>Some affiliated hospitals have accessible educational materials for patients.</b>
0	No affiliated hospitals have accessible educational materials for patients.

*Score explanation: Inova Hospital in Fairfax publishes brochures online regarding the effects of climate change on different diseases (ie heart and lung disease) aimed towards patient audiences. The hospital also publishes information regarding the effects of climate change on pediatric and geriatric health. UVA Hospital does not publish any accessible educational materials for patients about climate change and its effect on health.*

<b>Section Total (6 out of 14)</b>	<b>42.9%</b>
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## Support for Student-Led Planetary Health Initiatives

***Section Overview:*** This section evaluates institutional support for student-led planetary health initiatives, such as funding, fellowships, programming, and student groups. Planetary health is a young field and, as young people facing a future deeply shaped by climate change, students are often some of the first at an institution to engage with it. Institutions should provide support for students to engage in sustainability quality improvement (QI) initiatives, discover mentors in their area of interest, and receive funding for planetary health projects.

4.1. Does your <u>medical school</u> or your <u>institution</u> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	<b>Yes, the medical school or institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.</b>
1	The medical school or institution encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation: For financial support, the <a href="#">Equity and Environment Fund</a>, supported by the Civic Engagement Subcommittee, is available for students/student groups to work on community-based initiatives or projects that sit at the intersection of equity, justice, and sustainability. However, the Equity and Environment Fund was paused in the 2023-2024 academic year. The <a href="#">GIFT (Green Initiatives Funding Tomorrow) Grant</a> is funded by the Student Council's Sustainability Committee with assistance from the Office of the Dean of Students. GIFT has provided tens of thousands of dollars for student sustainability initiatives since 2011, allowing students to solve sustainability challenges on Grounds through innovation and creativity. The <a href="#">Jefferson Trust</a>, an initiative of the UVA Alumni Association, works to promote excellence throughout the University of Virginia by providing catalytic support to the University community for initiatives in pursuit of Jeffersonian ideals. The Jefferson Trust has funded several sustainability-related projects, including solar education programs, environmental education events and more.</i></p>	

4.2. Does your <u>institution</u> offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	<b>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.</b>
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.
<p><i>Score explanation: The <a href="#">Environmental Futures Fellow</a> is a funded summer interdisciplinary graduate fellowship that grants up to \$8,000 in funding to support sustainability research projects for graduate</i></p>	

students, however the language states that this open for students specifically “at the M.S. and Ph.D. level” despite also mentioning that students from “all schools and colleges” at the university are eligible. Furthermore, as a research university, there is ample opportunity for paid research opportunities, and projects on planetary health/sustainable healthcare certainly would be and have been considered eligible. In particular, four summers ago, the [Hook Scholars Program](#) supported a student’s project on this type of work. The [Environmental Institute at UVA](#) does explicitly offer funding for research related to planetary health, however the language on the website would suggest this is only open to “undergraduate, Masters, and PhD students.”

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

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

*Score explanation: There have been no significant changes since last year. The [website for Student Clinicians for Climate Action at UVA](#) became active in early 2022. We have separate pages that detail our current and completed projects and resources related to planetary health. However, there is no contact information for potential faculty mentors.*

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

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

*Score explanation: There have been no significant changes since last year. UVA School of Medicine has an established interdisciplinary group of Student Clinicians for Climate Action aimed at advocating for planetary health. We have an official faculty advisor, funding through the School of Medicine student government, and registered Contracted Independent Organization status at the University. We are also mentored by the state group [Virginia Clinicians for Climate Action](#).*



<b>4.5. Is there a student liaison representing sustainability interests who serves on a <u>medical school</u> or <u>institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?</b>	
<b>1</b>	<b>Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.</b>
<b>0</b>	No, there is no such student representative.
<i>Score explanation: There are multiple medical student representatives on the <a href="#">Health Systems Sustainability Committee</a>.</i>	

<b>4.6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)</b>	
<b>1</b>	<b>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.</b>
<b>1</b>	<b>Panels, speaker series, or similar events related to planetary health that have students as an intended audience.</b>
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
<b>1</b>	<b>Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)</b>
<p><i>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 <a href="#">Morven Farms</a>. The <a href="#">UVA Sustainable Food Collaborative</a> also offers projects and grant-funded opportunities for students to become involved with food justice and food sustainability.</i></p> <p><i>There is no substantial opportunity for panels, speaker series, or events outside of the curriculum hosted by the medical school. Infrequently, there is a Medical Center Hour presentation such as in 2023 on <a href="#">Environmental Health Inequity</a>. The school of nursing frequently hosts a Human Health in a Changing Climate event with panels or speakers. The second-year medical students in the class of 2025 had a lecture this past fall on climate change and its impact on pulmonary health. In 2023, the SCCA organized an event to talk about the benefits of a plant-based diet.</i></p> <p><i>While art events have been popular in the past, this year there have not been cultural events sponsored by either the medical school or the University to celebrate planetary health. Charlottesville boasts</i></p>	

*many local organizations willing to accept student participants. The School of Medicine does not sponsor opportunities to partner with these organizations.*

*Both the Wilderness Medicine Interest Group and Outdoor Adventures Club also host outdoor programs such 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.*

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

5.1. Does your <b>medical school</b> and/or <b>institution</b> have an Office of Sustainability?	
3	<b>Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.</b>
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation: UVA has an <a href="#">Office of Sustainability</a> established in 2013 which supports university-wide sustainability efforts. A special projects coordinator and sustainability strategic planner are assigned to the health system.</i></p>	

5.2. How ambitious is your <b>institution/medical school</b> plan to reduce its own carbon footprint?	
5	<b>The institution/medical school has a written and approved plan to achieve carbon neutrality by 2030</b>
3	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2040
1	The institution/medical school has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate
0	The institution/medical school does not meet any of the requirements listed above
<p><i>Score explanation: UVA SOM is included in the <a href="#">2020-2030 Sustainability Plan</a>. The plan includes ten 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. A UVA sustainability and greenhouse gas <a href="#">reports</a> are released annually and sustainability <a href="#">updates</a> are released quarterly to present quantitative details towards these goals.</i></p>	

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

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

*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 as a whole procures about 20% of its electricity from [off-site solar facilities](https://sustainability.virginia.edu/steward/climate-action-energy). This means that about 13% of the energy delivered to the SOM is renewable energy.*

*(<https://sustainability.virginia.edu/steward/climate-action-energy>)*

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

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

*Score explanation: All new building projects are required to be LEED certified. Claude Moore Medical Education Building is one of 70 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 currently underway at MR-4 which is one of the largest building-wide efficiency efforts to date at UVA.*

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

2	<b>Yes, the medical school or 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-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.</b>
1	The medical school or institution has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school or institution has not implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>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. Both the CAT and UTS are actively working on completely upgrading their fleets to hybrid electric buses.</i></p>	

<b>5.6. Does your <u>medical school</u> have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?</b>	
2	Yes, the medical school has both compost and recycling programs accessible to students and faculty.
1	<b>The medical school has either recycling or compost programs accessible to students and faculty, but not both.</b>
0	There is no compost or recycling program at the medical school.
<p><i>Score explanation: The medical school has ample recycling programs that are easily accessible to students and faculty. A compost program exists in some areas of the University, including the hospital cafeteria; however, composting is not reliably available across UVA's campus or medical facilities.</i></p>	

<b>5.7. Does the <u>medical school</u> apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?</b>	
3	Yes, the medical school has adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	<b>There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.</b>
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.

*Score Explanation: Morrison Dining supplies food to the health system and they have sustainability guidelines established. There is a UVA Sustainable Food Collaborative that is working to implement the UVA Sustainable Food Action Plan. This plan applies to the whole University and not just the School of Medicine, however there are a few provisions that address UVA Health specifically. Part of this plan includes reducing single serving food and beverage containers that would otherwise go to landfills by 20% by 2030. The plan also includes a goal of increasing sustainable food purchases to 30% of their annual total by 2030. In calendar year 2022, 35% of the University's food and beverage spend at UVA Dine, UVA Health, and the Darden School of Business combined was sustainable per the Advancement for Sustainability in Higher Education (AASHE) STARS criteria. This meets and exceeds UVA's 2030 sustainable food purchasing goal.*

**5.8. Does the medical school or institution apply sustainability criteria when making decisions about supply procurement?**

3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	<b>There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement.</b>
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.

*Score explanation: The Green Workplace Program is a university-wide effort that includes the health system and focuses on improving sustainability in office spaces and supplies. The Green Workplace Program guidelines are currently optional. Following the guidelines will lead to a Green Workplace Certification. The guidelines cover 6 areas (education and awareness, reminder signage, energy and water, waste reduction, social equity and health, and ongoing communications) and to receive the Certification, the workplace must commit to 20 sustainable actions. In 2023, 3 additional workplaces that are not affiliated with UVA Health have received their certifications, however the UVA Health PACU is currently in progress for their certification.*

**5.9. Are there sustainability requirements or guidelines for events hosted at the medical school?**

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

*Score explanation: There are no published sustainability criteria that events hosted at the medical school are required to abide by. However, 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. Finally, the greater Office of Sustainability encourages minimizing waste during events held across UVA. Their website has a [Zero Waste Events Guide](#) (updated in 2023) available on their website to advise those planning events at UVA. These 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. [Zero Waste Events | UVA Sustainability \(virginia.edu\)](#)

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

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

*Score explanation: 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 2022, labs at UVA won 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?**

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

*Score explanation: As of 2023, 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. 1. The University Investment Management Co.'s (UVIMCO) Investor Responsibility Framework and [Fossil Fuel Investment Principles](#) (p. 7) include a formal commitment to transitioning the University's endowment to net-zero emissions by 2050, if not sooner. In 2023 UVIMCO deepened engagement with external fund managers on overall environmental, social and governance (ESG) integration and specifically, climate change: 2023 Investor Responsibility Report.*

**Section Total (22 out of 32)**

**68.8%**

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# Grading

## Section Overview

This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. Letter grades for each section and the institution overall were then assigned according to the table below.

Letter Grade*	Percentage
A	80% - 100%
B	60% - 79%
C	40% - 59%
D	20% - 39%
F	0% - 19%

## Planetary Health Grades for the University of 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
<b>Planetary Health Curriculum (30%)</b>	$(46/72) \times 100 = 63.9\%$	B-
<b>Interdisciplinary Research (17.5%)</b>	$(14/17) \times 100 = 82.4\%$	A-
<b>Community Outreach and Advocacy (17.5%)</b>	$(6/14) \times 100 = 42.9\%$	C-
<b>Support for Student-led Planetary Health Initiatives (17.5%)</b>	$(10/15) \times 100 = 66.7\%$	B
<b>Campus Sustainability (17.5%)</b>	$(22/32) \times 100 = 68.8\%$	B
<b>Institutional Grade</b>	<b>63.5%</b>	<b>B-</b>



# Report Card Trends

## Section Overview

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

