



Planetary Health Report Card:

University of Virginia
School of Medicine



2020-2021 Contributing Team:

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Summary of Findings

Curriculum	D
<p>Currently, there is a single, optional lecture focused on the impact of climate change on health, sparse learning objectives on the topic, few if any test questions, and no existing fourth-year electives. Our greatest strengths lie in student and faculty enthusiasm. Our preliminary suggestions include: tweaking existing clinical vignettes throughout the preclinical courses to add an environmental theme; expanding upon the existing sessions in FCM and SIM to more explicitly address disparities in environmental health impacts; developing a for-credit fourth-year elective. Ultimately, we hope for a dedicated PH thread, resulting in more explicit coverage, learning objectives, and testing on the topic.</p>	
Interdisciplinary Research	B
<p>There are PH research opportunities within the SOM and the broader university; however, locating these opportunities prove very challenging. The Office of Sustainability (OS) and the Environmental Resilience Institute (ERI) present varied opportunities for students across the university to participate in PH research. However, we found that the SOM faculty researching PH were not widely advertised nor updated on their faculty profiles. Additionally, there are no faculty members who focus primarily on PH. We are hopeful that the increased visibility from the School of Nursing’s recent first “Protecting Human Health in Changing Climate” conference will lead to increased research opportunities.</p>	
Community Outreach and Advocacy	D
<p>Currently, UVA SOM contributes to the generation of green communal spaces through a formal relationship with the Charlottesville City Schoolyard Garden as a part of the SIM program. However, no organization at UVA currently offers any community-focused courses or events about climate change. UVA students also do not currently receive regular communication from the SOM or the OS. There are numerous opportunities to develop new community-facing educational events and provide sustainable healthcare updates to students on a regular basis. UVA Hospital could follow Inova Hospital in Fairfax to publish educational materials about PH.</p>	
Support for Student-Led Initiatives	B
<p>The student body at UVA is energized toward climate action, and overall the institution offers readily available support. There are sustainability-directed grants and research opportunities created by the University, though the medical school lacks specific funding or outreach for these initiatives. A medical student currently sits on the University’s Student Council Cabinet Committee for Sustainability, which has allowed our cohort to connect with the opportunities and projects going on within the larger academic institution. Moving forward, we would like to see medical students become leaders in this space, while maintaining the collaborative energy that has allowed us to be successful so far.</p>	
Sustainability	B
<p>There is a project coordinator within the OS in charge of the health system, and UVA has made efforts to make existing and new buildings sustainable. Students have access to eco-friendly transportation, and the institution rewards environmentally friendly labs. The school has a plan to be carbon neutral by 2030, there is a well-established recycling program and the health system is implementing a plan for increased food and supply procurement sustainability. UVA falls short in that only 21% of its electricity comes from renewable resources, and there are no sustainability guidelines in place for SOM events. Additionally, the institution remains invested in fossil fuels, although there is a student-led divestment effort. We recommend the SOM develop sustainability guidelines for events as well as increase renewable energy at the school and divest from fossil fuels.</p>	

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance defines planetary health as “a field focused on characterizing the human health impacts of human-caused disruptions of Earth's natural systems.” 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 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.

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 change. Therefore, it is critical that medical students are trained to understand the health effects of climate change, as well as planetary health 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. Did your medical school offer elective courses to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation:</i> A review of fourth-year electives offered in 2020 and 2021 confirms that UVA SOM does not currently offer electives related to ESH/planetary health. There was a remote elective offered by faculty at the University of Colorado; however, when asked if M4s could earn credit from participation in this elective, administrators declined citing limitations due to the pandemic. A review of preclinical and clerkship electives, like the Social Issues in Medicine lectures, similarly confirms there are no elective courses regarding ESH/planetary health.</p>	

Curriculum: Health Effects of Climate Change

2. Does your medical school curriculum address the relationship between extreme temperature health risks and climate change, as well as the socioeconomic/racial disparities in extreme heat exposure?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.

0	This topic was not covered.
<p><i>Score explanation:</i> The impact of heat waves on Health Care Utilization as well as the role in CKD development is briefly discussed in the non-required lecture given by Dr. Kyle Enfield in the second-year lecture Climate Change and Pulmonary Disease as part of the Pulmonary System block. Role of socioeconomic/racial disparities in heat exposure was not covered in the curriculum.</p>	

3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> The impact of weather extremes on healthcare systems, and the health industry's contribution to global pollution, were briefly discussed in the non-required lecture given by Dr. Kyle Enfield in the second-year lecture Climate Change and Pulmonary Disease as part of the Pulmonary System block. Coverage included three learning objectives.</p>	

4. Does your medical school curriculum address the impact of climate change on the changing patterns of infectious diseases?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> Upon reviewing learning objectives from the M1 Microbes and the Immune System block and consulting members of the current M1 class, we can confirm that this topic is not covered in our current curriculum.</p>	

5. Does your medical school curriculum address the cardiorespiratory health effects of climate change, including air pollution?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> There is one, non-required session entitled “Climate Change and Pulmonary Disease” that takes place in the M2 Pulmonary block. The 50 minute, lecture-style session taught by Dr. Kyle Enfield covering the impact of climate change and pollution on human respiratory health and the Acclimatization Thermal Strain Index and its impact on respiratory illness.</p>	

6. Does your medical school 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	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:</i> A thorough review of the lectures and learning objectives from the M1 Mind, Brain Behavior (Neurology and Psychology) unit confirms that there was no mention of the neuropsychological effects of environmental degradation and climate change.</p>	

7. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> While the health benefits of a diet with more vegetables and less meat were briefly touched upon during the nutrition sessions in the M1 GI System block, it was not presented within the framework of planetary health. Therefore, we are considering this topic not to have been covered.</p>	

8. 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, children, homeless populations, and older adults?	
3	This topic was explored in depth by the core curriculum.

2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> Upon review of the Social Issues in Medicine (SIM) syllabus and learning objectives, we can confirm that this topic is not covered in our current curriculum. There is, however, a “Health Care Disparities” lecture that touches upon health disparities by neighborhood within Charlottesville and the surrounding areas. Additionally, the “Poverty, Housing, and Health” lecture discusses health impacts of environmental exposures upon marginalized populations. Although some clerkships may briefly cover the topic coincidentally, there are not specific learning objectives geared towards this topic.</p>	

9. Does your medical school curriculum address the unequal health impacts of climate change globally?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> The pre-clerkships and clerkship curriculums do not address the unequal health impacts of climate change globally. The global clerkships also do not specifically address this topic, although it may be indirectly addressed in the process of educating students on other topics.</p>	

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

10. Does your medical school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i> There are two relevant learning objectives in the Reproductive unit. The lecture is called “Birth Defects With Prenatal Diagnostic Testing”. Please see learning objectives below.</p> <ol style="list-style-type: none"> 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

This learning objective was addressed in lecture in a pie chart citing 10% of congenital anomalies are due to environmental causes. It also lists “environmental chemicals” as a teratogen.

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

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

Score explanation: There are no specific learning objectives looking at the surrounding community of Charlottesville and how human-caused environmental threats have an impact. There are research projects looking at this topic but they are not part of a course.

12. Does your medical school curriculum address the unique climate and environmental health challenges that have impacted and are impacting Indigenous communities?

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

Score explanation: There are no specific learning objectives about indigenous communities and their relation to climate and environmental health challenges.

13. 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, and older adults?

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

0	This topic was not covered.
<i>Score explanation:</i> There are no learning objectives looking at marginalized populations and the impact of climate change.	

Curriculum: Sustainability

14. 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.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>Score explanation:</i> There are no specific learning objectives looking at the environmental and health co-benefits of a plant-based diet. This topic may be indirectly covered during clerkships but there does not seem to be specific learning objectives based on the topic. The only topic that was mentioned with respect to a plant-based diet are possible vitamin deficiencies stemming from the diet.	

15. Does your medical school curriculum highlight the waste generated by the healthcare system and identify ways to advocate for and implement sustainable best practices in health care?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<i>Score explanation:</i> The topic of efficient use of healthcare is touched upon the DxRx course, which lasts only 5 days and was a required course for all M3s (during the 2020 COVID furlough) and is required for all rising M4s (in non-pandemic times). However, only a day was devoted to the subject. Another course called High Value Care was a 2-week required course for M3s during the 2020 covid break which delved more deeply into the subject, but did not focus specifically on sustainability with regards to the environment; this instead focused more on reducing costs and waste in the healthcare field as centered on the patient. This course will likely not be required for other classes in the future. Neither of the two courses explicitly discussed the impact of healthcare waste on the environment or ways to mitigate that effect.	

Curriculum: Clinical Applications

16. In training for patient encounters, does your medical school’s curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
<p><i>Score explanation:</i> In training for patient encounters, our curriculum does not introduce strategies to have conversations with patients about the health effects of climate change. The system leader for the Foundations of Clinical Medicine course was very interested in hearing about ways that this could be incorporated into the curriculum in the future.</p>	

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

Curriculum: Administrative Support for Planetary Health

18. Is your medical school currently in the process of improving Education for Sustainable Healthcare (ESH)/planetary health education?	
4	Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.

Score explanation: The UVA School of Medicine administration has begun discussions about how to more actively incorporate ESH/planetary health into the curriculum; however, this planning is in the early stages.

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

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

Score explanation: UVA SOM follows a systems-based pre-clerkship curriculum, and some planetary health/ESH topics are covered as they apply to the system. For example, in the Cells, Blood, and Cancer system, students have a lecture on Environmental Carcinogenesis, and in the Gastrointestinal system, students have a lecture on Global Malnutrition that incorporates learning about environment-related health factors. Additionally, the longitudinal Social Issues in Medicine course includes lectures that incorporate aspects of planetary health/ESH topics, such as the SIM session required for M1s on Poverty, Housing, and Health. Moreover, students are trained in the longitudinal Foundations of Clinical Medicine course to ask questions about environmental exposures and risk factors when taking a full patient history.

20. Bonus: Does your medical school have a program that offers incentives for faculty/departments to develop new planetary health/ESH courses and/or incorporate planetary health/ESH into existing courses?

1*	Yes, the medical school has an incentive program.
0	No, the medical school does not have an incentive program.

Score explanation: The UVA School of Medicine does not have a program that offers incentives for faculty/departments to develop new planetary health/ESH courses and/or incorporate planetary health/ESH into existing courses. However, per system leaders the SOM would be supportive of faculty members wanting to incorporate planetary health into the curriculum.

Section Total (16 out of 58)	D
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Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Interdisciplinary Research

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

1. Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?	
4	Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health and healthcare sustainability.
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in a planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the School of Medicine who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.
<p><i>Score explanation:</i> To our knowledge, there are currently no School of Medicine faculty members whose primary research focus is in planetary health or healthcare sustainability. However, there are some faculty members who conduct research related to these topics, as listed:</p> <ul style="list-style-type: none"> ● Kyle Enfield, MD - Impact of weather changes on chronic lung diseases ● Matthew Meyer, MD - Relative environmental costs and sustainability of various anesthetics ● Kristen M. Wells, MPH, PhD - Environmental epidemiology 	

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

1	There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research.
0	There is no dedicated department or institute.
<p><i>Score explanation:</i> The UVA Environmental Resilience Institute (https://eri.virginia.edu/) “supports trans-disciplinary research and training at the intersection of environmental change and human well-being by connecting faculty, students, and citizens together to foster a more resilient and sustainable future for the global common good.” The ERI connects faculty and students across several departments and schools, including the School of Medicine.</p>	

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	No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
0	There is no process, and no efforts to create such a process.
<p><i>Score explanation:</i> There are no processes currently in place to allow input into the research agenda, and there are no current efforts to establish this type of process.</p>	

4. Does your institution have a planetary health website, or a website centralizing various campus resources related to health and the environment?	
3	There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.
<p><i>Score explanation:</i> The UVA Sustainability website (https://sustainability.virginia.edu/) comprehensively includes information about events, student organizations, and funding opportunities</p>	

related to sustainability. The website also links to the Environmental Resilience Institute, which lists all affiliated faculty involved in environmental health across a variety of disciplines (<https://eri.virginia.edu/member-affiliates/>).

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

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

Score explanation: The University of Virginia School of Nursing Continuing Education and School of Medicine Office of Continuing Medical Education hosted an interprofessional conference, Protecting Human Health in a Changing Climate, in February 2021.

6. Has your institution or medical school joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education?

2	Yes, the medical school has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education.
1	Yes, the institution has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education, but the medical school specifically has not.
0	No, the institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.

Score explanation: The UVA School of Nursing has joined the Global Consortium on Climate and Health Education, but the School of Medicine has not. Neither UVA nor the School of Medicine have not joined the PHA.

Section Total (12 out of 19)

B

Are there additional research resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Community Outreach and Advocacy

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

1. Does your medical school partner with community organizations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score Explanation:</i> UVA School of Medicine has a formal relationship with the Charlottesville City Schoolyard Garden through the Social Issues in Medicine program, a mandatory service-learning experience for all first-year medical students. The City Schoolyard Garden works to rectify food insecurity by providing fresh, locally-grown produce to residents and creating green spaces around the city for residents to enjoy nature. First-year medical students work with the organization to prepare garden beds, harvest produce, and create gardens at local schools for students and teachers to enjoy. UVA earns a score of 2 for partnering with one community organization that promotes environmental engagement within the Charlottesville community.</p>	

2. Does your medical school offer community-facing courses or events regarding planetary health?	
3	The medical school offers community-facing courses or events at least once every year.
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.

0	The medical school has not offered such community-facing courses or events.
<p><i>Score explanation:</i> The UVA School of Medicine does not currently have any community facing courses or events. No other UVA organizations have known community-facing courses or events, including the UVA Office for Sustainability, UVA Global Infectious Disease Institute, UVA Environmental Resilience Institute, UVA Center for Global Health Equity, and the integrated Translational Health Research Institute of Virginia. However, among these organizations there are numerous opportunities to develop new community-facing courses or events, or to make established but exclusive events open to the wider community.</p>	

3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	Students do not regularly receive communications about planetary health or sustainable healthcare.
<p><i>Score explanation:</i> UVA students do not currently receive communication updates 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 as a PDF on the UVA Sustainability website (https://sustainability.virginia.edu/about-us/initiatives). Additionally, as mentioned in the example above, The Office of Sustainability could send planetary health updates with a health professional audience in mind.</p>	

4. Does the medical school offer continuing medical education (CME) courses that address planetary health and/or sustainable healthcare?	
2	Yes, multiple in-person or online CME courses relating to planetary health and/or sustainable healthcare are offered, including at least one with a primary focus of planetary health.
1	Yes, one in-person or online CME course related to planetary health and/or sustainable healthcare is offered.
0	There are no CME courses on planetary health or sustainable healthcare topics.
<p><i>Score explanation:</i> In October of 2020, CME credit was offered through the UVA SOM for the zoom webinar “Climate Change in the Commonwealth - Health Implications and Challenges” put on by The Medical Center Hour program.</p>	

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.

5. Do hospitals affiliated with your medical school have accessible educational materials for patients about environmental health exposures?

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

Score Explanation: Inova Hospital in Fairfax publishes brochures online regarding the effects of climate change on different diseases including 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. UVA earns a score of 1 because some affiliated hospitals do publish educational materials for patients about health and climate change.

6. Do hospitals affiliated with your medical school have accessible educational materials for patients about climate change and health impacts?

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

Score explanation: Neither Inova nor UVA Hospital publish accessible information about pollution, pesticide, or chemical exposures aimed toward patient education. UVA earns a score of 0.

Section Total (5 out of 14)

D

Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Support for Student-Led Planetary Health Initiatives

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

1. Does your institution offer support for medical students interested in enacting a sustainability initiative?	
2	Yes, the institution offers grants available to medical students for students to enact sustainability initiatives.
1	The medical school encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available.
0	No, the institution does not offer opportunities or support for sustainability initiatives.
<p><i>Score explanation:</i> The Equity and Environment Fund, supported by the Civic Engagement Subcommittee, is available for students/student groups for community-based initiatives or projects that sit at the intersection of equity, justice, and sustainability. The GIFT (Green Initiatives Funding Tomorrow) Grant 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 Jefferson Trust, 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. All of these grants can be found on the UVA Sustainability website: https://sustainability.virginia.edu/engage/get-involved/grants-funding.</p>	

2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
3*	The institution offers an explicit paid fellowship for medical students to do research related to planetary health and/or sustainable healthcare.
2	The institution offers paid research opportunities for students and planetary health/sustainable healthcare projects would be considered eligible.
1	There are unfunded research opportunities for students to perform research related to planetary health/sustainable healthcare.

0	There are no opportunities for students to receive funding for planetary health/sustainable healthcare research.
<p><i>Score explanation:</i> 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, this past summer the Hook Scholars Program supported a student’s project on this type of work. The Environmental Research 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”</p>	

3. Does the medical school have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
2	The medical school has a webpage with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.
1	There is a medical school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.
<p><i>Score explanation:</i> This information does exist—largely through support from Virginia Clinician for Climate Action— and efforts have been made to create an accessible web-based interface, but it is currently only available privately through personal networking.</p>	

4. Does your medical school have funded, registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
2	Yes, there is a funded student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support and/or funding.
0	No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.
<p><i>Score explanation:</i> UVA School of Medicine has a newly-formed Climate and Health Interest Group that does has both an official faculty advisor, and funding through the School of Medicine student</p>	

government. We are in the process of applying for recognition by The University at large, which would open up further sources of funding and material support.

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

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

Score explanation: There is currently a medical student serving on the Sustainability Committee in the Cabinet of UVA's Student Council.

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

1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students) that follow Leave No Trace principles.

Score explanation: As part of the first-year medical student Social Issues in Medicine course, a group of students participated in local agriculture by helping care for school gardens. The second year medical students in the class of 2022 had a lecture on planetary health and its relation to patient care. The medical school also has a Wilderness Medicine Interest Group that conducts hiking and other outdoor programs following Leave No Trace principles. Through the larger University, there are frequent arts events and lectures dedicated to sustainability topics.

Section Total (11 out of 15)	B
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Are there additional student-led initiative resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Campus Sustainability

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

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

2. Does your medical school and/or institution have a stated goal of carbon neutrality by 2050?	
4*	The medical school is already carbon neutral.
3	Yes, there is a stated carbon neutrality goal and the medical school has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal, but the medical school has not created a plan to reach that goal or the plan is inadequate.
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
0	There is no stated goal for reduction of CO2 emissions.
<p><i>Score explanation:</i> The UVA SOM is included in the 2020-2030 Sustainability Plan. The plan includes carbon neutrality by 2030 and being fossil fuel free by 2050.</p>	

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

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

Score explanation: Approximately 21% of UVA's electricity comes from renewable sources.

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 rating system or sustainable building code/guideline?

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

Score explanation: 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.

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

2	Yes, the medical school has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
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1	The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.
<i>Score explanation:</i> Most students live within walking or biking distance and have access to nearby bus routes.	

6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?	
2	Yes, the medical school has both compost and recycling programs accessible to students and faculty.
1	The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0	There is no compost or recycling program at the medical school.
<i>Score explanation:</i> There is a recycling program but not a well established compost program.	

7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections?	
3	Yes, the medical school has adequate sustainability requirements for food and beverages and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.
<i>Score explanation:</i> Morrison Dining supplies food to the health system and they have sustainability guidelines established. There is a Sustainable Food Strategy Task Force that is working to implement the UVA Sustainable Food Action Plan.	

8. Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement?	
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3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.
<i>Score explanation:</i> The Green Workplace Program is a university-wide effort that includes the health system and focuses on improving sustainability in office spaces and supplies.	

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

10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.
<i>Score explanation:</i> 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.	

11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
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4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.
3	No, the institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil-fuel companies.
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.
<i>Score explanation:</i> The student-led coalition called Divest UVA is advocating for UVA's divestment from fossil fuels.	

Section Total (20 out of 29)	B
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Are there additional sustainability resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Grading

Section Overview

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

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

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	Grade
Planetary Health Curriculum (30%)	16 / 58 = 28%	D-
Interdisciplinary Research (17.5%)	12 / 19 = 63%	B-
Community Outreach and Advocacy (17.5%)	5 / 14 = 38%	D+
Support for Student-led Planetary Health Initiatives (17.5%)	11 / 15 = 73%	B
Campus Sustainability (17.5%)	20 / 29 = 69%	B
Institutional Grade	50%	C