Planetary Health Report Card (Medicine):

Vanderbilt University School of Medicine

2024-2025 Contributing Team:

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Summary of Findings

Overall Grade	B

Curriculum	B

- Using the results of Vanderbilt's initial record card as a springboard, a group of students developed a longitudinal climate health curriculum proposal that included a plan for integration of planetary health and medical sustainability concepts into the four-year MD curriculum. Over the following few years, many of these proposal elements were integrated into the preclinical curriculum for M1s (specifically the Microbes & Immunity, Homeostasis, and Renal & Digestion blocks). Over the past year specifically, planetary health and medical sustainability topics have been integrated into the clinical curriculum for M2s, largely driven by student-led efforts. These topics include how to assess and discuss the impact of the environment on patient health, the impact of climate change on vulnerable populations, and the carbon footprint of the healthcare system. These topics are discussed extensively in the elective course *Ecology and Health: Climate, Food, and Justice*, taught by Drs. Eva Parker and Curtis Baysinger.
- **Recommendations:** We hope to continue to intersperse planetary health content throughout the M1 curriculum in the following blocks: Reproduction & Endocrine, and Brain, Behavior, & Movement. Furthermore, we hope to continue to integrate discussion of systems-wide impacts of a changing climate and limited resources, specifically the impacts on vulnerable populations, into the curriculum. Future curriculum improvements include integration of practice-specific planetary health topics into the medical school's many Integrated Science Courses - advanced elective courses for third- and fourth-year students.

Interdisciplinary Research	A-

- Several Vanderbilt University School of Medicine faculty in the dermatology, radiology, and anesthesiology departments are dedicated to planetary health issues in their research and broader careers.
- **Recommendations:** Vanderbilt University School of Medicine and Medical Center have both organized conferences/events related to planetary health. We would encourage the medical school to also plan and host conferences on this topic. The medical school could also join the Planetary Health Alliance and the Global Consortium on Climate and Health Education and connect with communities affected by climate change to inform research priorities.

Community Outreach and Advocacy	C+

- Vanderbilt University School of Medicine student organizations partner with several community programs to promote planetary health and has promoted climate health-related events in the past. The medical school does not provide regular communication about planetary health or sustainability efforts, though students do receive emails from Vanderbilt University regarding campus-wide sustainability efforts unrelated to healthcare. VUSM and its affiliated hospitals provide patient educational materials on the topic of environmental health exposures and the health impacts of climate change.
- **Recommendations:** We encourage ongoing collaboration with community partners with the promotion and organization of climate health events. Opportunities for improvement include expanding existing regular communications to include updates regarding planetary health and sustainability efforts currently underway at the medical school.

Support for Student-Led Initiatives	B

- The medical school has been very supportive of student-led sustainability efforts through the Social Mission Committee (SMC) and Medical Students for a Sustainable Future (MS4SF) , including completion of the annual planetary health report card, development and integration of the longitudinal climate health curriculum proposal, and implementation of composting into the medical school building. In addition to the integration of changes throughout the M1 preclinical curriculum and M2 Medicine clerkship, the Foundations of Healthcare Delivery course invited physicians and researchers who are incorporating climate conscious efforts into their everyday practice to speak with students about potential QI and research projects they could get involved in. Additionally, student groups have held several events, including a climate health research panel and a book club and advocacy session centered on environmental justice.
- **Recommendations**: There may be opportunities in the future to design a research program, fellowship, or funding opportunities/grants for students interested in doing planetary health/healthcare sustainability research. Additionally, we recommend creation of a medical school specific webpage to better inform the student body of current initiatives and promote networking amongst researchers and students.

Campus Sustainability	**B**

- Vanderbilt University (VU) as a whole is taking steps to improve campus sustainability. There are initiatives to improve campus sustainability through a variety of methods. VU has an office of Office of Environmental Health, Safety, and Sustainability which coordinates sustainability and environmental compliance programs. They have also implemented plans to work with Nashville Electric Service and Tennessee Valley Authority to build a Solar farm as part of their carbon neutrality by 2030 goals. MoveVU is a program to increase the diversity of transportation to reduce carbon emissions. The campus saw a 31% decrease in commuters driving alone to work. Almost all buildings on campus have recycling and composting options for students. The campus dining is also making significant progress in sourcing local foods, building gardens, and using technology to minimize food waste.
- **Recommendations:** There is still much to improve with the campus sustainability. Recommendations include beginning the process of divesting from fossil-fuel companies, hiring a single individual to be in charge of the sustainability initiatives in the medical center, considering meat-free days as a monthly event, or the process of retrofitting older buildings to be more sustainable. Furthermore, more effort can be done by the medical school to contribute with the ongoing efforts throughout campus.

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as "a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth." This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change "the greatest threat to global health in the 21st century," many health professional 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 health professional training. It is imperative that we hold our institutions accountable for educating health professional students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of colour, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

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

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as "the health of human civilisation and the state of the natural systems on which it depends." For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of health professional education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.

- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.

- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:

    1. Describe how the environment and human health interact at different levels.
    2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
    3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.

- **Medical School/Department vs. Institution:** When "Medical school" is specified in the report card, this only refers to curriculum and resources offered by the School/department of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to the university more broadly

including all of its campuses. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

- **Environmental history (Metric #19 in Curriculum Section):** This is a series of questions students are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mould after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution. Please be as specific as possible when providing evidence for this metric.

- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.

- **Core Curriculum:** This refers to taught material that is delivered to the entire cohort of students in one year.

- **Clerkship / Outreach:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations, outreach or placements. This is a relatively short (approximately 4-8 weeks) period of study and patient-centred clinical experience that takes place as part of the undergraduate programme.

- **Clinical rotation:** This is a term used to refer to placements that students go on (e.g., ophthalmology, surgery, cardiology).

- **Physiotherapy vs Physical Therapy:** For the purposes of this report card these terms are considered interchangeable. However, physiotherapy will be used primarily.

- **Community organisations:** For most institutions, there are existing groups that are not directly affiliated with the university and exist as a product of what the community the institution exists in cares about or needs. These specific community organisations relevant to this report include those that are focused around some aspect of climate and health preservation. These community organisations can include but are not limited to local mutual aid initiatives, underserved-resource distribution groups, clean-up and nature conservation groups, community gardeners, and other environmental-related organisations. If your institution does not have access to local volunteerships with community groups, please report any community organisations your institution or school has collaborated with.

- **Climate justice:** The idea that certain population groups and geographical locations which are disproportionately more impacted by climate change are already

economically and socially disadvantaged. This double vulnerability sits alongside pre-existing social justice concerns and should therefore shift policy and practice to mitigate the inequitable effects of the climate crisis.

- **Extractivisim:** The removal of natural resources typically in large quantities. Within anthropology this term is often used in the context of colonialism to refer to the historic seizing of natural resources, a practice which has developed business models tied to ecological degradation and loss of biodiversity.

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

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

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

- **Anthropogenic:** Created through human activity

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

Other considerations:

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

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

Planetary Health Curriculum

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

Curriculum: General

1.1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
Yes, the medical school has offered **more than one** elective whose primary focus is ESH/planetary health in the past year. (3 points)	
Yes, the medical school has offered **one** elective whose primary focus is ESH/planetary health in the past year. (2 points)	
The medical school does **not** have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a **lecture** on planetary health. (1 points)	
No, the medical school has **not** offered any electives on planetary health or electives that include ESH/planetary health topics in the past year. (0 points)	
Score Assigned:	2
Score explanation: Vanderbilt University School of Medicine offers a four-week elective course, "Ecology and Health: Climate, Food and Justice", which is open to third- and fourth-year medical students. Modules include "Climate Change & Social Determinants of Health", "Climate Policy as Health Policy", "Climate Change & Food Systems", "Healthcare Decarbonization & Sustainability", and "Communicating Climate Change in an Age of Misinformation & Polarization." There are also certificate programs for health equity and global health which discuss concepts pertaining to planetary health and medical sustainability, though this is not the specific focus of these programs.	

Curriculum: Health Effects of Climate Change

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

This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Score explanation:
M1 year: The Microbes & Immunity Block discusses the impact of rising temperatures and changing climate on the incidence of various infectious diseases around the world, such as Valley Fever. The Renal & Digestion block includes lectures on Acute Kidney Injury (AKI) and Chronic Kidney Disease (CKD); the AKI lecture delineates the different types of AKI and discusses how incidence of prerenal AKI is increased by extreme heat. Additionally, the relationship between increased ambient temperature and increased incidence of urinary tract infections (especially in women) is covered during the renal pathology lectures. A lecture is planned to be integrated into the Reproduction & Endocrine block this Spring exploring the relationship between heat exposure and pregnancy outcomes.

M2 year: Clinical-phase students receive a student-led session during the Medicine clerkship which explores the effect of extreme heat on heart and kidney disease, with a focus on dehydration in the context of polypharmacy. Similarly, during the Neurology clerkship, block directors highlight the connection between extreme heat and multiple sclerosis exacerbations (Uthoff's phenomenon) in a case-based didactic session that all students attend.

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Source explanation:
M1 year: During the Brain, Behavior, & Movement block, natural disasters are mentioned in relation to PTSD and trauma-informed care. During the Microbes & Immunity block, the impact of natural disasters on different infectious diseases, such as cholera, is also explored.

M2 year: As part of the Foundations of Healthcare Delivery (FHD) course, clerkship-phase students receive a lecture on planetary health and medical sustainability, which discusses the impact of extreme weather on both individual health and healthcare systems. As part of this

session, students in the Neurology and Psychiatry clerkships will share a patient case which explores the impact of extreme weather on mental health.

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Score explanation: *M1 year: In an introductory lecture for the Microbes & Immunity block, it is mentioned that climate change, weather, and changing ecosystems will affect the emergence and distribution of infectious diseases. Throughout the block, climate is mentioned in relation to vector patterns for mosquito- and tick-borne illnesses (e.g., flaviviruses, togaviruses), as well as rotavirus, influenza, and RSV. A lecture on food-borne illnesses covers the impact of increasing temperatures on these pathogens and their increased likelihood of transmission during warmer months. In a lecture on herpesviruses, students are taught about elephant endotheliotropic herpesviruses and herpes-like viruses and their respective effects on species conservation and coral reef destruction. Additionally, students are taught that adverse weather events such as wind storms are associated with Coccidioides outbreaks, but the effect of climate change is not addressed. During the Renal & Digestion block, students had two relevant case-based learning (CBL) cases - one discussing the association between climate change and increased spread of infectious hepatitis, and another discussing the risks of proton pump inhibitor use in relation to climate-related changes in infectious disease patterns.*	

1.5. Does your <u>medical school</u> curriculum address the respiratory health effects of climate change and air pollution?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Source explanation:
M1 year: During the Homeostasis block, students are given a reading which presents information about pollutant-induced airway hyperresponsiveness. Lectures during this block discuss the importance of considering industrial hazards and air pollution as factors in the etiology and pathogenesis of lung cancer and interstitial lung disease. Exposure to fumes and industrial hazards are mentioned as risk factors for developing COPD and lung cancer. Students complete a CBL case on COPD, in which air pollution is a potential risk factor to be discussed. Additionally, a lecture on pharmacology of the autonomic nervous system during the cardiovascular portion of the Homeostasis block mentions the deaths resulting from the Bhopal gas disaster, which involved a leakage of Sevin, an insecticide. During the Renal & Digestion block, students learn how decreased air quality is linked to increased incidence of membranous nephropathy and eosinophilic esophagitis.

M2 year: As part of FHD, clerkship-phase students receive a lecture on planetary health and medical sustainability, which discusses the impact of extreme weather on both individual health and healthcare systems. As part of this session, students in the Pediatrics clerkship will share a patient case which explores the impacts of air pollution on asthma.

1.6. Does your <u>medical school</u> curriculum address the cardiovascular health effects of climate change, including increased heat	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Score explanation:
M1 year: The Homeostasis block discusses air pollution as a risk factor for arteriosclerosis.

M2 year: Clinical-phase students receive a student-led session during the Medicine clerkship which explores the effect of extreme heat on heart and kidney disease, with a focus on dehydration in the context of polypharmacy. Similarly, clerkship-phase students receive an FHD lecture on planetary health and medical sustainability, which discusses the impact of extreme weather on both individual health and healthcare systems. As part of this session, students in the Medicine clerkship will share a patient case which explores the impacts of extreme heat on cardiovascular health.

Electives: As part of the "Ecology and Health: Climate, Food and Justice" course, students read and discuss "The 2022 report of The Lancet Countdown on health and climate change: Health at the mercy of fossil fuels." This report addresses the cardiovascular health effects of extreme heat and explores global trends in heat-related deaths.

1.7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: *M1 year: In the Brain, Behavior, & Movement block, students are taught about the association between lead-poisoning and ADHD, as well as the relationship between heavy metal exposure and delirium. However, the context of heavy metal exposure (eg, due to environmental degradation vs lead paint in older homes) is not specified or discussed.* *M2 year: Clerkship-phase students receive an FHD lecture on planetary health and medical sustainability, which discusses the impact of extreme weather on both individual health and healthcare systems. As part of this session, students in the Neurology and Psychiatry clerkships will share a patient case which explores the impact of extreme weather on mental health, including discussion of eco-anxiety.* *Electives: As part of the elective course "Ecology and Health: Climate, Food and Justice", there is a session dedicated to mental health, eco-anxiety, and hope.*	

1.8. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: *M2 year: During both the Medicine clerkship and FHD sessions for clinical-phase students, the impact of climate change on food and water security is briefly mentioned.*	

Electives: As part of the elective course "Ecology and Health: Climate, Food and Justice," there is a discussion focused on "Industrialized Food and Alternatives." Readings for this session explore civic agriculture and effects of climate change on nutrient availability. This course also explores both terrestrial and marine food insecurity and undernutrition, as well as increasing droughts and flooding as a consequence of global warming.

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 colour, Indigenous communities, children, homeless populations, and older adults?

This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Score explanation:

M2 year: During both the Medicine clerkship and FHD sessions for clinical-phase students, the disproportionate impact of climate change on vulnerable and marginalized populations is briefly mentioned.

M3 year: Third year students participate in a week of FHD programming dedicated to "Public Health, Population Health, and Prevention," during which these subjects are touched on. This topic is also discussed during a recurring lecture titled "Health and Environmental Justice" given during the "Community Healthcare: Patients, Populations, and Systems" Integrated Science Course.

Electives: As part of the elective course "Ecology and Health: Climate, Food and Justice," there is a session titled "Climate Change and Social Determinants of Health: Focus on Vulnerable and Marginalized Populations." Readings for this session explore the impact of climate health on vulnerable populations, including indigenous communities, the LGBTQ+ community, etc. This topic is also explored in another session of the elective course titled "Environmental Justice and Health Equity."

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2

Score explanation:

M2 year: During both the Medicine clerkship and FHD sessions for clinical-phase students, the disproportionate impact of climate change on vulnerable and marginalized populations is briefly mentioned. This includes discussion of inequities present in Middle Tennessee, such as the impact of redlining on home weatherization, urban heat islands, and proximity to highways and other health hazards.

M3 year: Third year students participate in a week of FHD programming dedicated to "Public Health, Population Health, and Prevention," during which these subjects are touched on.

Electives: As part of the elective course "Ecology and Health: Climate, Food and Justice," students read and discuss "The 2022 report of The Lancet countdown on health and climate change: health at the mercy of fossil fuels," which addresses this concept. A deeper dive into this topic is performed through sessions titled "Climate Migration and Disease" and "Environmental Justice and Health Equity." During the latter session, the legacy of colonialism with respect to climate impacts and reparations to LMICs is discussed.

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

1.11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1

Score explanation:

M1 year: During the Human Blueprint and Architecture block, exogenous chemicals and gasses and their impacts on cell signaling and DNA damage is mentioned. However, there is no specific discussion with regards to how environmental toxin exposure is detrimental to reproductive health.

Electives: As part of the elective course "Ecology and Health: Climate, Food and Justice," students discuss the effects of rising temperatures on pregnancies on an international scale.

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

This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Score explanation:

M1 year: The Foundations of Physician Responsibility (FPR) course discusses differences across Nashville neighborhoods, including redlining and racially motivated public construction projects. Students in this course are expected to research different neighborhoods surrounding the university in terms of their "built environment." Part of the ensuing discussion includes differences in accessibility of green spaces between these neighborhoods. During another component of this course, students are expected to conduct a home visit for a patient and consider their home environment. Topics students are asked to consider include housing and zoning of the patients' neighborhoods, quality of open and green spaces, natural spaces and boundaries, and signs of neighborhood decay.

M2 year: Clerkship-phase students receive an FHD lecture on planetary health and medical sustainability, during which the disproportionate impact of climate change on vulnerable and marginalized populations is briefly mentioned. This includes discussion of inequities present in the Nashville metropolitan area, such as the relationship between redlining and the Nashville neighborhoods and communities that are most at risk of harm from environmental threats.

M3 year: These topics are discussed as part of a recurring lecture titled "Health and Environmental Justice" given during the "Community Healthcare: Patients, Populations, and Systems" Integrated Science Course.

Electives: As part of the "Ecology and Health: Climate, Food and Justice" elective course, students spend one week examining healthcare's contribution to climate change and opportunities for sustainable adaptation.

1.13. To what extent does your <u>medical school</u> emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?

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

Score Assigned:	1

Score explanation:
M1 year: The topic of Indigenous knowledge and value systems has not been explicitly addressed in either the Foundations of Medical Knowledge (FMK) or Foundations of Physician Responsibility (FPR) courses, which are required of all first-year students. However, in FPR, there are learning modules (Tophat) that discuss the role of value systems other than the Western one, and how diversity in beliefs/value systems among patients can impact care.

Electives: This topic is addressed in detail as part of the "Ecology and Health: Climate, Food and Justice" elective course. Readings in this course include the following: "Embedding Indigenous knowledges and voices in planetary health education" (Brand et al), "Indigenous Peoples: Traditional knowledges, climate change, and health" (Redvers et al), and "How Native Tribes Are Taking the Lead on Planning for Climate Change" (Jones).

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?
This topic was explored **in depth** by the **core** curriculum. (3 points)
This topic was **briefly** covered in the **core** curriculum. (2 points)
This topic was covered in **elective** coursework. (1 point)
This topic was **not** covered. (0 points)

Score Assigned:	2

Score explanation:
M1 year: First-year students receive an FPR lecture on health equity ("Social Determinants of Health") which explains that the sum total of a person's health is dependent not only on access to healthcare, but also socioeconomic factors, the physical environment, and health behaviors. In this lecture, environmental toxins are used as an example of one of the components of an individual's physical environment that can contribute to poorer health outcomes. The lecture discusses that these drivers of health contribute to disparities observed in communities of color and those with low SES.

M2 year: During both the Medicine clerkship and FHD sessions for clinical-phase students, the disproportionate impact of climate change on vulnerable and marginalized populations is briefly mentioned. *Electives: This topic is addressed in detail as part of the "Ecology and Health: Climate, Food and Justice" elective course. Guest faculty whose research is focused on this topic are present for several sessions.*

Curriculum: Sustainability

1.15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: *Electives: As part of the "Ecology and Health: Climate, Food and Justice" elective course, students read "The 2022 report of The Lancet countdown on health: health at the mercy of fossil fuels." One section of the report details diet and health co-benefits of a diet that limits red meat consumption. Additionally, the course has an entire session titled "Agriculture, Land Use, Industrialized Food, Food Security," in which this topic is discussed.*	

1.16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation:	

M1 year: Carbon footprint is not explicitly discussed in any Foundations of Medical Knowledge (FMK) courses. However, in the FPR course, there is a panel of researchers who speak to the M1 class about opportunities to pursue other roles on top of just being a physician. One of these researchers represented the "sustainability" path, and explained how their work centers around reducing the amount of waste produced in hospitals, which is related to carbon footprint.

M2 year: As part of the FHD course, students are given sessions on the cost of healthcare (including management, resources, tests/orders in the hospital, etc.), which includes both monetary costs and impact on the environment. Later in the FHD curriculum, students are given a lecture on planetary health and medical sustainability, during which the carbon footprint of the healthcare industry is discussed. As part of this session, students in the Obstetrics & Gynecology and Surgery clerkships will share patient cases that highlight and discuss various ways in which medical practice contributes to environmental degradation (e.g., waste production, medical imaging, water use).

Electives: As part of the "Ecology and Health: Climate, Food and Justice" elective course, there is a session titled "Healthcare Decarbonization and Sustainability" which is dedicated to this topic.

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	**Score**
The health **and** environmental **co-benefits** of **avoiding** over-medicalisation, over-investigation and/or over-treatment. (2 points)	0
The environmental impact of **pharmaceuticals** and over-prescribing as a cause of climate health harm. Alternatively teaching on **deprescribing** where possible and its environmental and health co-benefits would fulfil this metric. (2 points)	0
The health **and** environmental **co-benefits** of **non-pharmaceutical management** of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK. (1 point)	0
Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	1
The impact of **anaesthetic** gases on the healthcare carbon footprint and ways to reduce anaestheisa's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions. (1 point)	1
The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers. (1 point)	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) (1 point)	1

Score explanation:

M1 year: Through the preclinical curriculum, students are taught about non-pharmaceutical management of conditions such as diabetes and obesity. This is discussed further within the FPR course in the context of social determinants of health and access to healthcare. The specific benefits of social prescribing are not discussed in detail, and are not related to environmental co-benefits. During the Microbes & Immunology block, however, the health benefits of avoiding over-treatment are discussed within the context of antibiotic resistance to draw attention to the importance of antibiotic stewardship. During the Renal & Digestion block, students are taught about the amount of waste produced by colonoscopies and strategies to reduce waste production in routine medical screening. During a CBL case for this block, students are directed to investigate the amount of waste produced by endoscopy and strategies to reduce waste production, including avoidance of over-investigation with unnecessary endoscopies.

M2 year: Through the FHD curriculum, clinical-phase students explore polypharmacy, its negative impact on patients, and deprescribing medications. This course also emphasizes the importance of avoiding excessive investigation of labs and imaging. However, environmental co-benefits are not mentioned for any of these topics. Later in the FHD curriculum, students are given a lecture on planetary health and medical sustainability, during which the environmental impact of various common healthcare practices are discussed. As part of this session, students in the Obstetrics & Gynecology and Surgery clerkships will share patient cases that highlight and discuss various ways in which the healthcare system contributes to environmental degradation including medical waste production, anesthetic gas use, and other aspects of surgical practice. Moreover, students in the Pediatrics clerkship will share a patient case that highlights the impact of inhaler use on the environment.

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum. (2 points)	
Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework. (1 points)	
No, there are **not** strategies introduced for having conversations with patients about climate change. (0 points)	
Score Assigned:	2

Score explanation:

M1 year: A component of the FPR course teaches skills essential to interviewing patients. There is no discussion during this course about having conversations about the effects of climate change on health. however.

M2 year: Clinical-phase students receive a student-led session during the Medicine clerkship which explores the effect of extreme heat on heart and kidney disease, with a focus on dehydration in the context of polypharmacy. As part of this session, students learn strategies for talking with patients about how climate change impacts their health.

Electives: As part of the "Ecology and Health: Climate, Food and Justice" elective course, there is one class on the topic of "Communicating Climate Change in the Age of Misinformation and Polarization."

1.19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?	
Yes, the **core** curriculum includes strategies for taking an environmental history. (2 points)	
Only **elective** coursework includes strategies for taking an environmental history. (1 point)	
No, the curriculum does **not** include strategies for taking an environmental history. (0 points)	
Score Assigned:	2
Score explanation: *M1 year: A component of the FPR course teaches basic physical exam maneuvers and how to interpret findings as well as the skill of history taking. This includes assessment of "occupational exposures," though there are no specific lectures regarding strategies to assess environmental and exposure history.* *M2 year: Clinical-phase students receive a student-led session during the Medicine clerkship which explores the effect of extreme heat on heart and kidney disease, with a focus on dehydration in the context of polypharmacy. As part of this session, students learn about environmental considerations important to history taking and how to incorporate these into patient conversations. Clerkship-phase students also receive an FHD session on planetary health and medical sustainability, during which there are small group sessions in which students discuss clerkship-specific cases meant to highlight ways in which climate change can affect health and environmental exposures to consider when assessing a patient.*	

Curriculum: Administrative Support for Planetary Health

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

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

Score Assigned:	4

Score explanation: The medical school is in the process of making major improvements to planetary health education. This effort is largely student-led and faculty-supported, based in the "Climate Health Curriculum Proposal", which was drafted and approved in 2023. Since the approval of this proposal, planetary health education has been integrated into multiple areas of the curriculum, including the core preclinical curriculum for first-year students, the core clinical curriculum for second-year students, as well as the Foundations of Physician Responsibility and Foundations of Healthcare Delivery longitudinal courses. Curricular integration remains ongoing, and faculty and deans remain engaged and supportive.

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

Score Assigned:	4

Score explanation: There are now multiple sessions in the core curriculum, specifically during the clinical-phase, which discuss planetary health topics including the impact of climate change on patient health and health systems, medical sustainability, and incorporation of planetary health considerations into individual practice. These sessions are in addition to planetary health topic integrations throughout the core curriculum. For example, preclinical blocks in the first-year curriculum (e.g., Microbes & Immunity and Renal & Digestion) have now incorporated elements of planetary health across several lectures as applicable; the same is true for group-based sessions like CBL. The FHD longitudinal course has also incorporated topics related to climate change and the medical carbon footprint into lectures and small-group sessions.

1.22. Does your medical school employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?

Yes, the **medical school** has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)	
No, the **medical school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)	
Score Assigned:	0
Score explanation: While there are faculty members who are interested in planetary health and involved in the process of the curricular changes proposed, at present there is no designated faculty mentor to oversee implementation of the topic of planetary health/sustainable healthcare into the curriculum. As such, this remains a largely student-driven effort. There is an Environmental and Sustainability Working Group (ESWG) at the medical center, which meets monthly to bimonthly and includes various faculty and attendings who are interested in planetary health and sustainable healthcare. However, none of these individuals are dedicated faculty within the medical school.	

Section Total (51 out of 72)	**70.83%**

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Interdisciplinary Research

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

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your institution?	
Yes, there are faculty members at the **institution** who have a **primary** research focus in planetary health **or** sustainable healthcare/vetcare. (3 points)	
Yes, there are individual faculty members at the **institution** who are conducting research **related** to planetary health or healthcare sustainability, OR are part of a national/international sustainability working group, but it is not their primary research focus. (2 points)	
There are sustainability researchers at the **institution**, but not specifically associated with healthcare/vetcare. (1 point)	
No, there are **no** planetary health and/or sustainability researchers at the **institution** at this time. (0 points)	
Score Assigned:	3
Score explanation: Vanderbilt University School of Medicine has several faculty members whose primary focus is planetary health. One faculty member is an Assistant Professor of Dermatology whose research focuses on the health effects of climate change. Additionally, she is the Co-Chair of American Academy of Dermatology's Expert Resource Group on Climate and Environmental Issues, a member of the International Society of Dermatology's Committee on Climate Change, a member of the Cochrane Climate-Health Working Group, and a faculty supervisor for the Climate Resources for Health Education initiative lead by the Global Consortium on Climate and Health Education. She lectures nationally and internationally and frequently publishes on this topic including the following recent publications: Dermatological societies and their climate change and sustainability commitment through 2024 (PMID: 39660563), a review on the impact of climate change on skin health and dermatologic disease (PMID: 37336870), an examination of intersectionality of the impact of climate change on atopic dermatitis and mental health comorbidities (PMID: 36639925), Public Health Risks, Dermatological Manifestations, and Environmental Justice Associated With Vinyl Chloride Exposure (PMID: 37676716), and Dermatology's call to emergency action on climate change (PMID: 36073606). She is also piloting an e-consent program in Dermatology to decrease paper waste. She founded and co-chairs the Environmental Sustainability Working Group at VUMC, is the Course Director for the Ecology and Health Advanced Elective, and served on the Mayor of Nashville's Sustainability Advisory	

Committee as the only physician. The VUMC Department of Radiology is actively involved in planetary health research and advocacy, and has a new Global Health & Sustainability initiative. The Department has partnered with Royal Phillips on a project to measure and address energy consumption of diagnostic imaging devices with the end goal of publishing their findings to guide industry efforts. The Department also launched a Climate Action and Sustainability Pilot Grant initiative in April 2023. One faculty member, who joined the Department of Radiology as an Associate Professor and the Department's first Vice Chair of Global and Planetary Health in November 2022, researches and advocates for sustainable radiology practices. He was recently the senior author on the Association of University Radiologists Committee on Climate Change and Sustainability's statement (PMID: 37438160). Another faculty member, the former Carol D. and Henry P. Pendergrass Professor and Chair of Radiology, stepped down from his Chair in June 2023 to spend a sabbatical year focused on climate change and sustainability. He also recently helped create a toolkit for action on climate change in radiology (PMID: 37070994). He is also the founder and CEO of the Greenwell Project, a new research initiative to bring patients into sustainable medicine decisions and is the founder of The Green Leap, a blog about sustainable healthcare. Finally, three faculty members in the Department of Radiology (one who is Assistant Professor, one who is Professor and Section Chief of Pediatric Radiology, and one who is Associate Professor) recently authored a review on the importance of planetary health in pediatric radiology (PMID: 37962606). Additionally, another radiologist has published several articles on decreasing the radiology department's environmental impact, and recently authored a paper on reducing waste in the IR suite (PMID: 38042233) and using multi-dose vs single-dose iodinated contrast (PMID: 36621442). The VUMC Radiology Department also disseminated an "EcoRadiology Survey"to faculty and trainees in radiology to gather data on the opinion of importance of sustainability measures. One faculty member has also been studying the environmental impact of VUMC's Radiology Department. He recently published a research article, "Environmental Life Cycle Assessment of a U.S. Hospital-based Radiology Practice (PMID: 39589247). One neurologist is active in advocacy for climate change and has also published articles related to climate change. A professor of structural biology at VU has done a lot of work helping laboratory spaces at Vanderbilt become more green and sustainable through the Center for Structural Biology Green Team. An anesthesiologist at VUMC has been heading a "Greening Anesthesia" effort at VUMC, including an initiative to alert providers about best practices for sustainability in EPIC. An allergist/immunologist studies disparities in exposure to fossil fuel air pollution in TN and the effect this has on maternal and child health. There is also a Climate Health and Energy Equity Lab (CHEEL) as a part of the Vanderbilt Wondry (co-founded by three faculty members), where several research initiatives are ongoing. A majority of these faculty members are part of an Environmental and Sustainability Working Group (ESWG) that meets monthly to bi-monthly to discuss efforts around the institution to increase sustainability. One of the CHEEL lab faculty members serves on the Metro Nashville Board of Health, the Lancet Commission Countdown on Climate and Health, the Tennessee Urban Forestry Council, and the American Nurse Association's Planetary and Global Health Innovation Committee. She recently published an article on climate health as a determinant of health (PMID: 37866837).

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?

There is **at least one** dedicated department or institute for interdisciplinary planetary health research. (3 points)
There is **not currently** a department or institute for interdisciplinary planetary health research, but there are **plans** to open one in the next 3 years. (2 points)
There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research. (1 points)
There is **no** dedicated department or institute. (0 points)

Score Assigned:	3

Score explanation: In 2025, Vanderbilt officially launched the Vanderbilt Center for Sustainability, Energy, and Climate (VSEC), a multimillion dollar investment part of the university's Dare to Grow campaign. VSEC will advance multidisciplinary research (including partnerships with communities, government, industry, national laboratories, and other universities) to investigate climate change mitigation and adaptation; systems risk, reliability, and resilience; resource sustainability; and energy integration.

Moreover, Vanderbilt University is home to the Office of Environmental Health, Safety, and Sustainability, which operates with the goal of fostering sustainable action in and around the Vanderbilt community, commissioning multiple comprehensive operational studies to better understand and develop solutions to address the university's environmental impact. There are multiple interdisciplinary academic programs and centers including the program in Climate and Environmental Studies, which offers coursework at the intersection of climate and health, the Vanderbilt Institute for Energy and Environment (VIEE), and the Vanderbilt Climate Change Initiative, which is a multidisciplinary program to engaged in climate health related projects. Vanderbilt's professional schools are also associated with climate research initiatives, including the Wond'ry and School of Nursing's Climate, Health, & Energy Equity Lab (CHEEL) and the School of Law's Climate Change Research Network. Though there are no current groups associated with the School of Medicine or Medical Center, the Department of Radiology is leading a Climate Change & Sustainability initiative and hosted the inaugural Climate Action & Sustainability Summit in December 2023. There is also a VUMC Occupational Health department.

2.3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your institution?
Yes, there is a process in which community members impacted by climate and environmental injustice have **decision-making power** in the climate + environmental research agenda. (3 points)
Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda. (2 points)
No, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda. (1 points)

There is **no** process, and **no** efforts to create such a process. (0 points)	
Score Assigned:	1
Score explanation: There is currently no official process or efforts to create such a process. However, individual research projects occurring at VUMC may have their own separate process for eliciting community input. The VUMC Office of Health Equity conducts a yearly Community Health Needs Assessment (CHNA) of the counties surrounding VUMC in Middle TN. The assessment includes an environmental scan of county-specific reports which includes food insecurity and air pollution and interviews with community members and leaders. However, the report does not ask community members for input on research at VUMC, and there is no specific process by which communities disproportionately impacted by climate change can submit input on the research agenda at VUMC.	

2.4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?	
There is an **easy-to-use, adequately comprehensive** website that **centralises** various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities. (3 points)	
There is a website that **attempts to centralise** various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive. (2 points)	
The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment. (1 point)	
There is **no** website. (0 points)	
Score Assigned:	3
Score explanation: Vanderbilt University's Office of Environmental Health, Safety, and Sustainability has a website that outlines the university's sustainability initiatives along with its annual sustainability reports. The page describes the initiatives taken to reach the carbon neutrality goal of 2020 and future goals for 2050. These initiatives are broadly applicable across the university. The VUMC Office of Research does have a web page dedicated to research sustainability, however, which provides information and resources as well as links current efforts associated with the medical institution.	

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health?
Yes, the **institution** has hosted at least one conference or symposium on topics related to planetary health in the past year. (4 points)

Yes, the **institution** has hosted at least one conference or symposium on topics related to sustainable healthcare/vetcare in the past year. (3 points)
Yes, the **institution** has hosted a conference on topics related to planetary health / sustainable healthcare/vetcare in the past three years. (2 points)
The **institution** has not hosted any conferences directly, but they have provided financial support for a local planetary health event. (1 point)
No, the **institution** has not hosted a conference on topics related to planetary health in the past three years. (0 points)

Score Assigned:	4

Score explanation: Vanderbilt Law School hosted the Bypassing Climate Polarization Conference on October 4, 2024, which was dedicated to exploring ways to bypass polarization in the climate conversation and reach audiences at the center-right of the political spectrum. On March 19, 2025, the Vanderbilt Energy, Environment, & Land Use (EELU) program held the third annual State of the Environment Conference at the Vanderbilt Law School, featuring conversations with environmental experts from academia, government, and industry.

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

Score Assigned:	0

Score explanation: Although the Vanderbilt University School of Medicine is not a member of a planetary health or ESH organization, the School of Nursing is a member of the Global Consortium on Climate and Health Education.

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

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Community Outreach and Advocacy

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

3.1. Does your institution partner with community organisations to promote planetary and health?	
Yes, the **institution** meaningfully partners with **multiple** community organisations to promote planetary and environmental health. (3 points)	
Yes, the **institution** meaningfully partners with **one** community organisation to promote planetary and environmental health. (2 points)	
The **institution** does not partner with community organisations, but has participating in community focused events relating to planetary health. (1 point)	
No, there is **no** such meaningful community partnership. (0 points)	
Score Assigned:	3
Score explanation: The Vanderbilt Educational Garden Initiative (VEGI) is a medical student organization which collaborates with the Vanderbilt University Community Garden and Rooted Community Health to maintain a fruit, vegetable, and herb garden, the produce from which is donated to Shade Tree Clinic patients and their families. Rooted Community Health is an initiative based out of the medical center which partners with nutritional services to "engage partners across the Vanderbilt campus and communities of Middle Tennessee in service to ecological sustainability, health promotion, and human flourishing." Notably, the initiative partners with multiple local farms (Delvin Farms, Caney Fork Farms, Growing Together) in a community-supported agriculture (CSA) program available to VUMC employees and works to provide for VUMC patients through the Food Security Resource Center.	

3.2. Does your institution offer community-facing courses or events regarding planetary health?
The **institution** offers community-facing courses or events at least once every year. (3 points)

The **institution** offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. (2 points)
The **institution** has promoted community-facing courses or events, but was not involved in planning those courses or events. (1 point)
The **institution** has not offered such community-facing courses or events. (0 points)

Score Assigned:	2

Score explanation: Vanderbilt University regularly hosts events focused on planetary health, many of which are open to, but not primarily designed for, the community. For example, in January 2025, Dr. David Padgett, Team Lead for the HBCU Environmental Justice Technical Collaborative and Associate Professor at Tennessee State University presented "Geospatial Technology Applications in Support of Community Based Environmental Justice Research and Advocacy". Additionally, in February 2025, Dr. Veronica Strang of the University of Oxford presented "Littoral Beings: Totemic Sea Country in Aboriginal Australia" which discussed Euro-American agricultural societies practice of draining wetlands and indigenous communities' contemporary efforts to protect their homelands. A final example includes the Distinguished Lecture on Climate Governance that was given in September 2024 by Dr. J Marshall Shepherd, an award-winning meteorologist, Professor at the University of Georgia, and leading expert on climate change.

3.3. Does your institution have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?
Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)
Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. (1 point)
Students **do not** receive communications about planetary health or sustainable healthcare. (0 points)

Score Assigned:	0

Score explanation: The medical school does not send out regular updates of issues related to planetary health or sustainable healthcare. On the institutional level, students receive biweekly emails from Vanderbilt University which include information on sustainability efforts; however, these are not related to healthcare.

3.4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?

Yes, the **institution** or **main affiliated hospital trust** offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health. (2 points)
Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate provider. (1 point)
There are **no** such accessible courses for post-graduate providers. (0 points)

Score Assigned:	0

Score explanation: There are currently no accessible courses for postgraduate providers. The Masters of Public Health (MPH) program at Vanderbilt, which many postgraduate trainees enroll in, does teach environmental health exposures as a part of its curriculum, but these materials are not available to all postgraduates at VUMC and do not necessarily focus on planetary health.

3.5. Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about environmental health exposures?
Yes, the **institution** or **<u>all</u> affiliated hospitals** have accessible educational materials for patients. (2 points)
Some affiliated hospitals have accessible educational materials for patients. (1 point)
No affiliated medical centres have accessible educational materials for patients. (0 points)

Score Assigned:	1

Score explanation: Occupational Health at VUMC has several educational materials including brochures and online information for patients about environmental health exposures. Examples include information about chemical spills, airborne exposures, and biological waste with information on risks, treatments, and prevention strategies associated with each exposure. Occupational health also receives reports of smells or exposures in the institution and works with Environmental Services to do an air quality check and alleviate the problem in that area.

3.6. Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about the health impacts of climate change?
Yes, the **medical school** or **<u>all</u> affiliated hospitals** have accessible educational materials for patients. (2 points)
Some affiliated hospitals have accessible educational materials for patients. (1 point)
No affiliated hospitals have accessible educational materials for patients. (0 points)

Score Assigned:	2
Score explanation: Vanderbilt Children's Hospital, Vanderbilt University Hospital and the Nashville VA are the affiliated hospitals of Vanderbilt School of Medicine. "Vanderbilt Health DNA: Discoveries in Action" is a podcast produced by Vanderbilt Health. These episodes are free online and geared toward the public. The podcast hosted 2 climate and health conversations via Twitter Spaces chats on 11/13/22 and 11/14/22. VUMC had an inaugural Climate Action and Sustainability Summit on 12/7/23, hosted by the Department of Radiology, to explore and operationalize climate-friendly business practices; the event was open to the public.	

Section Total (8 out of 14)	**57.14%**

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Support for Student-Led Planetary Health Initiatives

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

4.1. Does your institution offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)	
The **institution** encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate. (1 point)	
No, the institution does not offer opportunities or support for sustainability initiatives or QI projects (0 points)	
Score Assigned:	1
Score explanation: The Vanderbilt MD curriculum requires that all students complete a quality improvement (QI) project during the third and fourth years through the longitudinal Foundations of Healthcare Delivery (FHD) course. Some students have elected to conduct sustainability QI projects to satisfy this requirement. For example, a student completed a sustainability QI project related to OR waste in interventional radiology suites. Additionally, during the first week of third year there is a FHD Immersion course through which students are provided with an introduction to the QI process and learn more about the public health system and healthcare delivery. During this week, there was a "Faces of Public Health" panel in which students were introduced to physicians and researchers who are incorporating climate conscious efforts into their everyday practice as well as members of the Vanderbilt Climate, Health, and Energy Equity Lab (CHEEL Lab). Members of the CHEEL lab discussed the projects they were currently working on as well as opportunities for medical student involvement through sustainability-focused QI projects.	

4.2. Does your institution offer opportunities for students to do research related to planetary health and/or sustainable healthcare/vetcare?
The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare/vetcare research. (2 points)

There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these **require student initiative** to seek these out and carry them out in their spare time. (1 point)
There are **no opportunities** for students to engage in planetary health/sustainable healthcare research. (0 points)

Score Assigned:	1

Score explanation: During the third year Foundations of Healthcare Delivery (FHD) Immersion week course, students had the opportunity to meet with members of the Vanderbilt Climate, Health, and Energy Equity Lab (CHEEL Lab) and learn about research projects they could pursue. At present, there is no funding source for students specifically interested in planetary health/sustainable healthcare research. However, there are general funding sources for medical student research such as the Medical Scholars Program that could likely be applied to a research project related to planetary health.

4.3. Does the institution have a webpage where students can find specific information related to planetary health and/or sustainable healthcare/vetcare activities and mentors within the institution? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.
The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)
There is an institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the institution, but it lacks key information. (1 point)
There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)

Score Assigned:	0

Score explanation: There is no medical-school specific webpage, nor is there a larger institutional planetary health website. Vanderbilt University does have a sustainability-specific website.

4.4. Does your institution have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?
Yes, there is a student organisation **with faculty support** at my institution dedicated to planetary health or sustainability in healthcare. (2 points)

Yes, there is a student organisation at my institution dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.** (1 point)	
No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)	
Score Assigned:	2
Score explanation: The Social Mission Committee (SMC) at Vanderbilt Medical School is a broad organization that encompasses all student organizations related to service, health equity, etc. There are projects within SMC including the Planetary Health Report Card that are dedicated to planetary health. Through SMC, we are also working with faculty and deans to propose a Climate Change and Health Proposal for the core curriculum. We have faculty support through the Vanderbilt Center for Biomedical Ethics, which also runs the elective course offered to medical students about climate change and health. Additionally, last year we founded a VUSM chapter of Medical Students for a Sustainable Future (MS4SF), which is a national organization focused on giving medical students the skills to engage in climate-smart healthcare. Our chapter's mission is "...to effect change in the Vanderbilt medical community as well as the Nashville community through advocacy, curriculum reform, and climate change informed health care."	

4.5. Is there a student liaison representing sustainability interests who serves on a <u>department or institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	1
Score explanation: The Vanderbilt University School of Medicine's Wellness Committee has a dedicated student board position (Sustainability and Service chair) to represent sustainable interests. Currently, three students fill this board position and work closely with the other members of the Wellness Committee as well as the School of Medicine deans to engage the medical student body in sustainable action and advocate for adoption of more sustainable practices and education within the School of Medicine.	

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)	**Score**
Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.	1

Panels, speaker series, or similar events related to planetary health that have students as an intended audience.	1
Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.	1
Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	1
Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.	1
Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	1

Score explanation: The Vanderbilt Education Garden Initiative (VEGI) is a medical-student-run organization that has planting events open to medical students.

The Medical Students for a Sustainable Future (MS4SF) student group has held several panels related to planetary health. A climate health research panel (with faculty members from anesthesiology, dermatology, and radiology) was held on May 21, 2024 to introduce students to different opportunities for planetary health research in various specialties. An advocacy session was held by AMA-TMA, which included speakers focused on environmental justice and ways for students to get involved.

The student organization Students Promoting Environmental Awareness and Responsibility (SPEAR) hosted a sustainable art gallery in which 30 pieces were displayed around Alumni Hall. The art of VU students (using upcycled materials) was also featured in the Trash Talk exhibition *from April 1-29 2023 at Turnip Green Creative Reuse. Additionally, a new initiative by the Curb Center resulted in the launch of the Vanderbilt Eco-Grief Institute, "a yearlong collaborative project that will use art as a tool to investigate the complex set of emotions- sorrow, grief, terror, complicity, and a range of others- that come to mind as we contemplate or changing climate and witness its effects on earthly life." Lastly, a new podcast called the* Art of Interference *was launched on October 20, 2023 and "dives deep into the intersection of art, climate change, and humanity's relationship with the natural world.*

The student organization, AMA-TMA, hosted a book club for the book "EnviroMedics: The Impact of Climate Change on Human Health".

The student organization SPEAR organized a river cleanup on October 7. Additionally, groups such as Urban Green Lab, Civic Design Center, TN Environmental Council, Cumberland River Compact have volunteer opportunities related to building community resilience to anthropogenic environmental impacts. Medical Students for a Sustainable Future (MS4SF) has also organized cleanups of local parks in collaboration with the sustainability section of the student Wellness group.

Our medical school also has a Wilderness Medicine Society that organizes backpacking, kayaking, etc. for all medical students.

Section Total (11 out of 15)	**73.33%**

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Campus Sustainability

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

5.1. Does your institution have an Office of Sustainability?	
Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is **at least one designated staff member** for sustainability at the hospital. (3 points)	
There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but **no specific staff member** in charge of hospital sustainability. (2 points)	
There are **no salaried sustainability staff,** but there is a sustainability task force or committee. (1 point)	
There are **no** staff members **or** task force responsible for overseeing campus sustainability. (0 points)	
Score Assigned:	2
Score explanation: Vanderbilt University has the Office of Environmental Health, Safety, and Sustainability, which includes two full time positions dedicated specifically to sustainability: Director of Sustainability and Program Manager of Sustainability. The EHSS Office manages campus infrastructure in a sustainable and cost-efficient manner and has a Sustainability Advisory Committee (SAC) composed of students, faculty, and staff that advises University administration. While the Assistant Vice Chancellor of EHSS coordinates sustainability and environmental compliance programs across the academic campus and medical center, there is no specific staff position or department for sustainability at the School of Medicine or Medical Center.	

5.2. How ambitious is your institution's plan to reduce its own carbon footprint?
The institution has a **written and approved plan** to achieve carbon neutrality by **2030** (5 points)
The institution has a **written and approved plan** to achieve carbon neutrality by **2040** (3 points)

The institution has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate** (1 point)	
The institution does **not** meet any of the requirements listed above (0 points)	
Score Assigned:	5
Score explanation: Vanderbilt University, through a collaboration with the nonprofit organization Climate Vault, has aimed to address the full extent of its carbon footprint and was able to achieve carbon neutrality in 2021, decades ahead of its initial goal (2050). The initiative effectively removes carbon pollution permits from regulated carbon markets while simultaneously stimulating research into emerging carbon removal technologies. While the university has since continued to push action and innovations on several fronts (e.g. partnering with Clearloop, Silicon Ranch, Nashville Electric Service, and Tennessee Valley Authority to build several solar farms), it identified the near-term opportunity to work with Climate Vault and use the cap-and-trade market—which is designed to limit harmful emissions—to accelerate its impact, allowing it to become the first member of the Association of American Universities to achieve carbon neutrality.	

5.3. Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?	
Yes institution buildings are **100%** powered by renewable energy. (3 points)	
Institution buildings source **>80%** of energy needs from off-site and/or on-site renewable energy. (2 points)	
Institution buildings source **>20%** of energy needs from off-site and/or on-site renewable energy. (1 point)	
Institution buildings source **<20%** of energy needs from off-site and/or on-site renewable energy. (0 points)	
Score Assigned:	1
Score explanation: Eskind Biomedical Library, the main medical school building at Vanderbilt, is one of the 24 LEED-certified buildings on Vanderbilt's campus. Vanderbilt Health One Hundred Oaks, the home of various clinic rotations, was the first Vanderbilt Medicine building to become LEED certified. The Vanderbilt Technologies for Advanced Genomics (VANTAGE) Laboratory and the School of Nursing are also LEED-certified. *Buildings on campus receive energy from both off-site and on-site renewable energy sources. The on-campus Combined Heat and Power (CHP) plant uses natural gas to produce ~25% of campus electricity, all of the steam, and a portion of the chilled water consumed by the Vanderbilt community. This steam is then used for 90% of campus heating, sterilization, and 40% of campus cooling.*	

The remaining electricity is purchased from Nashville Electric Service which sells power generated by TVA. The fuel mix for TVA can be found on page 12 of this report: https://d18rn0p25nwr6d.cloudfront.net/CIK-0001376986/5c6f8465-9e29-436c-b149-2ac0f9514639.html

Vanderbilt currently has a 20kW solar photovoltaic electrical system installed on the roof of Currey Tennis Center with solar panels that generate electricity from the sun's energy. This power is then fed into the Vanderbilt electricity grid, which feeds the entire campus. Vanderbilt also has Solar-powered electronics charging stations and picnic tables.

In 2020, Vanderbilt entered into an agreement with the Tennessee Valley Authority and Nashville Electric Service through TVA's Green Invest program. This partnership facilitates procurement of off-site large-scale renewable energy, with the goal of mitigating campus' greenhouse gas emissions. Vanderbilt is working towards the eventual goal of powering campus entirely with renewable energy and becoming carbon-neutral. In the seven-state TVA region, Vanderbilt is the first customer to partner with a local power company in a similar agreement. The 20-year agreement will support Vanderbilt's goal to power its campus entirely through renewable energy and become carbon neutral by the year 2050. Through this partnership, Vanderbilt unveiled Vanderbilt I Solar Farm, a 35-megawatt solar facility in Bedford County, Tennessee, in April 2023. It was built in collaboration with Nashville Electric, TVA, and Nashville-based Silicon Ranch Corporation, the U.S. solar platform for Shell and one of the largest independent solar power producers in the country. This plant will offset 70 percent of the university's annual indirect greenhouse gas emissions from electricity purchased through Nashville Electric Service. A second farm is planned in Moore County, Tennessee, which will offset the other 30 percent.

5.4. Are sustainable building practices utilised for new and old buildings on the institution's campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
Yes, sustainable building practices are utilised for new buildings on the institution's campus and the **majority** of old buildings **have been retrofitted** to be more sustainable. (3 points)	
Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have **not been retrofitted.** (2 points)	
Sustainable building practices are **inadequately or incompletely** implemented for new buildings. (1 point)	
Sustainability is **not considered** in the construction of new buildings. (0 points)	
Score Assigned:	2
Score explanation: Vanderbilt has a formal set of Sustainable Building Standards that guide how buildings on campus are newly built or largely renovated. The Sustainable Building Standards incorporate FutureVU Sustainability Guidelines, Vanderbilt's carbon neutrality goal, BlueSky	

Vision, Zero Waste goal, ASHRAE 90.1-2016, WELL principles, and other sustainability requirements for materials, etc., apply to all capital projects, and are addressed in all Requests for Proposals issued for new projects and referenced in contracts for architects, design consultants, and construction managers.

There are four tiers within the Sustainable Buildings Standards. Tier 1 includes all new buildings, additions, or full renovations, which should seek LEED Gold certification, Living Building petal, Net Zero, Fitwel, WELL, and/or Zero Waste Certification if possible. Tier 2 include partial renovations or smaller additions, for which some LEED requirements should be sought. Tier 3 includes renovations to energy impacting systems, which should emphasize energy conservation measures. Teams must research energy efficiency and greenhouse gas reduction. Tier 4 includes landscape projects, carpet replacement, roof replacement, repainting, etc. Project teams must consider materials and waste to ensure Vanderbilt's sustainability goals are followed.

Eskind Biomedical Library, the main medical school building at Vanderbilt, is one of the 24 LEED-certified buildings on Vanderbilt's campus. Vanderbilt Health One Hundred Oaks, the home of various clinic rotations, was the first Vanderbilt Medicine building to become LEED certified. The Vanderbilt Technologies for Advanced Genomics (VANTAGE) Laboratory and the School of Nursing are also LEED-certified.

In general, Vanderbilt University has continued to adhere to its sustainable building standards. New buildings, such as the Carmichael Residential College or the Highland Chilled Water Plant, are being designed to achieve LEED Gold certification. The institution is also in the process of enhancing the energy-efficiency of existing utility systems.

VU's sustainable building standards say, "Vanderbilt endeavors to build environmentally responsible, long-lasting, and efficient buildings that will foster healthier and productive learning and working environments. Sustainable building entails design and construction practices that meet specified efficiency, environmental and wellness standards for both indoor and outdoor spaces, resolving much of the negative impact of buildings on their occupants and the environment. A well-designed sustainable building combines reducing environmental impacts, safeguarding, and even improving health of building occupants, and improving economic performance while supporting Vanderbilt's academic mission and strategic goals. Such triple-bottom-line thinking translates into energy savings, financial savings, verified improved building performance, enhanced productivity, increased building value, reduced liability and improved risk management. For Vanderbilt, it means moving into a future where our buildings have a net positive impact.

Vanderbilt's goal is to continuously improve our buildings and building standards to achieve increasing levels of performance, sustainability, and positive environmental and health impacts. These Standards include targets for energy use and greenhouse gas emissions, water conservation, indoor environmental quality, outdoor lighting and noise, and materials, resources & waste."

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

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

Score Assigned:	2

Score explanation: MoveVU is Vanderbilt's mobility and transportation plan to create a sustainable, walkable campus with diverse transportation options. MoveVU aspires to lower Vanderbilt University's current drive alone rate. In 2018, the percent of commuters at Vanderbilt driving alone to work was 79%, which decreased to 49% in 2023. MoveVU offers an online tool to connect Vanderbilt commuters for carpooling and understand other sustainable commute options. MoveVU also offers a daily parking program through which commuters only pay for parking on days on which they drive to campus, and through which they are able to earn a $1 daily incentive for each time they choose a sustainable commute to campus. Vanderbilt has also partnered with Spin to provide e-bike sharing on campus

Moreover, medical students have access to the Nashville Bus system for free with their student ID. There is also a shuttle available for transportation from the VUMC Main Campus and the VUMC One Hundred Oaks (OHO) location that is frequently utilized by medical students as well as residents, staff, and students of other healthcare professions.

5.6. Does your institution have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?
Yes, the institution has **both** compost **and** recycling programs accessible to students and faculty. (2 points)
The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)
There is **no** compost or recycling program at the institution. (0 points)

Score Assigned:	2

Score explanation: Vanderbilt has a robust recycling program including specialized recycling options for electronics, batteries, ink/toner cartridges, lightbulbs, pens and mechanical pencils, and confidential documents. This also includes campus-wide composting options. In addition, Vanderbilt offers earth friendly moving options, providing students with outlets to donate and recycle housing items in bulk. The Vanderbilt research enterprise has also coordinated a Green Labs program, which encourages reuse and recycling in scientific laboratories on campus.

At the School of Medicine, the Eskind Biomedical Library has recycling for paper, plastic, and aluminum, though it does not recycle glass. Recycling within the Medical Center, managed by Facilities Services, is more limited, though efforts are made to coordinate electronic waste recycling. Student-led initiatives are working to jumpstart battery recycling from operating room equipment as well as silicone recycling, though these projects remain in early stages. The Eskind Biomedical Library has also recently introduced compost collection, also managed by Facilities Services.

5.7. Does the institution apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
Yes, the institution has a**dequate s**ustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability. (3 points)	
There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution **is engaged** in efforts to increase food and beverage sustainability. (2 points)	
There are sustainability guidelines for food and beverages, but they are **insufficient or optional.** The institution is **not** engaged in efforts to increase food and beverage sustainability. (1 point)	
There are **no** sustainability guidelines for food and beverages. (0 points)	
Score Assigned:	2
Score explanation: The Vanderbilt University Campus Dining is host to an extensive initiative to improve sustainability for on-campus dining options. There are collaborations with Menus of Change University Research Collaborative (MCURC) to help push students to healthier, more sustainable, plant-forward diets. There are also multiple efforts to improve compost use in the dining courts and beyond. The use of the Fusion and LeanPath software by the dining courts help optimize food buying and production to minimize the waste while still feeding students. They are also engaged in developing local gardens to use. However, the institution does not receive a 3 due to no fully meat-free days or no red-meat.	

5.8. Does the institution apply sustainability criteria when making decisions about supply procurement?
Yes, the institution has **adequate** sustainability requirements for supply procurement **and** is **engaged** in efforts to increase sustainability of procurement. (3 points)
There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **engaged** in efforts to increase sustainability of procurement. (2 points)

There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **not engaged** in efforts to increase sustainability of procurement. (1 point)
There are **no** sustainability guidelines for supply procurement. (0 points)

Score Assigned:	1

Score explanation: "Vanderbilt's Purchasing Services' Department prefers that our suppliers use environmentally-preferable products, materials, and sources wherever economically feasible. If two products are competitive in performance characteristics and pricing, the university will favor the more environmentally-friendly product or company. Procurement Services has worked closely with preferred office products, janitorial products, and laboratory products suppliers to provide more easily identified environmentally-preferable product selections." One can read more about Procurement and Disbursement Services' Green Purchasing Program online or in Section 9.16 of the Procurement Policies and Procedures Manual. Sustain VU has a Greening Guide to cultivate green purchasing and procurement.

The graduate school has surveyed laboratories in an effort to minimize shipping via styrofoam boxes, but the medical school is not engaged with these efforts to increase sustainable procurement.

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?
Every event hosted at the institution **must** abide by sustainability criteria. (2 points)
The institution **strongly recommends or incentivizes** sustainability measures, but they are **not required.** (1 point)
There are **no** sustainability guidelines for institution events. (0 points)

Score Assigned:	1

Score explanation: There are general sustainability event guidelines by Vanderbilt University, as can be seen here. These are recommendations for students to reduce, reuse, and recycle. There are also suggested vendors to ensure the use of locally grown food and available public transportation methods to use. However, these recommendations are not requirements. Therefore, the institution was given a score of 1 and not 2.

5.10. Does your institution have programs and initiatives to assist with making lab spaces more environmentally sustainable?
Yes, the institution has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable. (2 points)

There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)	
There are **no** efforts at the institution to make lab spaces more sustainable. (0 points)	
Score Assigned:	2
Score explanation: FutureVU Sustainability is in the process of developing a laboratory greening program. In the meantime, both the Office of Environmental Health, Safety, and Sustainability and the VUMC Office of Research have published greening guides, which are a great resource for information concerning green office and procurement practices. Moreover, the Center for Structural Biology has a Green Team dedicated to making research at Vanderbilt more sustainable, which holds monthly meetings and provides resources for lab greening. In 2024, Vanderbilt University will be publishing a green lab checklist. In March 2023, the My Green Lab Freezer challenge was started to encourage energy efficient usage of lab freezers.	

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
The institution is **entirely divested** from fossil fuels **and** has made a **commitment to reinvest divested funds** into renewable energy companies or renewable energy campus initiatives. (4 points)	
The institution is **entirely divested** from fossil fuels. (3 points)	
The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments. (2 points)	
The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organised advocacy** for divestment. (1 point)	
Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that. (0 points)	
Score Assigned:	1
Score explanation: Per the Vanderbilt Financial Report, 6% of Vanderbilt's endowment (roughly $550 million) is invested in "natural resources", which includes oil and gas production assets. The VUMC investments are confidential, but include a "diverse portfolio of assets". While there are currently no institutional commitments to divest from fossil fuel companies, students and staff alike are organizing to advocate for divestment. Divest Vanderbilt is the university's student-led divestment campaign, which has made itself a well-known presence on campus.	

Section Total (21 out of 32)	**65.62%**

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Grading

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

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

**Within each grade bracket, a score in the top 5% (_5 to_9%), receives a "+", and a score in the bottom 5% (_0-_4%) receives a "--". For example, a percentage score of 78% would be a B+.*

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(51/72) x 100 = 70.6%	B
Interdisciplinary Research (17.5%)	(14/17) x 100 = 82.4%	A-
Community Outreach and Advocacy (17.5%)	(8/14) x 100 = 57.1%	C+
Support for Student-led Planetary Health Initiatives (17.5%)	(11/15) x 100= 73.3%	B
Campus Sustainability (17.5%)	(21/32) x 100 = 65.6%	B
Institutional Grade	**(71x0.3 + 71x0.175 + 57x0.175 + 73x0.175 + 66x0.175) = 67.92%**	**B**

Report Card Trends

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