Planetary Health Report Card (Medicine):

University of Missouri-Kansas City

2024-2025 Contributing Team:

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Land acknowledgment:

Summary of Findings

Overall Grade	D

Curriculum	D-

- The University of Missouri-Kansas City School of Medicine curriculum is considerably deficient in content discussing planetary health. There is one biostatistics class that has a lecture on the impact of environmental health on pediatrics, and one lecture in a core pathology class on environmental toxins and pollutants in patients. However, teachings on the neuropsychological, cardiovascular, and infectious impacts of poor environmental health, environmental justice in marginalized communities, or global environmental change are not addressed.

- **Recommendations:** During the first two years of the BA/MD program, there are several classes that students are required to take on various inaugural aspects of medicine such as the history and fundamentals of medicine. Many of these classes include dated content, and incorporating a brief lecture series into one of these types of classes would be much more relevant, and encourage students to carry morals of sustainability in healthcare from the start.

Interdisciplinary Research	D-

- The University of Missouri-Kansas City was recently named an R1 institution with over $50 million dollars invested in investigations currently. A significant portion of the university's research efforts come from the School of Medicine, which has a developing research program. While health outcomes research (HOR) is a common focus, the involvement of planetary health and its effects on HOR is seldom. Currently, the school's top researchers and affiliates in this area include Dr. Elizabeth Friedman, Dr. Steve Simon, and Dr. Berkley Patton.
- Recommendations: Incentivize faculty to investigate planetary health research through 1-2 unique research grants and scholarships; create a researcher peer-mentor program for students and faculty to collaborate on planetary health topics; establish new "Planetary Health" subcategory in university-sponsored abstract-presentations and research symposiums.

Community Outreach and Advocacy	D

- The University of Missouri-Kansas City School of Medicine is affiliated with several local partners, including Children's Mercy Hospital Garden and KC Can Compost. While Children's Mercy boasts its own Environmental Health Program, other affiliate hospitals do not share this feature, nor do they widely distribute educational materials to patients teaching about environmental health exposures. There is also a lack of occupational training that focuses on skills in planetary health and sustainable healthcare. The principle means of advocacy regarding sustainability is done via the newly-formed Health Sciences District Sustainability Committee, which is composed mainly of students with some faculty and administrative support; funding is a frequent barrier to effective projects beginning.
- **Recommendations:**
    - Work with pre-clinical education curriculum coordinators to offer volunteering opportunities that focus on planetary health and sustainability for completion, as a part of already existing course requirements, such as in Fundamentals of Medicine I and II.
    - Mandate that partner hospitals meet at least biannually to discuss sustainability initiatives at their local sites and encourage investment in energy-saving initiatives
    - Facilitate collaboration between the UMKC SOM Office of Research and partner institutions to create educational materials that can be distributed to patients as a means to inform them of environmental toxin risks in their area of Kansas City.

Support for Student-Led Initiatives	C

- The University of Missouri-Kansas City School of Medicine has a newly formed Sustainability Committee focused on evaluating existing sustainability initiatives and exploring new opportunities for improvement with the support of students, staff, faculty, and administrators at the SOM and at affiliated teaching hospitals. The School of Medicine also has brought in a speaker to give a guest lecture regarding the intersection of planetary health and medicine in Fall 2024, and provides opportunities for students to pursue community service projects that relate to the food recovery aspect of planetary health. The undergraduate Volker campus at UMKC also has some sustainability research and programs of study, although those are hard to access by medical students.
- **Recommendations:** We recommend that the School of Medicine collaborates with faculty at the other (Volker) campus and the University as a whole to connect students to planetary health-oriented research opportunities and any other initiatives that may arise. We also recommend that the School of Medicine explores grants to support student-, staff-, or faculty-led initiatives in the realm of planetary health, and that the SOM creates, maintains, and updates a webpage or set of webpages to provide information about planetary health opportunities available to the community, as well as informs site viewers about in-progress and completed planetary health initiatives.

Campus Sustainability	F

- The University's Planning, Design and Construction (PD&C) department manages all efforts in the design and construction of new structures, renovation and repair projects, and infrastructure development. According to UMKC staff, which are responsible for campus facilities at the SOM, there are 5 “Green Initiatives:” Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, and Indoor Environmental Quality. These are identical to the 5 pillars that make up LEED certification. Currently, there are no LEED-certified buildings on the Health-Sciences District campus. The University states that the upcoming Healthcare Delivery and Innovations Building will incorporate higher efficiency and sustainability that is “up to code.” RDG architecture firm is responsible for the HDIB and briefly mentions its plan for incorporating energy efficiency into the building’s design: “high-performance façade maximizes daylight and reduces energy use in response to solar angles through varied scales of glazing.”
- Recommendations: Establish a “physical spaces sustainability plan” unique to UMKC (and UMKC SOM, by extension) that outlines:
    - Energy thresholds in accordance with the Department of Energy’s recommendations for a 30-50% reduction in energy requirements from baseline OR LEED Silver+ certification
    - A goal to optimize HVAC and building envelope (insulation) efficiency in the School of Medicine
    - Convert all fluorescent lighting to LED (Phase 1) + Incorporate motion detectors in all rooms to decrease energy usage through lights (Phase 2)

Statement of Purpose

Planetary health is human health.

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

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

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

Definitions & Other Considerations

Definitions:

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

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

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

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

- **Medical School/Department vs. Institution:** When "Medical school" is specified in the report card, this only refers to curriculum and resources offered by the School/department of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to the university more broadly including all of its campuses. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is

specifically targeted for medical students, can meet this metric.

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

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

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

- **Extractivism:** 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:	1
Score explanation: As part of the MS3/BAMD5 year curriculum in the pediatric clerkship, there is a dedicated lecture presentation given by Dr. Elizabeth Friedman titled “Pediatric Environmental Health.” This lecture features a detailed look into how pediatric environmental health is evolving with climate change.	

Curriculum: Health Effects of Climate Change

1.2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?
This topic was explored **in depth** by the **core** curriculum. (3 points)
This topic was **briefly** covered in the **core** curriculum. (2 points)
This topic was covered in **elective** coursework. (1 point)
This topic was **not** covered. (0 points)

Score Assigned:	2
Score explanation: As part of the MS1/BAMD3 curriculum for the Pathology 2 course, his topic was briefly mentioned on several slides of a lecture in Dr. Soheila Hamidpour's lecture on "Environmental and Nutritional Diseases." Climate change and excessive heat and a brief overview of their effects on various body systems was discussed.	

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:	0
Score explanation: There is no formal elective or core curriculum lecture based on these aforementioned events in the coursework.	

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:	0
Score explanation: There is no coursework regarding the impact of climate change on the changing patterns of infectious disease.	

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.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
Score explanation: As part of the MS3/BAMD5 year curriculum in the pediatric clerkship, there is a dedicated lecture presentation given by Dr. Elizabeth Friedman titled "Pediatric Environmental Health."There is a slide in this lecture detailing how air pollution is more vulnerable in kids vs adults due to lower body mass. Furthermore, the lecture details how kids have greater lung surface area or body weight and breathe faster meaning inhalation of these substances have a more profound impact on children. The lecture goes into further details how the EPA Clean Air Act has led to various policy initiatives and changes.	

1.6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
Score explanation: The cardiovascular effects of climate change have not been addressed in either the core or elective curriculum.	

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.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0

Score explanation: The current curriculum doesn't address the mental health and neuropsychological effects of environmental degradation and climate change.

1.8. Does your <u>medical school</u> 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.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
Score explanation: In the MS2/BAMD4 Year during the Family Medicine Core coursework, there is an introductory lecture detailing the impact of lifestyle medicine on overall health for our patients. This lecture goes into factors such as food security, socioeconomic status and physical activity helping us understand how this affects a patient holistically. As part of the MS3/BAMD5 year curriculum in the pediatric clerkship, there is a dedicated lecture presentation given by Dr. Elizabeth Friedman titled "Pediatric Environmental Health." The lecture details how ecosystem health and socioeconomic status play hand in hand to determine the effects on overall health of residents here in Kansas City; she focuses in particular on the effects of lead on pediatric health.	

1.9. Does your <u>medical school</u> curriculum address the outsized impact of climate change on marginalised populations such as those with low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults?	
This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
Score explanation: As part of the MS3/BAMD5 year curriculum in the pediatric clerkship, there is a dedicated lecture presentation given by Dr. Elizabeth Friedman titled "Pediatric Environmental Health." Several slides and charts are provided about how race is a reliable indication of proximity to pollution.	

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

This topic was explored **in depth** by the **core** curriculum.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
Score explanation: There is no curriculum in place regarding the unequal regional health impacts of climate change globally.	

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.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
Score explanation: ● As part of the MS3/BAMD5 year curriculum in the pediatric clerkship, there is a dedicated lecture presentation given by Dr. Elizabeth Friedman titled "Pediatric Environmental Health." There is discussion about how endocrine disruptors such as phthalates, heavy metals, pesticides, and plastics are in our everyday environment and how they are difficult to break down. With the ubiquity of these products, there is a decreasing trend in sperm count and serum testosterone observed overtime. ● As part of the MS1/BAMD3 curriculum for the Pathology 2 course, Dr. Sohelia Hamidpour's lecture on "Environmental and Nutritional Diseases" briefly mentions the impact of agricultural organochlorines on hormonal activity.	

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.
This topic was **briefly** covered in the **core** curriculum.
This topic was covered in **elective** coursework.
This topic was **not** covered.

Score Assigned:	2
Score explanation: As part of the MS3/BAMD5 year curriculum in the pediatric clerkship, there is a dedicated lecture presentation given by Dr. Elizabeth Friedman titled “Pediatric Environmental Health.”The lecture includes slides such as the impact of leaded gasoline on children in the Kansas City, Missouri area. It details how socioeconomic status serves as a predictor in where the municipality will build hazardous waste facilities and landfills.	

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.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
Score explanation: There is no curriculum addressing the impact of indigenous knowledge as an essential component of planetary health outcomes.	

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.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	2
Score explanation: ● As part of the MS3/BAMD5 year curriculum in the pediatric clerkship, there is a dedicated lecture presentation given by Dr. Elizabeth Friedman titled “Pediatric Environmental Health.”There is discussion regarding how those with lower SES are more vulnerable to pollution (air, water). The lecture then goes into detail about how this affects childhood growth and development. ● As part of the MS1/BAMD2 year curriculum in the Fundamentals of Medicine IV course, in the lecture “Health Care Disparities” by Dr. Amy Patel, she discusses the impact of high levels of stress, overtaxed immune system, poor nutrition and exercise, and unhygienic	

living conditions causing disproportionately elevated rates of heart and lung disease in low income households in childhood and adulthood

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.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
Score explanation: There is no coursework detailing the environmental and health co-benefits of a plant-based diet.	

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.	
This topic was **briefly** covered in the **core** curriculum.	
This topic was covered in **elective** coursework.	
This topic was **not** covered.	
Score Assigned:	0
Score explanation: There is no formal curriculum or discussion regarding the carbon footprint of healthcare systems.	

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	**Score**
The health **and** environmental **co-benefits** of **avoiding** over-medicalisation, over-investigation and/or over-treatment (2 points)	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)	1
Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	0
The impact of **anaesthetic** gases on the healthcare carbon footprint and ways to reduce anaestheisa's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions. (1 point)	0
The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers. (1 point)	0
Waste production within healthcare **clinics** and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting) (1 point)	0
Score explanation: ● *In the UMKC core curriculum Family Medicine course there is an introductory lecture that discusses how lifestyle medicine and exercise/diet modifications can have a significant impact in disease management.* ● *In the UMKC Pharmacology curriculum, the lecture detailing hypertension management discusses the importance of the DASH diet and exercise in helping significantly reduce blood pressure values compared to solely using pharmacologic agents*	

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:	0
Score explanation: *There are no current strategies nor training that pertains to patient conversations regarding climate change or planetary health at the UMKC SOM.*	

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:	1
Score explanation: At UMKC, there is a focus on obtaining an environmental history primarily in the allergy and immunology as well as Pulmonary electives. This includes asking patients about occupational exposures, environmental inhalation hazards, and any family history.	

Curriculum: Administrative Support for Planetary Health

1.20. Is your medical school 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:	0
Score explanation: At the moment, there are no processes being developed for the implementation or improvement of Education for Sustainable Healthcare and planetary health.	

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:	0
Score explanation: At UMKC, ESH and planetary health are not covered in the core curriculum. There is coverage in the core curriculum of exposure to environmental pollutants and that with	

rising temperatures, there are increased dangers of cerebrovascular events and burns in patients; however, there is no focus in the core curriculum on the health of the planet itself.

1.22. Does your <u>medical school</u> employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?	
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: UMKC School of Medicine has no such appointed lead for sustainable healthcare and planetary health.	

Section Total (17 out of 72)	**23.61%**

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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:

- *Dr. Elizabeth Friedman is currently the medical director of an environmental health program at an academic institution and children's hospital. She is a co-PI of one of ten Pediatric Environmental Health Specialty Units in the nation, and she works with patients in a primary care clinic. With her academic time, Dr. Friedman partners with several community groups to develop community driven environmental health research and/or interventions to address environmental health exposures, including the UMKC School of Medicine.*

- *Dr. Steve Simon in Biomedical and Health Informatics works on the impact of lead in low income houses in KC. The U.S. Department of Housing and Urban Development has awarded $700,000 to the University of Missouri-Kansas City to explore and evaluate best practices for identifying and removing lead paint hazards from Kansas City homes.*

- *Dr. Berkley Patton "Health Impacts of City-Wide Zero-Fare Bus Transit: A Natural Experiment" - Wide-reaching efforts are needed to increase population levels of physical activity and healthy eating in low- income groups for obesity- and type 2 diabetes prevention/control. Low-income groups experience higher rates of obesity and diabetes than the general population and the COVID-19 pandemic has made these groups even more vulnerable to developing these preventable chronic diseases. Active transportation is an underused source of physical activity but is particularly relevant to low-income groups. A major and consistent correlate of active transportation is use of public transit, and*

transit users engage in 5-15 more minutes/day of overall PA that non-users. Public transit may also support access to healthy eating and health services. Citywide policies to increase use of public transit have promise for improving health markers but have been substantially underexplored. As an effort to improve economic conditions among low-income groups, Kansas City, MO (KCMO; 500K residents; 43,000 daily bus trips) has become the only major city in the U.S. to permanently adopt an ongoing zero-fare bus transit (ZBT) policy. The policy has eliminated all bus fares across the city. This provides an extraordinary opportunity to examine impacts of such policies on bus ridership and subsequently on bus users' physical activity, healthy eating, and weight status.

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:	*0*
Score explanation: The Biomedical and Health Informatics department leads research at UMKC SOM. It does not employ any institute or projects whose topic is environmental health.	

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:	*0*

Score explanation: The Biomedical and Health Informatics department leads research at UMKC SOM. It does not utilize any systems that allow individuals affected by planetary health disparities to have decision-making power in research agenda.

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: 0	*0*
Score explanation: UMKC does not offer any digital platform that discusses sustainability on the Health Science District (or undergraduate) campus.	

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 / sustianable 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:	*1*
Score explanation: In 2023, UMKC Office of Student Involvement - which works directly with students at the School of Medicine - provided $1000 for the annual Earth Day Dinner event featuring food from its recently-premiered student-lead garden.	

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: UMKC SOM is not an active member of national or international planetary health organizations.	

Section Total (4 out of 17)	**23.53%**

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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:	*2*
Score explanation: The School of Medicine is affiliated with the Children's Mercy Hospital Garden, which provides sustainably grown food from the garden to families. Affiliate hospital, University Health, partners with KC Can Compost to responsibly source composting. See more information at: https://kccancompost.com/why-compost	

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/medical school** have not offered such community-facing courses or events. (0 points)

Score Assigned:	*0*
Score explanation: There were no community facing courses or events identified.	

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:	*1*
Score explanation: The Health Sciences District Sustainability Committee produces a newsletter for students regarding sustainability in healthcare on campus. Students can sign up to receive the email newsletter.	

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 were no accessible courses for postgraduate providers identified.	

3.5. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?
Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)

Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated medical centres have accessible educational materials for patients. (0 points)	
Score Assigned:	*1*
Score explanation: Yes, Children's Mercy provides educational materials regarding lead exposure. The brochure can be found here: https://www.childrensmercy.org/siteassets/media-documents-for-depts-section/departments/pharmacology-and-toxicology/outdoor-lead-exposure.pdf	

3.6. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?	
Yes, the **medical school** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	*0*
Score explanation: No educational materials regarding the health impacts of climate change were identified.	

Section Total (4 out of 14)	**28.57%**

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Support for Student-Led Planetary Health Initiatives

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

4.1. Does your institution offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)	
The **institution** encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, **but** there is no student funding available and there is no requirement to participate. (1 point)	
No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	*1*
Score explanation: The UMKC School of Medicine does not currently have programs in place to offer grants to students pursuing sustainability projects, and sustainability instruction is not part of the core curriculum. However, the SOM and administration are supporting a student-led committee to evaluate current sustainability initiatives, seek PHRC grading, and explore new options/initiatives.	

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:	*0*
Score explanation: As of now, the UMKC School of Medicine does not have any opportunities that meet the criteria.	

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 medical school, but it lacks key information. (1 point)	
There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)	
Score Assigned:	*1*
The UMKC School of Medicine does not have any specific webpage containing this information specifically, although it does have a page pertaining to research areas within medicine. The UMKC undergraduate campus's website contains pages detailing programs of study that pertain to the environment and climate action along with information about research in those areas; however, there is no connection to the medical school.	

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 medical school dedicated to planetary health or sustainability in healthcare. (2 points)	
Yes, there is a student organisation at my medical school 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*
The University of Missouri - Kansas City Health Science District Sustainability Committee is a new student organization with faculty mentors and support from the Dean of the medical school. It includes students, staff, and faculty from the medical school and affiliated teaching hospitals. This organization aims to evaluate the current state of sustainability initiatives on campus and advocate for further initiatives and improvements through its inclusive base and support.	

4.5. Is there a student liaison representing sustainability interests who serves on a department or institutional decision-making council to advocate for curriculum reform and/or

sustainability best practices?	
Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	*1*
The Co-Chairs of the UMKC Health Science District Sustainability Committee fulfill the requirements of this section as described above. ● *Cameron Quick, MS II* ● *Simrin Phatak, MS II*	

4.6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	**Score**
Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.	*0*
Panels, speaker series, or similar events related to planetary health that have students as an intended audience.	*1*
Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.	*0*
Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	*0*
Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.	*1*
Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	*0*
The UMKC School of Medicine hosts a Dean's Lecture series, and the September 2024 speaker was Dr. Reed Omary, MD, MS, a guest professor from Vanderbilt University, who gave a lecture entitled "Sustainability - Planetary Health: From Bedside to Biosphere." The UMKC SOM also requires first and second year medical students in the six year BA/MD program to complete a community service project every semester, and a considerable number of the available/approved service opportunities relate to food waste diversion via food pantries and recovered food distribution and packing centers.	

Section Total (7 out of 15)	**46.67%**

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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:	0
Score explanation: There is currently no task force or office for campus sustainability at the school of medicine or UMKC globally. There seems to have been an initiative up to 2019, but no other records regarding its existence have been recovered.	

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/medical school does **not** meet any of the requirements listed above (0 points)	
Score Assigned:	0
Score explanation: There is currently no written or approved plan to reduce the School of Medicine or UMKC's carbon footprint as an entirety. Upon speaking with faculty at UMKC, goals for Green Initiatives for cost effective energy include the following:	

a. Sustainable Sites: Meet or exceed State of Missouri DNR best management practices for erosion and sedimentation control standards. Accommodate alternative transportation methods.
b. Water Efficiency: Target water efficient landscaping, reduced water usage, and innovative stormwater management.
c. Energy and Atmosphere: Encourage optimal energy performance, including appropriate levels of commissioning.
d. Materials and Resources: Support construction waste management programs. Provide space for building-based recycling programs. Encourage use of local and regionally produced materials and building products made with recycled content.
e. Indoor Environmental Quality: Pursue toxin-free indoor air through appropriate ventilation and use of building materials that emit low levels of volatile organic compounds (VOCs).

This set of Green Initiatives reflects the LEED certification system.

5.3. Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?	
Yes institution buildings are **100%** powered by renewable energy. (3 points)	
Institution buildings source **>80%** of energy needs from off-site and/or on-site renewable energy. (2 points)	
Institution buildings source **>20%** of energy needs from off-site and/or on-site renewable energy. (1 point)	
Institution buildings source **<20%** of energy needs from off-site and/or on-site renewable energy. (0 points)	
Score Assigned:	0
Score explanation: UMKC has the following goal for Energy and Atmosphere: "Encourage optimal energy performance, including appropriate levels of commissioning" However, there are no clear regulations outlining that the institution buildings source a particular percentage of energy needs from off-site and/or renewable energy sources. UMKC currently does not have any renewable energy systems on our school of medicine campus so we are currently at less than 20%.	

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: The university's Planning, Design and Construction (PD&C) department manages all efforts in the design and construction of new structures, renovation and repair projects, and infrastructure development. The university also provides guidelines for consultants and design professionals. The Healthcare Delivery and Innovation Building (HDIB) is currently being constructed with initiatives to improve efficiency and sustainability consistent with current code. There is one small project actively underway to retrofit an older building: a steam line is being installed in between the Health Sciences Building and the School of Medicine, which is said to improve efficiency in heating the SOM. UMKC's general stated goal for green initiatives within construction of new buildings is as follows: Support construction waste management programs. Provide space for building-based recycling programs. Encourage use of local and regionally produced materials and building products made with recycled content. RDG architecture firm is responsible for the HDIB and briefly mentions its plan for incorporating energy efficiency into the building's design: "high-performance façade maximizes daylight and reduces energy use in response to solar angles through varied scales of glazing."	

5.5. Has the <u>institution</u> 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:	1
Score explanation: UMKC is surrounded with bike paths and there are some bike racks available. There is a free shuttle between the UMKC School of Medicine and the undergraduate campus however this is not a route commonly utilized by students for rotation or transportation to classes. It is difficult to access off-campus clinical sites without a car. A majority of students drive. No information about environmentally-friendly transportation is emphasised in orientation.	

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 medical school. (0 points)	
Score Assigned:	1
Score explanation: The campus has bins dispersed around the school for trash, paper recycling, and bottle recycling. They are accessible in the library and public spaces throughout the school of medicine. There are no school-wide initiatives for composting, however several student and faculty members are involved in composting efforts related to community gardens. This only features organic waste from the gardens.	

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:	0
Score explanation: There is no cafeteria at the School of Medicine but there are vending machines for snacks and beverages. Other food on campus is catered or brought by student organizations for their independent use.	

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:	0
Score explanation: In terms of supply procurement, there is no centralized process or guidelines for sustainability. In trying to contact possible leads on this subject, there was no definitive method for procuring classroom or workshop supplies. It may be also intertwined within hospital resources and procurement. There was also confusion around what exactly constituted "supplies".	

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:	0
Score explanation: UMKC does not currently have guidelines for events hosted at the institution under the Office of Student Affairs or Office of Student Involvement.	

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:	0
Score explanation: UMKC does not currently have guidelines or initiatives aimed towards making lab spaces specifically more environmentally sustainable.	

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:	0

Score explanation: The UMKC school of medicine does not have an endowment specific towards it but has funds allocated from the University of Missouri system on a project by project basis. The UM system currently has equity holdings in traditional energy companies totaling approximately $4.9 million (0.2% of total endowment) and equity holdings in renewable energy totaling approximately $15.3 million (0.71% of total endowment pool). There are no current plans to divest from traditional energy.

Section Total (4 out of 32)	**12.50%**

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Grading

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

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

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(14/72) x 100 = 19.44%	D-
Interdisciplinary Research (17.5%)	(4/17) x 100 = 23.53%	D-
Community Outreach and Advocacy (17.5%)	(4/14) x 100 = 28.57%	D
Support for Student-led Planetary Health Initiatives (17.5%)	(7/15) x 100= 46.67%	C
Campus Sustainability (17.5%)	(4/32) x 100 = 12.50%	F
Institutional Grade	**(0.19x0.3 + 0.24x0.175 + 0.29x0.175 + 0.53x0.175 + 0.12x0.175) = 26%**	**D**