

# **Planetary Health Report Card:**

# St. John's Medical College, Bengaluru, India



### 2021-2022 Contributing Team:

- Team Leader: Dr Clive Martin Rodrigues (Alumnus)
- Students: Justin Minz, Malavika Rudrakumar, Neha Joe, Shrishti Prasad, Subashini S B
- Faculty Mentors: Dr Manjulika Vaz, Dr Deepti Shanbhag
- Regional Lead/Editor: Dr Anandita Pattnaik

\*Primary Contact: <u>cliverodrigues11@gmail.com</u>

### **Summary of Findings**

Overall	
<u>Curriculum</u>	D+

- SJMC has taken efforts to integrate planetary health longitudinally into the curriculum. This has been achieved through the 'Citizen Doctor' program and various lectures on environmental sciences along with outreach programs for the second and third-year students. However, there is no separate coursework offered by the university that holistically covers planetary health.
- **Recommendations:** A recommendation would be to expand the 'Citizen Doctor' programme and involve first to third-year MBBS students. Furthermore, the Community Health department could include topics such as carbon footprint, man-made disasters and their impacts on health in the core curriculum.

### **Interdisciplinary Research**

D+

- SJMC has a research institute which encourages students and faculty to engage in scientific writing. Though there are faculty who, over the years, have worked on topics related to planetary health & sustainable healthcare, there is no dedicated centre that focuses on research specific to this topic.
- **Recommendations**: Encourage planetary health-related research and motivate students to explore the relationship between our environment and different illnesses.

### **Community Outreach and Advocacy**

 $\mathbf{C}$ 

- SJMC has adequate community outreach programs. However, planetary health and sustainable health care are not well integrated into these programs. One of the strengths of the college is its engagement with rural communities and the students are sensitized to these activities during various programs such as the community health awareness program, rural orientation program, etc.
- **Recommendations**: A major recommendation is to ensure the activities and events done by the campus sustainability club (Ecologics) are communicated via the college website or monthly magazine. There is a need for educational materials to be put up on the hospital notice boards or digital displays for patients.

### **Support for Student-Led Initiatives**

 $\mathbf{C}$ 

- SJMC encourages students to take up research or quality improvement projects in their field of interest. In addition, there is a campus sustainability club (Ecologics) that promotes ideas of sustainability and urges students to find innovative solutions within and outside of campus.
- **Recommendations**: Encourage the Ecologics club to raise awareness about planetary health by conducting interactive quizzes and puzzles to increase student engagement with the cause.

### **Campus Sustainability**

 $\mathbf{C}$ 

- SJMC has made good progress to become a more sustainable campus in conjunction with the wider sustainability framework, including fossil fuel divestment and using fully renewable energy on-site. SJMC also strongly recommends sustainability measures within the campus such as the use of 'plate banks'.
- **Recommendations**: We recommend the formulation of a detailed strategic plan and the development of a timeline with yearly goals aiming to reduce carbon footprints in order to achieve carbon neutrality.

### **Statement of Purpose**

Planetary health is human health.

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

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

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

### **Definitions & Other Considerations**

### **Definitions:**

- Planetary Health: is described by the *Planetary Health Alliance* as "a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth.". 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.
- Education for Sustainable Healthcare (ESH): is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
  - 1. Describe how the environment and human health interact at different levels.
  - 2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
  - 3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- Medical School vs. Institution: When "medical school" is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (for example, undergraduate departments (USA), other related departments eg Public Health, Population Health departments). In contrast, when "institution" is specified in the report card, we are referring to the university more broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.
- Environmental history (Metric 19 in curriculum section): This is a series of questions

providers are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mold after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.

- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- Clerkship: This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

#### Other considerations:

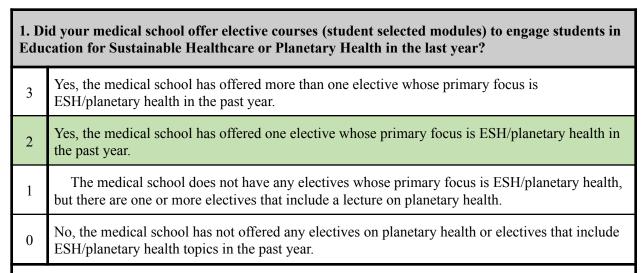
• If there are more than one "tracks" at your medical school with two different curricula (for example, Harvard Medical School has a Pathways and HST curriculum track), you can choose to fill out a report card for each track, or fill out just one report card and average the scores received by each track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

Added to our resources this year, the Planetary Health Report Card <u>Literature Review by Metric</u> collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

### Planetary Health Curriculum

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

Curriculum: General



Score explanation: In 2018, a course titled 'Citizen Doctor' was introduced as an elective for first-year medical students by the Health and Humanities department. The main objective of this course was to expose future doctors to the wider framework of health and invoke a sense of citizenship, responsiveness, and critical thinking. A total of 20 hours is stipulated for the 'Citizen Doctor' program. The course covered the following topics:

- Climate change: causes and consequences
- Globalisation, consumption, and garbage management
- Sustainable lifestyle and its impact on health
- *Urbanisation and obesity*
- Water: its contamination and its management
- Water bodies and their conservation
- Air pollution and its mitigation
- Ecological mapping and action planning

In Class 1- 'Introduction' and Class 2- 'Be the change' the impact of climate change on human health, was briefly explained. In addition, two students were given the assignment to research planetary health and present the findings.

Curriculum: Health Effects of Climate Change

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

Score explanation: Effects of heat stress such as heat stroke, heat hyperpyrexia, heat exhaustion, heat cramps and heat syncope and their relation to global warming are briefly covered in a few slides under the lectures on environment and health section, as a part of the curriculum for the second and third-year students, by the Department of Community Health.

# ${\bf 3.\ Does\ your\ medical\ school\ curriculum\ address\ the\ impacts\ of\ extreme\ weather\ events\ on\ individual\ health\ and/or\ on\ health care\ systems?}$

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

Score explanation: As a part of the 'Citizen Doctor' course for the first-year students, in Class 1-'Introduction' and Class 2-'Be the change', the impacts of extreme weather events on individual health and health systems were briefly discussed. This was also explained by talking about the key messages in the encyclical by Pope Francis -"Laudato Si". This course is conducted by the Health and Humanities department, however, it is not a part of the core curriculum.

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

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

Score explanation: As a part of the 'Citizen Doctor' course for the first-year students, in Class 1- 'Introduction' and Class 2 - 'Be the change', the impact of climate change on the changing patterns of infectious diseases was briefly discussed. This was explained by giving the example of COVID-19 which is potentially due to the intensifying pressure on natural ecosystems and wildlife.

# 5. Does your medical school 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.

Score explanation: In the second year, one of the tutorials from the department of Pathology discusses the effects of air pollution on respiratory function and the various pathological lung diseases associated with air pollution. In addition, the Department of Community Health briefly teaches about the effects of air pollution (under epidemiology of respiratory diseases) to second and third-year students. All of this is part of the core curriculum.

0

This topic was not covered.

# 6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat? 3 This topic was explored in depth by the core curriculum. 2 This topic was briefly covered in the core curriculum. 1 This topic was covered in elective coursework. 0 This topic was not covered. Score explanation: This specific topic was neither covered in the core nor the elective coursework.

7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.

0 This topic was not covered.

Score explanation: This specific topic was neither covered in the core nor the elective coursework.

# 8. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?

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

Score explanation: This specific topic was briefly covered as a part of the 'Citizen Doctor' course for the 1st year students, following are the topics taught as a part of the course:

- Climate change: causes and consequences
- Globalisation, consumption, and garbage management
- Sustainable lifestyle and its impact on health
- *Urbanisation and obesity*
- Water: its contamination and its management
- Water bodies and their conservation
- *Air pollution and its mitigation*
- Ecological mapping and action planning

The course are conducted by the Health and Humanities department as an elective, however, it is not a part of the core curriculum.

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

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

Score explanation: As a part of the Community Based Medical Education (CBME) curriculum on Community Health, competency 9.4 is called 'Enumerate and describe the causes and consequences of population explosion and population dynamics of India'. It talks briefly about the impact of climate change on the population belonging to the low socioeconomic status.

# 10. Does your medical school curriculum address the unequal regional health impacts of climate change globally? 3 This topic was explored in depth by the core curriculum. 2 This topic was briefly covered in the core curriculum. 1 This topic was covered in elective coursework. 0 This topic was not covered. Score explanation: This specific topic was neither covered in the core nor the elective coursework.

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

11. Does your medical school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Score explanation: This specific topic was neither covered in the core nor the elective coursework.	

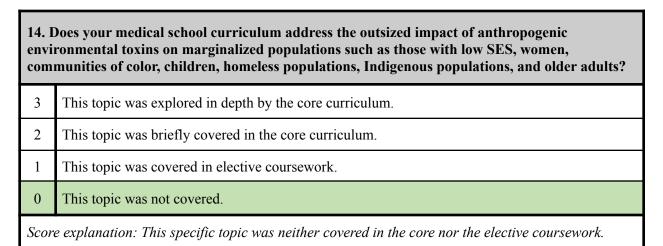
12. Does your medical school curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: Human-caused environmental health threats are briefly discussed in the chapter titled - 'Environment and health' by the department of Community Health for the second and third-year students. Competencies issued by the university have given importance to discussing ill effects on health due to air, water, noise pollution, as well as radiation. Effects of pesticide use have also been covered under the competencies.

Bengaluru has been facing water scarcity and contamination issues for years now. In the campus and its surrounding areas, cholera cases are very common. Hence, the role of pollutants in water is quite relevant to the university's surroundings.

### 

Score explanation: This specific topic was neither covered in the core nor the elective coursework.



Curriculum: Sustainability

15. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Score explanation: This specific topic was neither covered in the core nor the elective coursework.	

16. Does your medical school curriculum address the carbon footprint of healthcare systems?	
3	This topic was explored in depth by the core curriculum
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Score explanation: This specific topic was neither covered in the core nor the elective coursework.	

	17. Does your medical school curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (1 point each)	
1	Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room	
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.	
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally anaesthetic gas options with reduced greenhouse gas emissions	
1	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfill this metric.	
1	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 for obesity. This is commonly known as social prescribing in the UK.	
	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation	

Score explanation: The health benefits of non-pharmaceutical management for non-communicable diseases such as type 2 diabetes, obesity, dyslipidemia, etc are a part of the curriculum for the final (4th) year students. These competencies are covered by the Internal Medicine department through both lectures on non-communicable diseases and tutorials. However, the environmental co-benefits of such non-pharmaceutical management are not covered.

and/or over-treatment

Curriculum: Clinical Applications

# 18. In training for patient encounters, does your medical school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?

- Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
- Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
- No, there are not strategies introduced for having conversations with patients about climate change

Score explanation: Currently, there are no strategies introduced for having conversations with patients about climate change.

# 19. In training for patient encounters, does your medical school's curriculum introduce strategies for taking an environmental history or exposure history?

- 2 Yes, the core curriculum includes strategies for taking an environmental history.
- 1 Only elective coursework includes strategies for taking an environmental history.
- 0 No, the curriculum does not include strategies for taking an environmental history.

Score explanation: During the Community Health clinical postings, as a part of clinical-social case discussions, emphasis is laid on the history of environmental exposure in order to understand the predisposing factors (if any) that may have led to the patient's ill health. This includes, occupational history (such as inhalation of asbestos, smoke, and cotton), the history of ingestion of contaminated water (for example pesticide is abundant in runoff water from crop fields), and demographics including where they live (such as living close to an industry) may have a direct impact on their health.

### Curriculum: Administrative Support for Planetary Health

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

Score explanation: The 'Citizen Doctor' course for first-year students has been modified since its inception in 2018, to include a few aspects of planetary health. As a part of the coursework in 2021, two students were given the assignment to research planetary health and present the findings to the class. In addition, the course encourages students to form smaller groups and map out how different parts of the campus contribute to sustainability.

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

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

Score explanation: As mentioned in question 1, the 'Citizen Doctor' program has been well integrated into the first-year curriculum and many changes have been made to the program based on feedback. The results of the program have also been published in the <u>Indian Journal of Medical Ethics</u>. In addition, some topics such as the sustainable development goals and health hazards of water, air, noise and radiation pollution are also briefly covered by the Department of Community Health as a part of the curriculum for the second and third-year students.

# 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
- No, the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.

Score explanation: The Health and Humanities department of the Research Institute is responsible for overseeing the 'Citizen Doctor' program which is conducted for first-year students. Dr Manjulika Vaz, the head of the Department of Health and Humanities, and her team oversee the implementation of the course and the creation of its contents.

Section Total (25 out of 69)	25
	_

Back to Summary Page here

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

### **Interdisciplinary Research**

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

# 1.Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school? Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health or healthcare sustainability. Yes, there are individual faculty members at the School of Medicine who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.

- There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the medical school.
- No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.

Score explanation: There are faculty members at SJMC who are currently conducting research related to planetary health. An ongoing project is 'Longitudinal effects of air pollution on lung growth and development of biomarkers of lung function deficit in urban children, headed by the Dean of SJMC. Another study titled 'Wastewater usage for agricultural purposes in Mugalur Gram Panchayat area of Bengaluru Urban District' was published by doctors from the Community Health department in 2017. The objectives of the study were to document the practice of wastewater usage for agriculture by farmers of Mugalur Gram panchayat area, along the path of the river Dakshina Pinakini, to identify the health hazards associated with wastewater usage among the exposure groups (farmers and farm labourers, local community members and local consumers of the farm produce) and to develop an improvement plan to protect these groups as per World Health Organization (WHO)'s Sanitation Safety Plan (SSP) module. Unfortunately, none of the researchers mentioned has a primary focus on planetary health, hence we've awarded only 2 points.

## 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

- 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.

  There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research.
- There is no dedicated department or institute.

Score explanation: The Dean of SJMC Research Institute, Dr Tony Raj, plans to create a new department in the near future called "One Health" that would incorporate and focus on the environment and its effects on human health and the healthcare system.

The <u>Division of Occupational Health Services</u> (a branch of the Community Health department) at the medical college is in charge of 3 main sectors: plantation, apparel and the health of health care workers. However, there is no dedicated department or institute for interdisciplinary planetary health research.

# 3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?

- 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.
- Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.
- No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
- 0 There is no process, and no efforts to create such a process.

Score explanation: Currently there is no process or no efforts to create such a process.

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

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

Score explanation: Currently there are no websites dedicated to planetary and environmental health.

### 5. Has your institution recently hosted a conference or symposium on topics related to planetary health? Yes, the **medical school** has hosted at least one conference or symposium on topics related to 4 planetary health in the past year. Yes, the **institution** has hosted at least one conference or symposium on topics related to 3 planetary health in the past year. Yes, the institution has hosted a conference on topics related to planetary health in the past three 2 years. The institution has not hosted any conferences directly, but they have provided financial support 1 for a local planetary health event. No, the institution has not hosted a conference on topics related to planetary health in the past three years.

Score explanation: Conferences and lectures hosted by SJMC are as follows:

1) The joint 14th World Congress of Bioethics and 7th National Bioethics Conference Congress "<u>Health for all in an unequal world: Obligations of global bioethics</u>", was co-hosted by SJMC <u>Research Institute</u> in 2018. It focused on the current global crisis of widening disparities in health. The conference also spoke about the deteriorating quality of the overall environment which disproportionately affects the deprived communities.

- 2) The <u>Dr. Kiruba Sankar Memorial Lecture 2019</u> was delivered by Professor Kalpana Balakrishnan PhD, FAMS, Director, WHO Collaborating Center for Occupational and Environmental Health & SRU-ICMR Centre for Advanced Research on Air Quality, Climate and Health, Department of Environmental Health Engineering, Sri Ramachandra Institute for Higher Education and Research on the topic titled "Creating Seamless Breathing Spaces: The challenge of addressing air pollution in India".
- 3) The Indian Academy of Sciences and Springer Nature, supported by the Grand Challenges Programme, tAcT and SJMC Research Institute hosted a lecture on March 22nd, 2019, by Sir Andy Haines, former Dean of the London School of Hygiene and Tropical Medicine, on "Sustainable. Healthy Cities and Food Systems".

6. Is your medical school a member of a national or international planetary health or ESH organization?	
1	Yes, the medical school is a member of a national or international planetary health or ESH organization
0	No, the medical school is not a member of such an organization

Score explanation: Currently, SJMC is not a member of any national or international planetary health or ESH organisations.

Section Total (6 out of 17)	6

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

### **Community Outreach and Advocacy**

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

# 1. Does your medical school partner with community organizations to promote planetary and environmental health? Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health. Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health. The institution partners with community organizations, but the medical school is not part of that partnership. No, there is no such meaningful community partnership.

Score explanation: We partner with the <u>Council for Active Mobility</u> to promote environmental health. The organization aims to transform the city into a more healthy and sustainable community by promoting cycling or walking. Additionally, there are some talks and events hosted by the Health and Humanities department during which individuals working in environmental sustainability organizations are invited to promote sustainable healthcare and environmental health. For example, last year we invited a guest lecturer to talk about menstrual cups and their benefits (including the environmental benefits). She is actively involved in the health promotion of environment-friendly and sustainable menstrual hygiene management.

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

The medical school has not offered such community-facing courses or events.

Score explanation: As part of the rural outreach program for first-year medical students, there is an annual health education program called "Child to Child" where a group of medical students teach a group of school-going students in the age group of 10-12 years from a rural community. Every year there are topics covered related to planetary health; last year it was related to plastics and health impact. The program targets around 100 school-going children and is quite effective as it also encourages peer teaching. Additionally, there is also street play, where the medical students deliver a crucial message related to a health-related topic, sometimes directly related to environmental health. This event is attended by approximately 100 individuals in the community, across all age groups.

## 3. Does your medical school 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.
- Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
- Students do not regularly receive communications about planetary health or sustainable healthcare.

Score explanation: No, students don't receive regular updates related to planetary health or sustainable healthcare. However, there are digital posters created and shared within the student community during specific days by the campus sustainability club (Ecologics). Additionally, events are organised that cover sustainable healthcare, such as a talk on 'Menstrual Cups' conducted last year.

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

Score explanation: As a part of the postgraduate curriculum in Community Health, seminars are held once a week. It occasionally includes topics related to sustainable healthcare. For example,

- Action plan for climate change and health (The objective of this session was to inform the students and discuss India's National Action Plan for Climate Change)
- Brain drain

In addition, the Health & Humanities department is currently planning a bioethics fellowship with the aim of producing ethical biomedical and health researchers who would be equipped with the knowledge relevant to the Indian socio-cultural context. This fellowship would include planetary health as one of its modules.

5. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about environmental health exposures?	
2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centres have accessible educational materials for patients.
Score explanation: There aren't any accessible educational materials for patients.	

6. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about climate change and health impacts?	
2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.
Score explanation: There aren't any accessible educational materials for patients.	

Total (7 out of 14) 7
-----------------------

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

### **Support for Student-Led Planetary Health Initiatives**

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

# 1. Does your institution offer support for medical students interested in enacting a sustainability initiative/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. The medical school encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate. No, the institution does not offer opportunities or support for sustainability initiatives or QI projects.

Score explanation: Students at SJMC get a lot of support to initiate as well as take part in sustainability-based projects. It also funds such initiatives, especially those under the campus sustainability club (Ecologics) managed by the Health and Humanities department. A cohort of students from SJMC are currently in the process of applying for a global fellowship that trains young social leaders who aim to fulfil certain SDGs in their campus or community, called the Millennium Fellowship, and we have received a lot of support from the Health and Humanities department.

# 2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare? The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research. 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. There are no opportunities for students to engage in planetary health/sustainable healthcare research.

Score explanation: According to the SJMC Research Institute, students are allowed to do research in any medical-related field that interests them, but there is no specific research cell within the campus dedicated to planetary health.

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

The medical school has a web page with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.

There is a medical school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.

There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

Score explanation: Although we have a college website, there is no information regarding planetary health or sustainable healthcare projects.

- 4. Does your medical school have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?
- Yes, there is a student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
- Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support.
- No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.

Score explanation: Our campus sustainability club (Ecologics) aims to promote sustainable initiatives and encourages students to do the same. Members of the club have taken a pledge towards a zero-waste environment by adhering to a 'Common Minimum Program'. Our mentor is the head of the Health and Humanities Department, Dr Manjulika Vaz.

- 5. Is there a student liaison representing sustainability interests who serves on a medical school 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 medical school or institutional decision-making council/committee.
- 0 No, there is no such student representative.

Score explanation: The Green Campus Committee is an advisory board comprising of the Associate Director of SJMC along with other doctors, and 4 students representing the medical, allied health sciences, and nursing colleges. Representatives can discuss the grievances on behalf of their fellow batchmates and work with the management to come up with appropriate solutions. The main aim is to maintain an eco-friendly environment in the college and ensure our campus is sustainable.

### 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) Projects where students are able to gain experience in organic agriculture and sustainable food 1 systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects. Panels, speaker series, or similar events related to planetary health that have students as an 1 intended audience. 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. Cultural arts events, installations or performances related to planetary health that have students as 1 an intended audience. Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts. Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other 1 outings for students)

Score explanation: We have had events where expert panellists spoke about different environmental & health issues. Students were also encouraged to attend these conferences. Examples are as follows; 1) The joint 14th World Congress of Bioethics and 7th National Bioethics Conference Congress "Health for all in an unequal world: Obligations of global bioethics", was co-hosted by SJMC Research Institute in 2018. It focused on the current global crisis of widening disparities in health. The conference also spoke about the deteriorating quality of the overall environment which disproportionately affects the deprived communities.

- 2) The <u>Dr. Kiruba Sankar Memorial Lecture 2019</u> was delivered by Professor Kalpana Balakrishnan PhD, FAMS, Director, WHO Collaborating Center for Occupational and Environmental Health & SRU-ICMR Centre for Advanced Research on Air Quality, Climate and Health, Department of Environmental Health Engineering, Sri Ramachandra Institute for Higher Education and Research on the topic titled "Creating Seamless Breathing Spaces: The challenge of addressing air pollution in India".
- 3) The Indian Academy of Sciences and Springer Nature, supported by the Grand Challenges Programme, tAcT and SJMC Research Institute hosted a lecture on March 22nd, 2019, by Sir Andy Haines, former Dean of the London School of Hygiene and Tropical Medicine, on "Sustainable," Healthy Cities and Food Systems".

Every year the Community Health department, along with the campus sustainability club (Ecologics), conducts the "<u>Tour de Muglur</u>", a 60 Km cycling rally to raise awareness about various medical issues. Chronic diseases were the topic for the previous year.

Section Total (8 out of 15)	8
-----------------------------	---

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

### **Campus Sustainability**

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

# 1. Does your medical school and/or institution have an Office of Sustainability? Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school. There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability. There are no salaried sustainability staff, but there is a sustainability task force or committee There are no staff members or task force responsible for overseeing campus sustainability

Score explanation: At SJMC we have a proactive task force that strives to make the campus more sustainable. There is a Green Campus Committee (at the management level) and an Ecologics Club (at the student level) that ensures the implementation of environment-friendly and sustainable initiatives throughout the campus. The Green Campus Committee comprises of the Associate Director of SJMC, student and faculty representatives from medical, paramedical and nursing departments along with associates from the department of Engineering & Facility Management and department of Maintenance & Estate under the able guidance of Dr Manjulika Vaz from the department of Health and Humanities. The departments of Health and Humanities and Maintenance & Estate have an aligned primary objective to ensure sustainable development in the institute but there is no separate office of sustainability.

2. How ambitious is your medical school/institution's plan to reduce its own carbon footprint?				
4	The institution has a stated goal of carbon neutrality by 2030 or earlier and the medical school / institution has a well-defined and adequate plan in place to achieve this goal.			
3	Yes, there is a stated carbon neutrality goal by at least 2040 and the medical school/institution has a well-defined and adequate plan in place to achieve this goal.			
2	Yes, there is a stated carbon neutrality goal by at least 2040, but the medical school/institution has not created a plan to reach that goal or the plan is inadequate.			

- 1 There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
- 0 There is no stated goal for reduction of CO2 emissions.

Score explanation: Emission of CO2 and other greenhouse gases are under the allowed permissible levels laid down by the Air Pollution Control Board. SJMC depends on renewable energy sources for its power needs thereby cutting its CO2 emissions from non-renewable energy sources. Many trees are planted as "carbon sinks" to counterbalance the CO2 emissions. However, there is no specific goal or timeline to achieve carbon neutrality.

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

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

Score explanation: SJMC utilizes wind energy for day-to-day functioning. 90% of the power supply to the medical college is met through wind energy. Wind energy is delivered to SJMC by a third party. 10% of the energy requirement is met through generators run by diesel as fuel which are in place in case of emergencies such as a power cut. Solar energy is used to supply hot water for the hospital and hostels. Solar-powered street lights are also installed in some parts of the campus.

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

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

Score explanation: Sustainable construction practices are practised throughout the campus. All of the new construction projects utilise concrete blocks instead of clay bricks. This is because clay produces a lot of CO2 (20.18 Tg CO2 per annum) and also the production of clay bricks erodes valuable topsoil.

In addition, recycled water from the sewage treatment plant within the campus is used for all construction purposes. There are ongoing projects for the renovation of old buildings throughout the campus to ensure sustainable building practices.

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

- Yes, the medical school has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
- The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
- The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.

Score explanation: SJMC discourages students from using motorcycles and cars on college premises by imposing a parking fee on cars. Students are encouraged to use bicycles instead. There is a cycling club that provides bicycles and organises long-distance cycling trips every weekend. There are plans to use electric buses on campus in the future. Students, upon request, are also enrolled by the college for public transportation provided by the Bengaluru Metropolitan Transport Corporation (BMTC). These strategies to provide environmental-friendly transportation options are completely optional and rely on the personal interest of each student, hence we have awarded 1 point.

## 6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?

- Yes, the medical school has both compost and recycling programs accessible to students and faculty.
- The medical school has either recycling or compost programs accessible to students and faculty, but not both.
- There is no compost or recycling program at the medical school.

Score explanation: Yes, SJMC has both organic and conventional recycling programs in place. Vegetable and fruit peels generated in the college canteen along with other leaves are fed to the in-house animals; such as the deer park and animal centre. In addition, there is also a plan to build a food composting site within the campus as currently food waste is being outsourced to a third party for disposal.

In terms of conventional waste, a memorandum of understanding (MOU) exists between the college and the following companies to aid in appropriate waste disposal.

• Biomedical Waste - Mairidini Bio Industries

- Solid waste MSGP InfraTech
- E-waste Royal Touch
- Hazardous waste Alpha Refineries

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

Score explanation: There are no sustainability guidelines currently for food and beverages on campus.

8. Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement?				
3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.			
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement.			
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement.			
0	There are no sustainability guidelines for supply procurement.			

Score explanation: Presently there are no sustainability criteria but the institution is considering procuring sustainably sourced devices and instruments. Soon there will be a sustainability checklist in the purchasing department.

9. Are there sustainability requirements or guidelines for events hosted at the medical school?				
2	Every event hosted at the medical school must abide by sustainability criteria.			
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required.			

0 There are no sustainability guidelines for medical school events.

Score explanation: SJMC has created a "Plate bank" for catering to all the management and student-level events. The plate bank was created to avoid the use of single-use plastic or paper plates. From the plate bank, plates and other cutlery can be borrowed for the duration of the event. All the student-led initiatives are encouraged to follow the sustainability guidelines laid by the campus sustainability club (Ecologics). However, there are no strict guidelines to abide by such sustainability measures for the events hosted by the medical school.

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

- Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
- There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
- There are no efforts at the medical school to make lab spaces more sustainable.

Score explanation: All the laboratories in SJMC are accredited by <u>National Accreditation Board for Testing and Calibration Laboratories (NABL)</u> for the past 14 years, with audits done every 2 years. Environmental sustainability is a criterion for accreditation by the NABL. The management is in the process of establishing an effluent treatment plant to treat the waste from labs.

### 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.
- 3 No, the institution is entirely divested from fossil fuels.
- The institution has partially divested from fossil fuel companies or has made a commitment to fully divest, but currently still has fossil fuel investments.
- The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
- Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

Score explanation: The Institution's endowment portfolio does not include any fossil fuel companies. All the power contracts are given to companies advocating wind and solar energy.

Section Total (16 out of 31)	16
------------------------------	----

Please note:

Medical school- SJMC National Academy of Health Sciences

Institution- Rajiv Gandhi University of Health Sciences

## 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%	
В	60% - 79%	
С	40% - 59%	
D	20% - 39%	
F	0% - 19%	

<sup>\*</sup>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+.

[Click here to calculate your score]

### Planetary Health Grades for the SJMC Medical College

The following table presents the individual section grades and overall institutional grade for the SJMC Medical College on this medical-school-specific Planetary Health Report Card.

Section	Raw Score	Letter Grade
Planetary Health Curriculum (30%)	$(25 / 69) \times 100 = 36.23\%$	D+
Interdisciplinary Research (17.5%)	(6 / 17) x 100 = 35.29%	D+
Community Outreach and Advocacy (17.5%)	$(7/14) \times 100 = 50.00\%$	С
Support for Student-led Planetary Health Initiatives (17.5%)	(8 / 15) x 100= 53.55%	С
Campus Sustainability (17.5%)	$(16/31) \times 100 = 51.61\%$	С
Institutional Grade	62 (44.16%)	C-