Planetary Health Report Card (Veterinary Medicine):

Colorado State University, School of Veterinary Medicine

2024-2025 Contributing Team:

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Land acknowledgment:
Colorado State University acknowledges, with respect, that the land we are on today is the traditional and ancestral homelands of the Arapaho, Cheyenne, and Ute Nations and peoples. This was also a site of trade, gathering, and healing for numerous other Native tribes. We recognize the Indigenous peoples as original stewards of this land and all the relatives within it. As these words of acknowledgment are spoken and heard, the ties Nations have to their traditional homelands are renewed and reaffirmed.

CSU is founded as a land-grant institution, and we accept that our mission must encompass access to education and inclusion. And, significantly, that our founding came at a dire cost to Native Nations and peoples whose land this University was built upon. This acknowledgment is the education and inclusion we must practice in recognizing our institutional history, responsibility, and commitment.

Summary of Findings

Overall Grade	B

Curriculum	B

- The veterinary program at Colorado State University (CSU) does include planetary health in the curriculum, however it would benefit by starting earlier (year 1), with the development of a scaffold that can continually be built upon. Efforts to expand experiential learning within the veterinary teaching hospital are also needed.
- **Recommendations:** As the current program is undergoing significant revision, ensuring that planetary health education is introduced early and better integrated throughout the program with emphasis on 'learning by doing' in a practice environment where sustainability efforts are central to the delivery of veterinary care

Interdisciplinary Research	A-

- The College of Veterinary Medicine and Biomedical Sciences at CSU is part of a strong interdisciplinary research culture, however the nature of the DVM program, specifically that it is physically and programmatically separate from the main campus, makes it challenging for many to take advantage of these opportunities. There is also a paucity of veterinary specific projects.
- **Recommendations:** Identify and foster opportunities for collaboration between campuses and ensure that veterinary professionals with an interest in planetary health can convene and discuss issues relevant to the profession that would benefit from research.

Community Outreach and Advocacy	C+

- There are many opportunities for CSU veterinary teams to improve community outreach and advocacy around planetary health, largely through client engagement in clinical settings.
- **Recommendations:** Centering sustainability around clinical care, the primary role of veterinary teams, will have immediate impacts for the community while simultaneously supporting students in their planetary health learning journey. Such efforts should include engagement of trainees early in their program. Partnering with other groups on campus to add an animal health voice to some of the narrative will also be beneficial given the role of animals in society and planetary health. Ensure that the new VHEC includes educational installments/programs/communications for clients, staff and students to highlight the importance of planetary health efforts of the college.

Support for Student-Led Initiatives	A

- Student-led planetary health initiatives at CSU are generally supported, however it can be challenging for students interested in planetary health issues to identify ways to engage on the topic.
- **Recommendations:** By centralizing information on college activities and opportunities, similar to the way this is organized at the institutional level, students could better identify opportunities for engagement. Ensuring consistent support (staff, financial) for student projects would also be helpful.

Campus Sustainability	B

- CSU is renowned for its sustainability efforts (AASHE STARS first institution and four time recipient of platinum rating) however the veterinary school is somewhat disconnected with the wider campus initiatives. Recent consultation with third party assessment team highlighted unique ways that the veterinary school

could focus efforts.

- **Recommendations:** The current building of a large primary care and veterinary education facility provides an excellent opportunity to establish a robust (staffing, financial, mission), veterinary specific, sustainability team that can address veterinary specific sustainability concerns and better engage with the broader campus efforts.

Statement of Purpose

Planetary health is human health.

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

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients' health. This preparation is in the hands of the institutions providing our health professional training. It is imperative that we hold our institutions accountable for educating 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, 4) community outreach centred on environmental health impacts, and 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 health professional education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.

- **Sustainable vetcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimizes use of healthcare services. For this veterinary specific assessment, we have modified this language to 'sustainable vetcare'.

- **Education for Sustainable Vetcare (ESV):** is defined as the process of equipping current and future veterinary professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous overall 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 vetcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESV 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. For veterinary medicine these have been expanded to include both domestic and wild animal species:

    1. Describe how the environment and 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 veterinarian to protect and promote health is shaped by the dependence of health on the local and global environment.

- **Veterinary School/Department vs. Institution:** When "Veterinary School" is specified in the report card, this only refers to curriculum and resources offered by the School/department of Veterinary 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 Veterinary Medicine students, no matter where in the institution the resource comes from or if it is specifically targeted for Veterinary Medicine students, can meet this metric.

- **Environmental history (Curriculum metric #23):** 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 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).

- **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 is more than one "track" 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 veterinary school curriculum.*** *Today's veterinary students will be on the frontlines of tackling the animal and public health effects of climate and other environmental changes. Therefore, it is critical that veterinary students are trained to understand the health effects of these changes, as well as planetary health issues and principles more broadly. Topics like the seven exposure pathways (i.e., air, temperature, extreme events/ disasters, food, water, vector-borne diseases, and animal welfare), environmental health inequities, and disaster response principles must be part of every veterinary school's core curriculum.*

Curriculum: General

1.1. Did your veterinary school offer elective courses (student selected modules) to engage students in Education for Sustainable Vetcare or Planetary Health in the last year?	
Yes, the veterinary school has offered **more than one** elective whose primary focus is ESV/planetary health in the past year. (3 points)	
Yes, the veterinary school has offered **one** elective whose primary focus is ESV/planetary health in the past year. (2 points)	
The veterinary school does **not** have any electives whose primary focus is ESV/planetary health, but there are one or more electives that include a **lecture** on planetary health. (1 point)	
No, the veterinary school has **not** offered any electives on planetary health or electives that include ESV/planetary health topics in the past year. (0 points)	
Score Assigned:	2
Score explanation: There is a single DVM elective course in the CSU DVM curriculum related to ESV/planetary health. VM 707 - Emerging Issues in Veterinary Medicine is a 2nd year DVM elective course where each semester the students choose the topic of interest that involves climate change, planetary health and/or environmental sustainability and they spend the semester producing a deliverable addressing one of these topics. Student projects from this class have been presented at conferences, published in peer-reviewed journals and shared with the general public in podcasts.	

Curriculum: Health Effects of Climate Change

1.2. Does your veterinary school curriculum address the relationship between increasing temperatures and animal health?
This subject was addressed **in depth** by the **core** curriculum. (3 points)
This subject was **moderately** addressed by the **core** curriculum. (2 points)

This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: As part of the CSU second year core curriculum, VM 714 (Preventative Medicine) includes a lecture on the multiple ways that climate change impacts animal health. One of the explicitly discussed exposure pathways is temperature. The relationship between temperature and other exposure pathways (air pollution, water, food) is also addressed. Heat stress in animals is also addressed as part of the production medicine curriculum (VM648) and small animal emergency curriculum (VM773).	

1.3. Does your veterinary school curriculum address the impacts of extreme weather on animal health and veterinary systems?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: As part of the CSU second year core curriculum, VM 714 (Preventative Medicine) includes lectures on the multiple ways that climate change impacts animal health. One of the explicitly discussed exposure pathways is extreme weather events.	

1.4. Does your veterinary school curriculum address the management of animals during climate associated disasters?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3

Score explanation: This topic is covered in all three years of the non-clinical curriculum at CSU. In the first-year students are introduced to the topic in VM 610 (Foundations, core course) through a lecture titled: 'Animals in Disasters' which goes into the management of animals during disasters. In the second-year core course VM714 (Preventative Medicine) there is mention of health services to animals in disasters and disasters are explicitly linked to climate change. In third-year core curriculum (786B, Applied Large Animal Behavior, core), there is discussion on the management of large animals in disaster as well a week-long elective practicum "Veterinary Emergency Management and Response". This elective goes into depth discussing how to prepare for and respond to various scenarios including climate associated disasters.

1.5. Does your veterinary school curriculum address the impact of climate change on the changing patterns (e.g., distribution and prevalence) of vector-borne diseases*?*	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Score explanation: This topic is covered in detail in several CSU courses, from first to third year. VM639 (virology) covers seasonality and the impact of climate change on all of the arboviruses impacting animal health (i.e. BTV, EHDV, AHSV, WNV, WEE/EEE/VEE). Also discussed are how landscapes, land use and land management changes with climate change. In second year, VM 714 (Preventative Medicine) includes discussion why increased exposure to vector-borne diseases is one of the ways that climate change impacts animal health. Finally, in the third year required, weeklong practicum on emerging and exotic animal diseases (VM786A, Emerging and Exotic Animal Diseases), climate change is discussed as a primary driver of several pathogens.	

1.6. Does your veterinary school curriculum address the health effects of climate change and air pollution?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2

Score explanation: As part of the CSU second year core curriculum, VM 714 (Preventative Medicine) includes lectures on the multiple ways that climate change impacts animal health. One of the explicitly discussed exposure pathways is air pollution. The topic of air pollution is later covered as part of the clinical curriculum with respect to lower airway inflammation.

1.7. Does your veterinary school curriculum address the relationship between animal welfare and the effects of environmental degradation and climate change?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: In VM 714 (Preventative Medicine), the six veterinary sustainability goals are discussed, one of which is animal well being (welfare). Also discussed in these lectures is the connection between climate impacts on animals and human welfare (human animal bond, loss of biodiversity) for the public as well as research specific to veterinary teams.	

1.8. Does your veterinary school curriculum address how animal health is impacted by climate-related changes in water availability and quality?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: As part of the CSU second year core curriculum VM 714 (Preventative Medicine) includes lectures on the multiple ways that climate change impacts animal health. One of explicitly discussed exposure pathways is water associated illness. Specific topics include the impact on water availability, water quality (pathogens and pollution), sea level rise and temperature dependent sex determination in reptiles.	

1.9. Does your veterinary school curriculum address how climate change can threaten the production, quality, and access to food for animals?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: In the first year of the core class VM648 (Food Animal Production & Food Safety), the topic of heat stress is introduced. This is built upon in second year core course VM 714 (Preventative Medicine), where there is a stronger link made between animal production and climate change including how climate associated stress reduces productivity in animals (heat, air pollution), how climate impacts food quality for animals and people (mycotoxins) and how climate can disrupt animal access to food (disasters).	

1.10. Does your veterinary school curriculum address the outsized impact of *climate change* on marginalized populations (e.g., low SES, women, communities of color, Indigenous communities, children, unhoused populations, and older adults) and indirectly the animals in their care?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: At CSU, the topics of sustainability, equity, and accessible care (SEA) are connected programmatically through the college office. The interconnectedness of these topics are presented to students during their first and second years as part of the Justice, Equity, Diversity and Inclusion (JEDI) offerings (DVM orientation & VM710 Foundations in Veterinary Medicine). In second year preventive medicine (VM714), the SEA topics are explicitly linked, then reinforced and as part of elective senior rotations (VM786B) where students participate in low/no cost veterinary clinics locally, regionally and internationally.	

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

This subject was addressed **in depth** by the **core** curriculum. (3 points)
This subject was **moderately** addressed by the **core** curriculum. (2 points)
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)
This topic was **not** covered. (0 points)

Score Assigned:	2

Score explanation: The epidemiology of climate-associated diseases is highlighted both when those diseases are being discussed (e.g., the spread of vector-borne diseases associated with climate change is covered in VM639) but also when the different categories of climate-associated illnesses are discussed in VM714. The influence of both physical and social systems on the consequences of climate associated illness is explicitly covered.

1.12. Does your veterinary school curriculum address how climate change can affect inherently vulnerable animal populations (e.g., endangered species, immunocompromised species, fragmented wildlife populations)?
This subject was addressed **in depth** by the **core** curriculum. (3 points)
This subject was **moderately** addressed by the **core** curriculum. (2 points)
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)
This topic was **not** covered. (0 points)

Score Assigned:	1

Score explanation: In the context of the veterinary sustainability goals covered in VM714 (Preventive Medicine), the goal of 'nature' focuses on the importance of protecting robust, interconnected and biodiverse systems as a health strategy. Similarly, at-risk cohorts like brachycephalic dogs or animals owned by vulnerable people are more at risk.

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

1.13. Does your veterinary school curriculum address the health effects of anthropogenic toxins (e.g., pollution, pesticides) on animal health?
This subject was addressed **in depth** by the **core** curriculum. (3 points)
This subject was **moderately** addressed by the **core** curriculum. (2 points)
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)

This topic was **not** covered. (0 points)	
Score Assigned:	3
Score explanation: As part of the second year core curriculum, VM 751 (Toxicology) extensively covers pesticides and rodenticides throughout several lectures. Associated with the lecture were several course objectives related to clinical toxicology, exposure, and mechanism of action. Toxins are referenced as part of the veterinary sustainability goals (water, waste) in VM714.	

1.14. Does your <u>veterinary school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, <u>or</u> in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	3
Score explanation: As part of the first-year core curriculum, VM 610 'Foundations I' features a lecture titled: 'Animals in Disasters' which goes into the management of animals during disasters including wildfires in Colorado which is arguably one of the most pressing climate threats of this region. As part of the second-year core curriculum at CSU's College of Veterinary Medicine, VM 714 (Preventative Medicine) features discussion on how veterinarians can reduce the climate impacts associated with their care, which includes discussion of actions being taken at the CSU veterinary teaching hospital. There is also discussion of how humans drive global climate change. In VM707 (Emerging Issues in Veterinary Medicine), a second-year elective, students choose an issue of interest that relates climate change, planetary health and/or environmental sustainability and they spend the semester producing a deliverable addressing one of these topics.	

1.15. Does your <u>veterinary school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults and indirectly the animals in their care?
This subject was addressed **in depth** by the **core** curriculum. (3 points)
This subject was **moderately** addressed by the **core** curriculum. (2 points)
This subject was addressed **briefly** in the **core** curriculum, <u>or</u> in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)
This topic was **not** covered. (0 points)

Score Assigned:	1
Score explanation: As part of the Hub Outpost Project (HOP, VM786B), senior veterinary students provide animal health services in rural Alaska villages and one of the topics covered is mercury exposure. Participation in these programs is elective.	

Curriculum: Sustainability

1.16. Does your <u>veterinary school</u> curriculum address educating clients on environmental and health co-benefits of a healthy animal's diet (e.g., seaweed in ruminant diets to reduce methane emissions, the difference between CO_2 emissions in production of dry vs. wet dog food)?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, <u>or</u> in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: In the core first-year course, VM723 (Veterinary Nutrition and Metabolism), there is brief discussion of the negative externalities associated with feeding food to pets that are intended for humans.	

1.17. Does your <u>veterinary school</u> curriculum address the carbon footprint of vetcare systems?	
This subject was addressed **in depth** by the **core** curriculum. (3 points)	
This subject was **moderately** addressed by the **core** curriculum. (2 points)	
This subject was addressed **briefly** in the **core** curriculum, <u>or</u> in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: Strategies to reduce the environmental impact of veterinary care are introduced in the context of the six veterinary sustainability goals in the required second year course VM714 (preventive medicine). There are some domain specific examples presented in different clinical courses (e.g., the warming potential of anesthetic gasses in VM737, Principles of Veterinary Anesthesia) and students have the opportunity to take VM707 (Emerging Issues in Veterinary	

Medicine) as an elective where each semester the students choose the topic of interest that involves climate change, planetary health and/or environmental sustainability and they spend the semester producing a deliverable addressing one of these topics. Finally, as part of their orientation to their clinical year, all students are given a talk on sustainability policies in the CSU veterinary teaching hospital.

1.18. Does your veterinary school curriculum cover these components of sustainable clinical practice in the core curriculum? (points for each)	**Score**
The health **and** environmental **co-benefits** of **avoiding** over-medicalization, over-investigation and/or over-treatment. (2 points)	2
The environmental impact of **pharmaceuticals** and over-prescribing as a cause of climate health harm. Alternatively teaching on **deprescribing** where possible and its environmental and health co-benefits would fulfill this metric. (2 points)	2
The health **and** environmental **co-benefits** of **non-pharmaceutical management** of conditions where appropriate such as exercise, physical therapy, mental stimulus, and enrichment. (1 point)	1
Environmental impact of **surgical** vetcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	1
The impact of **anesthetic** gasses on the vetcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anesthesia or choosing less environmentally harmful anesthetic gas options with reduced greenhouse gas emissions. (1 point)	1
The impact of **veterinary-medicine-produced toxins** on the environment (e.g., barbiturates from buried animals, drugs used in food animals). (1 point)	1
Waste production within vetcare **clinics** and strategies for reducing waste in clinical activities (e.g., single use items in the inpatient or outpatient setting). (1 point)	1
Score Assigned:	9

Score explanation: Covered in clinical orientation

1) Covered in Parasitology (lecture) and bacteriology (mentioned) – antimicrobial stewardship
2) Covered in Bacteriology (probiotic lecture), Nutrition, and Clinical Science
3) Covered in clinical orientation
4) Covered in VM737, Principles of Veterinary Anesthesia & clinical orientation
5) Covered in food animal
6) Covered in 4th year orientation entering the teaching hospital

1.19. To what extent does your veterinary school emphasize the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?

Indigenous knowledge and value systems are **integrated throughout** the veterinary school's planetary health education. (3 points)
Indigenous knowledge and value systems as essential components of planetary health solutions are included at **a moderate depth** in the core curriculum. (2 points)
Indigenous knowledge and value systems as essential components of planetary health solutions are included **briefly** in the core curriculum or in any depth in **elective** coursework. (1 point)
This topic was **not** covered. (0 points)

Score Assigned:	1

Score explanation: The CSU Land acknowledgment is addressed frequently throughout the curriculum. For students who participate in elective clinical rotations in Alaskan villages (Hub Outpost Project) or engage with the Navajo Nation programming, the topic is covered.

1.20. Does your veterinary school curriculum address/demonstrate how to be environmentally sustainable in your hospital operations?
This subject was addressed **in depth** by the **core** curriculum. (3 points)
This subject was **moderately** addressed by the **core** curriculum. (2 points)
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)
This topic was **not** covered. (0 points)

Score Assigned:	2

Score explanation: As part of orientation to clinics, all senior students are given a talk on sustainable veterinary practices, which highlights policies and resources at the CSU veterinary teaching hospital. The presentation is given by the preventive medicine resident who leads sustainability efforts in the veterinary hospital. Additionally, many students have engaged in projects related to sustainability at the teaching hospital through their elective coursework (VM707), employment (veterinary sustainability intern positions) or club activities (one health club).

1.21. Does your veterinary school curriculum address the impact of climate change on access to veterinary care?
This subject was addressed **in depth** by the **core** curriculum. (3 points)
This subject was **moderately** addressed by the **core** curriculum. (2 points)
This subject was addressed **briefly** in the **core** curriculum, or in any depth by other non-core learning experiences (e.g., elective coursework). (1 point)

This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: CSU is increasingly connecting educational and programmatic efforts that connect accessible care to climate as part of the new 'SEA' (sustainability, equity, and accessible care) initiative. At present, the topic is briefly introduced in VM714 (preventive medicine) in the context of building animal health resilience then integrated largely in the experiential programming around accessible care. This is an area targeted for significant expansion in the new curriculum.	

Curriculum: Client Communication Applications

1.22. Does your veterinary school's curriculum introduce strategies to have conversations with clients about the health effects of climate change?	
Yes, a **comprehensive list of strategies** are introduced for having conversations with patients about climate change in the **core** curriculum. (2 points)	
Yes, some strategies are introduced for having conversations with patients about climate change in the core coursework, or at any depth in elective coursework. (1 point)	
No strategies introduced for having conversations with patients about climate change. (0 points)	
Score Assigned:	0
Score explanation: While there is extensive programming on client communication, the current curriculum does not include strategies for communicating with clients on the topic of climate change explicitly.	

1.23. In training for client encounters, does your <u>veterinary school's</u> curriculum introduce strategies for taking an environmental history or exposure history?	
Yes, the **core** curriculum includes a **comprehensive** exploration of strategies for taking an environmental history. (2 points)	
Yes, the **core** curriculum includes **some strategies** for taking an environmental history (or in any depth in the elective curriculum). (1 point)	
No, the curriculum does **not** include strategies for taking an environmental history. (0 points)	
Score Assigned:	2
Score explanation: Client communication is part of the core veterinary curriculum that transcends years within the program, and collecting history is a large component of the training. All students are provided a Wellness History Worksheet and included in that is a section called "Environmental Data." This includes questions involving the human-animal relationship, the pet's role, caregivers' roles and responsibilities, social interactions, lifestyle, daily activities, and recent life events. This	

coursework sets the foundation that carries students into their clinical years where they practice their developing skills in daily interactions with clients.

1.24. Does your veterinary school's curriculum introduce strategies to discuss protection of animals from environmental harms? (e.g., disaster planning preparedness, animal management during smoke events)	
Yes, the **core** curriculum includes a **comprehensive** exploration of strategies for discussing protection of animals from environmental harms. (2 points)	
Yes, the **core** curriculum includes **some strategies** for discussing protection of animals from environmental harms. (1 point)	
No, the curriculum does **not** include strategies for discussing protection of animals from environmental harms. (0 points)	
Score Assigned:	1
Score explanation: Client community is part of the core veterinary curriculum that transcends years within the program, and collecting history is a component, but it does not go into detail on environmental history. In the community practice rotation (clinical rotation, VM786B) students learn to collect an environmental history including activities of daily living, recent life events and household style. This rotation is required for small and mixed animal focused students, but only an elective for large animal focused students.	

Curriculum: Administrative Support for Planetary Health

1.25. Is your veterinary school currently in the process of implementing or improving Education for Sustainable Vetcare (ESV)/planetary health education?	
Yes, the veterinary school is currently in the process of making **major** improvements to ESV/planetary health education. (4 points)	
Yes, the veterinary school is currently in the process of making **minor** improvements to ESV/planetary health education. (2 points)	
No, there are **no** improvements to planetary health education in progress. (0 points)	
Score Assigned:	4
Score explanation: CSU is currently undergoing a substantial curriculum revision as well as building a new Veterinary Health and Education Complex, both of which will launch in 2026. The physical building is designed to achieve two third party credentials, LEED (US Green Building Council) and WELL (International WELL Building Institute), that either focus on (LEED) or include (WELL) sustainability. To complement the development of physical spaces, CSU has hired external sustainability consultants to develop a sustainability plan that informs programming within the physical spaces. In the new curriculum, elements of ECS are embedded in both the core and	

elective programming as well as experiential learning through the physical and programmatic elements in place for the facility.

1.26. How well are the aforementioned planetary health/Education for Sustainable Vetcare topics integrated longitudinally into the <u>core</u> curriculum?	
Planetary health/ESV topics are **well integrated** into the core veterinary school curriculum. (6 points)	
Some planetary health/ESV topics are appropriately integrated into the core veterinary student curriculum. (4 points)	
Planetary health/ESV is not integrated and is primarily addressed in **(a) standalone lecture(s).** (2 point)	
There is **minimal/no** education for sustainable healthcare. (0 points)	
Score Assigned:	4
Score explanation: Veterinary students are exposed to some climate related topics (i.e., heat stress) in their first year but it is not until the first term of their second year when whey are given a more extensive overview of the topic that includes both health impacts and opportunities for veterinarians to act (VM714). It is in this same term that they can engage in project work that more deeply explores these topics (VM707). There is little formal teaching on sustainability in the third year of the curriculum, however students can participate in the junior practicum on disaster preparedness and response or set up independent studies with CSU faculty, or external mentors, to explore the topic as a small project. Finally, prior to entering the clinics full time as senior students, everyone is given a talk on how to be more sustainable in clinical care. As part of the CSU curriculum revision, the sustainability work will be tied more to accessible care and DEIJ topics as well as better integrated throughout the entire curriculum.	

1.27. Does your <u>veterinary school</u> employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable vetcare as a theme throughout the course?	
Yes, the **veterinary school** has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)	
No, the **veterinary school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)	
Score Assigned:	1
Score explanation: At present, there is a single professor responsible for assessing and expanding (as necessary) sustainability programming for veterinary trainees at CSU. This person is part of a broader team (SEA) that seeks to align efforts with those around equity and sustainable care and also the curriculum revision team more broadly. The faculty mentors ACVPM residents whose	

program is focused on sustainability and those residents interact with DVM students across years of the curriculum.

Section Total (60 out of 86)	**69.77%**

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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: The College of Veterinary Medicine and Biomedical Sciences at CSU includes four departments, all of which have staff and faculty working on planetary health topics This work is often facilitated by research groups, centers or schools (e.g., Center for Vector-Borne Infectious Diseases, One Health Institute, School of Public Health, School of Global Environmental Sustainability) that unite research teams on topics of shared interest (e.g., air pollution). There is also a group of DVM students, residents and faculty that are specifically focused on ways that the veterinary profession can reduce its negative environmental impacts, address sustainability education needs of veterinary teams and minimize the health impacts of climate change on animals.	

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

There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research. (1 points)
There is **no** dedicated department or institute. (0 points)

Score Assigned:	3

Score explanation: The CSU School of Global Environmental Sustainability (SoGES) was created in 2008 to 'reach across disciplines and colleges to forge new alliances and advance greater understanding of the challenges to achieving sustainability faced by our nation and global community'. The school is committed to interdisciplinary work and has engagement from all colleges on campus. In 2023, a new Climate Change Initiative was launched within the office of the vice president for research. This center works closely with SoGES but focuses exclusively on climate change.

2.3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your institution?
Yes, there is a process in which community members impacted by climate and environmental injustice have **decision-making power** in the climate + environmental research agenda. (3 points)
Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda. (2 points)
No, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda. (1 points)
There is **no** process, and **no** efforts to create such a process. (0 points)

Score Assigned:	1

Score explanation: There are several research groups at the CSU's College of Veterinary Medicine and Biomedical Sciences that are working in communities disproportionately impacts by climate change and other environmental hazards. For example, there are ongoing collaborations with the Navajo Nation to assess and remediate Uranium contamination in wells on the reservation, and combat vector-borne pathogens and prion diseases. However, while such projects have developed with stakeholder engagement, collaborations tend to develop organically and not through a formal process. There is ongoing discussion as to how a more formal process could be developed and supported.

2.4. Does your institution have a planetary health website that centralises ongoing and past research related to health and the environment?
There is an **easy-to-use, adequately comprehensive** website that **centralises** various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities. (3 points)

There is a website that **attempts to centralise** various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive. (2 points)	
The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment. (1 point)	
There is **no** website. (0 points)	
Score Assigned:	3
Score explanation: The main landing page for sustainability activities at CSU is https://green.colostate.edu. This site serves as a hub for all campus activities, including academics, research, engagement opportunities, history of sustainability on campus, news stories, awards and honors and campus initiatives.	

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:	3
Score explanation: CSU regularly hosts conferences on a range of planetary health topics. Some examples that highlight community engagement include the Climate Leadership Summit for high school students or the Managing the Planet seminar series put on by the School of Global Environmental Sustainability. While people from the veterinary school are regularly involved in the CSU events, the last planetary health conference held exclusively by the veterinary school was the 'Animal Health Advocates in a Changing Climate' virtual conference in 2021.	

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:	1
Score explanation: The CSU veterinary school is a member of the Global Consortium on Climate and Health Education and the AAVMC Climate Change Task Force.	

Section Total (14 out of 17)	**82.35%**

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Community Outreach and Advocacy

Section Overview: ***This section evaluates veterinary 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 participates in community focused events relating to planetary health. (1 point)	
No, there is **no** such meaningful community partnership. (0 points)	
Score Assigned:	3
Score explanation: CSU's Alaska Health Outreach Program (HOP) is committed to delivering preventive veterinary care for companion animals in the YK Delta of Alaska. Addressing financial and geographical barriers, the HOP team provides care and supports the health of communities and the environment through the health of the animals by controlling zoonotic disease transmission through vaccinations, parasite treatments, and managing populations via spay/neuter surgery. Similarly, other access to veterinary programs locally (i.e., Inclusive Health Collaborative) and internationally (i.e., preventive medicine rotations in Mexico, One health rotations in Africa) focus on building resilience in communities through expansion of animal health programs.	

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

The **institution** has not offered such community-facing courses or events. (0 points)	
Score Assigned:	3
Score explanation: Annually, the School of Global Environmental Sustainability (SoGES) presents six panels in the Managing the Planet series, covering diverse sustainability issues. Each panel features interdisciplinary experts from Colorado State University engaged in relevant research. The new cross campus Climate Change Initiative links the many education, research and engagement initiatives, which includes hosting events open to the public. The Climate Adaptation Partnership (CAP) facilitates collaboration among CSU researchers and center leaders focused on climate adaptation. With a dual focus on supporting interdisciplinary research and building connections between researchers and policymakers, CAP aims to apply climate adaptation findings in policy venues. Science on Tap Fort Collins, a community-based science outreach non-profit organized through the veterinary school, creates a relaxed environment for open discussions between scientists and the community. Some discussions focus on sustainability topics however this is not consistently.	

3.3. Does your institution have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)	
Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. (1 point)	
Students **do not** receive communications about planetary health or sustainable healthcare. (0 points)	
Score Assigned:	0
Score explanation: Students do no**t** receive communications about planetary health or sustainable healthcare	

3.4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?
Yes, the **institution** or **main affiliated hospital trust** offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health. (2 points)
Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers. (1 point)
There are **no** such accessible courses for post-graduate providers. (0 points)

Score Assigned:	2
Score explanation: In 2022, CSU launched a combined PhD/residency program (epidemiology and preventive medicine) that provides in depth training for DVM graduates on sustainability topics relevant to animal health. The resident is actively engaged in several DVM sustainability programs through both formal coursework (VM707) and helping students on sustainability projects through clubs and informal mentorship.	

3.5. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?	
Yes, the **institution** 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 affiliated hospitals have accessible educational materials for patients.	

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 **institution** 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 affiliated hospitals have accessible educational materials for patients	

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

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Support for Student-Led Planetary Health Initiatives

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

4.1. Does your institution offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)	
The **institution** encourages sustainability QI projects (to 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, the institution **does not** offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	1
Score explanation: There are several ways for students to enact new, or engage in existing, sustainability projects on campus, but these are not required of all students, nor is there consistent funding available. The summer veterinary scholars program is available to a subset of veterinary students, and as a part of the program students are required to participate in green laboratory practice training and some small laboratory sustainability initiatives. A handful of veterinary students can be involved in Veterinary Sustainability Intern program, which allows students to learn more about environmentally and socially sustainable practices in veterinary medicine. Finally there is a veterinary preventive medicine (ACVPM) residency program with emphasis on sustainability, but only a small number of students can participate.	

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:	2

Score explanation: There are several ways that veterinary students can engage in research on sustainability topics. There is a formal veterinary summer scholars program that supports student projects on a variety of topics, including planetary health/sustainable healthcare. The program consists of a 12-week summer project in hypothesis-based research under a College of Veterinary Medicine and Biomedical Sciences faculty mentor. The program concludes with a research symposium where students present findings to faculty and peers. Topics include sustainability initiatives and planetary health.
Independent from this, the Veterinary Sustainability Intern team allows students to learn more about environmentally and socially sustainable practices (e.g., procurement, water, energy, waste) in veterinary medicine. These interns are supported by faculty mentors and encouraged to contribute directly to research of the group.

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

The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)

There is an institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the institution, but it lacks key information. (1 point)

There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)

Score Assigned:	1

Score explanation: Colorado State University Veterinary School has information on various websites that address sustainability, but it is not centralized. The new veterinary health and education project has a site that explicitly discusses sustainability in the new VHEC building, but not broader programs or people. Research groups with emphasis on sustainability often have their own website, but these rarely cross-reference other resources. The college research page includes details on sustainable laboratory practices, but not research on sustainability topics. Stories about sustainability are routinely shared on social media, and on college websites, but are not centrally organized. The veterinary school is referenced on several CSU sustainability websites.

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

Yes, there is a student organisation **with faculty support** at my institution dedicated to planetary health or sustainability in healthcare. (2 points)

Yes, there is a student organisation at my institution dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.** (1 point)	
No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)	
Score Assigned:	2
Score explanation: Colorado State University has a One Health Club that includes a board position specific to the environment. The club is supported by a faculty advisor and also the larger institutional One Health Institute dedicated to the idea: health for all of us – people, animals, places – depends on thinking about all of us as a system.	

4.5. Is there a student liaison representing sustainability interests who serves on a <u>department or institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	1
Score explanation: Colorado State University's Veterinary school class executive boards each include a sustainability chair tasked with facilitating accessible sustainable choices for the class. Their responsibilities include ensuring board members prioritize environmental consciousness in decision-making and event planning. Previous achievements by committees involve initiatives like composting in the cubes, "Bring Your Own Cup" events, and carpooling resources. The sustainability chair collaborates with the Wellness chair and oversees subcommittee members during their one-year commitment. Each year has their own representative. Students also participate in the Veterinary Health System Sustainability Committee which is open to staff, faculty and students who are part of the CSU veterinary hospital system.	

4.6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	**Score**
Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.	1
Panels, speaker series, or similar events related to planetary health that have students as an intended audience.	1
Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.	1

Cultural arts events, installations or performances related to planetary health that have students as an intended audience.	1
Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.	1
Wilderness or outdoors programs (e.g., that organise hiking, backpacking, kayaking, or other outings for students)	1
Score Assigned:	6

Score explanation:

1. The CSU Spur Campus allows "diverse research, demonstration and education programs to promote agricultural literacy and lifelong learning, foster agribusiness entrepreneurship, enhance the health and well-being of individuals and communities, and advance the sustainability of urban and rural food systems."
2. Annually, the School of Global Environmental Sustainability (SoGES) presents six panels in the Managing the Planet series, covering diverse sustainability issues. Each panel features interdisciplinary experts from Colorado State University engaged in relevant research.
3. Science on Tap Fort Collins, a community-based science outreach non-profit, creates a relaxed environment for open discussions between scientists and the community. Some discussions focus on sustainability topics.
4. As part of 'earth month' there are several arts and cultural activities that are available to the campus community.
5. The university has several external partnerships to advance sustainability efforts in the local community and beyond. Students engage through both formal (i.e., externships) and informal (e.g., clubs) to build community resilience.
6. At CSU, the Outdoor Programs allows students to experience the Rocky Mountains through guided trips, classes, and events each semester. This program offers students the opportunity to learn to rock climb, backpack, ski or participate in other activities like day hiking, snowshoeing, trail running, or ice climbing.

Section Total (13 out of 15)	**86.67%**

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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 veterinary 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:	3
Score explanation: At CSU, the President's Sustainability Commission serves as a dynamic assembly of members from diverse colleges, offering the President and Executive Leadership Team multifaceted insights on sustainability. Tasked with promoting the seamless integration of sustainability across all university facets, this commission includes a faculty representative from the College of Veterinary Medicine and Biomedical Sciences. The college also has salaried staff committed to activities within the School of Global Environmental Sustainability and the CSU Climate Change Initiative. Campus facilities also has salaried staff members dedicated to supporting sustainability efforts of the institution. For students, there is the university-wide student sustainability center which serves as a central information hub. Within the veterinary school, an influential Veterinary Sustainability Team actively champions sustainability practices. There is a fully funded residency program (American College of Veterinary Preventive Medicine, ACVPM) focused on veterinary sustainability with a team of faculty mentors.	

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

The institution has a **written and approved plan** to achieve carbon neutrality by **2040** (3 points)
The institution has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate** (1 point)
The institution does **not** meet any of the requirements listed above (0 points)

Score Assigned:	3

Score explanation: Colorado State University is steadfast in its commitment to sustainability, as outlined in the approved Climate Action Plan designed to achieve carbon neutrality by 2040 and eradicate greenhouse gas emissions. This comprehensive plan extends to the veterinary school and strategically addresses various facets, including electricity and natural gas usage, airline travel, commuting practices, agricultural methods, fleet vehicle management, refrigerant usage, and solid waste disposal.
For detailed insights into CSU's Climate Action Plan, please refer to the document available here. This strategic roadmap reflects the university's dedication to environmental stewardship and outlines concrete steps toward a carbon-neutral future.

5.3. Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?
Yes, institution buildings are **100%** powered by renewable energy. (3 points)
Institution buildings source **>80%** of energy needs from off-site and/or on-site renewable energy. (2 points)
Institution buildings source **>20%** of energy needs from off-site and/or on-site renewable energy. (1 point)
Institution buildings source **<20%** of energy needs from off-site and/or on-site renewable energy. (0 points)

Score Assigned:	1

Score explanation: Veterinary buildings at CSU are managed as part of the broader university facilities which includes extensive solar (16,762,014 kWH per year, updated 2023) and geothermal systems. The university has a goal of moving to 100% renewable electricity by 2030 and reaching carbon neutrality by 2040. As part of this goal, CSU seeks certification of new buildings, including the new veterinary health and education complex which will be LEED gold.

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: CSU generally encourages sustainable building and remodeling practices and maintains a registry of buildings that are LEED certified. Where buildings are constructed with state resources (at least 25% of project cost), the university aligns with state office of the state architect policies on sustainability for new construction or major renovations. The veterinary college operates within several of the LEED certified buildings (Johnson Family Equine Center, Vida, Center for Vector-Borne Infectious Disease, Western Colorado Research Center Diagnostic Laboratory) and the new Veterinary Health and Education Complex is pursuing both LEED and WELL certification, a first for any veterinary facility. The veterinary school has several older buildings that do not meet these sustainability standards.

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

Score Assigned:	2

Score explanation: The veterinary school aligns its transportation policies with those of the institution. CSU, in collaboration with Transfort (the city of Fort Collins' transit service), has forged a dynamic partnership to enhance accessibility to campus through an array of transit routes. To facilitate cross-campus journeys, CSU extends a complimentary on-campus shuttle service that seamlessly connects various points, including the veterinary teaching hospital.
Renowned as a platinum-level bicycle-friendly university, CSU boasts robust biking infrastructure. Embracing sustainable transportation practices, nearly half of CSU's faculty, staff, and students opt for alternative modes of commuting, as indicated by the university's comprehensive commuter survey. These diverse transportation options, including the free on-campus shuttle and extensive biking facilities, are readily available and frequently utilized by veterinary students.
We also verified our findings through the Sustainability Tracking Assessment and Rating System (STARS), and you can access additional information via this link.

5.6. Does your institution have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?	
Yes, the institution has **both** compost **and** recycling programs accessible to students and faculty. (2 points)	
The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)	
There is **no** compost or recycling program at the institution. (0 points)	
Score Assigned:	2
Score explanation: CSU's veterinary school prioritizes sustainable waste management throughout its campus, ensuring convenient access for students and faculty. Strategically placed around the buildings are 3-in-1 waste bins for trash, recycling, and composting, strategically located near dining tables, hallways outside of labs, and main entrances. At CSU, commitment to composting is evident with two dedicated facilities capable of processing all food waste and items labeled compostable. This encompasses a range of materials, including to-go containers from the dining hall, napkins, animal bones, and related byproducts. By fostering this comprehensive composting initiative, CSU's veterinary school actively contributes to minimizing its environmental impact and promoting a culture of sustainability on campus. We also verified our findings through the Sustainability Tracking Assessment and Rating System (STARS), and you can access additional information via this link.	

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:	3
Score explanation: Policies around food and beverage in veterinary buildings are consistent with those at Colorado State University more broadly. The university is dedicated to sourcing locally-produced foods, exemplified by partnerships with brands such as Bobos bars (Boulder), Fort Collins Spice Company, and Revolution Pops. The university's commitment extends to its Horticultural Center, which cultivates greens specifically for CSU's dining centers. While the reduction of meat consumption is an ongoing initiative, CSU is actively addressing this aspect to minimize its nitrogen footprint.	

Although grappling with challenges related to plastic packaging, CSU recognizes the complexity of the issue, often contingent on vendor practices and occasionally unavoidable for health reasons. Notably, CSU has eliminated disposable silverware and containers, opting exclusively for reusable or compostable alternatives.
Housing & Dining Services collaborates with food distributors to prioritize third-party certified and plant-based food selections, striking a balance between cost considerations for students and the procurement of high-quality products. CSU's stringent produce specifications require vendors to bid for and supply sustainable foods whenever feasible and reasonably priced.
To manage food waste responsibly, CSU's dining centers employ innovative techniques such as pulpers, biodigesters, and recycling processes for used cooking oil and food scraps. A remarkable 93% of all food waste is diverted through composting and waste-to-energy programs. Trayless dining, introduced in 2008, serves to reduce overall food waste and encourages students to take only what they need. Any surplus food is donated to the Larimer County Food Bank.

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:	2

Score explanation: At Colorado State University, our commitment to campus sustainability is underscored by the implementation of the Policy on Environmentally and Socially Responsible Procurement. This policy serves as a comprehensive guide, equipping CSU employees with the necessary guidelines, information, and resources to procure products that mitigate adverse impacts on both society and the environment. By adhering to this policy, CSU aims to support sustainable practices in the procurement process.
Aligned with the Environmental Protection Agency's five guiding principles of Environmentally Preferable Purchasing (EPP), CSU empowers its employees to make environmentally sound choices when acquiring goods for the university. While there are no specific mandates regarding the quantity or type of sustainable products to be purchased, CSU's procurement services actively encourage departments and staff to champion greener alternatives based on their preferences.
For a detailed overview of the CSU Policy on Environmentally and Socially Responsible Procurement, please click here. The policy is currently in revision and anticipated to be strongly in the future.
In addition to adherence to institutional policies, a team of veterinary students and faculty have developed and maintained a veterinary procurement guide as an open access ebook,
We also verified our findings through the Sustainability Tracking Assessment and Rating System (STARS), and you can access additional information via this link.

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?	
Every event hosted at the institution **must** abide by sustainability criteria. (2 points)	
The institution **strongly recommends or incentivizes** sustainability measures, but they are **not required.** (1 point)	
There are **no** sustainability guidelines for institution events. (0 points)	
Score Assigned:	1
Score explanation: At CSU's primary campus, comprehensive campus sustainability guides are readily available, encompassing resources such as the 'Zero Waste Event Guide' and the esteemed 'Platinum Guide.' These guides serve as invaluable references, offering essential sustainability directives for all planned events. Notably, the veterinary school also benefits from access to these guides, ensuring that sustainable practices are seamlessly integrated into their activities. The student chapter of the AVMA (SAVMA), which provides financial resources to clubs hosting events, encourages sustainable practices at all club events, however, it is up to the person planning the event to make such efforts.	

5.10. Does your institution have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
Yes, the institution has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable. (2 points)	
There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)	
There are **no** efforts at the institution to make lab spaces more sustainable. (0 points)	
Score Assigned:	2
Score explanation: At CSU, our Green Labs program, led by a team of experts, supports sustainable laboratory practices through education, incentives for more sustainable procurement and support to navigate third party laboratory certification through My Green Lab. Specifically within the College of Veterinary Medicine and Biomedical Sciences, there have been efforts to promote sustainability laboratory practices by integrating educational offerings into established research programs and competitions. For example, the Veterinary Summer Scholars Program, where DVM students are supported to work on veterinary research projects, has mandated that all students become certified My Green Lab Ambassadors. The annual college research has introduced an interdepartmental competition; the 'Green Pipette Award' is given to the veterinary department that has the most My Green Lab certified ambassadors and physical spaces of those presenting at the annual college research showcase. In 2022, there was a special topics course open to graduate students that focused on more sustainable laboratory practices which involved the development of an e-book resource specific for veterinary research at CSU. We also verified our findings through the Sustainability Tracking Assessment and Rating System (STARS), and you can access additional information via this link.	

5.11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
The institution is **entirely divested** from fossil fuels **and** has made a **commitment to reinvest divested funds** into renewable energy companies or renewable energy campus initiatives. (4 points)	
The institution is **entirely divested** from fossil fuels. (3 points)	
The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments. (2 points)	
The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organised advocacy** for divestment. (1 point)	
Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that. (0 points)	
Score Assigned:	1
Score explanation: Despite ongoing student/faculty advocacy for divestment, Colorado State University has not taken steps to divest from fossil fuel companies. A coalition of students, alumni, faculty, staff and community members are working together to demand Colorado State University disclose, divest, reinvest, and take a stand (https://divestcsu.org/). This campaign is modeled after the successful Divest Harvard Campaign.	

Section Total (22 out of 32)	**68.75%**

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Grading

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

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

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

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(60/86) x 100 = 69.77%	B
Interdisciplinary Research (17.5%)	(14/17) x 100 = 82.35%	A-
Community Outreach and Advocacy (17.5%)	(8/14) x 100 = 57.14%	C+
Support for Student-led Planetary Health Initiatives (17.5%)	(13/15) x 100= 86.67%	A
Campus Sustainability (17.5%)	(22/32) x 100 = 68.75%	B
Institutional Grade	**(Ax0.3 + Bx0.175 + Cx0.175 + Dx0.175 + Ex0.175) = 72.54%**	**B**

Report Card Trends

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