

Deliberative Polling to Inform the Design of the New School Focused on Climate and Sustainability: Briefing Materials

About This Event

At the Annual Meeting of the Academic Council on *May 23, 2020*, after an inclusive community process to identify the highest priorities for Stanford's long-range vision, President Marc Tessier-Lavigne announced a committee to design a blueprint for a new school focused on Climate and Sustainability.

The urgent need to move toward a more sustainable future highlights areas of research and education that not only link to practical societal problems but also harbor deep intellectual interest in their own right. The ideal future state for humans and the planet is one in which

- human societies and natural systems thrive in concert and
- all humans enjoy equitable access to food, clean air, clean water, and a peaceful dwelling place while preserving the rest of nature.

The strategy of the new school is to foster research, teaching, and engagement that support planetary stewardship. We cannot separate these three pillars because faculty members, students, partners, and stakeholders learn together and collaborate to implement what we learn. We conduct research with students and others by addressing important issues, including those which our individual and institutional partners and stakeholders identify as relevant and timely. We teach students by providing meaningful, active

learning experiences and by introducing them to our partners and their perspectives. We and our students engage with our partners by learning from them, conducting research with them, and collaborating with them to translate our research results into technologies and into institutional policies and practices.

As we design Stanford's New School focused on climate and sustainability, it is crucial that faculty members discuss key propositions, questions, and issues that will determine its success. Stanford administration intends to finalize decisions about the New School in June 2021. This deliberative polling event focuses on areas of scholarship, research, and impact, along with structure. A later event will focus on educational programs. We appreciate your helping us to identify the strengths, weaknesses, and opportunities related to various decisions that we could take. Thank you for advising us on these major decisions that will influence Stanford faculty and students for many years to come and may also influence the future of humanity.

What is Deliberative Polling?

Pioneered by James Fishkin at Stanford University's *Center for Deliberative Democracy*, Deliberative Polling® is a process that reveals the conclusions the public would reach if they had the opportunity to become more informed and

engaged by the issues. Fishkin and his collaborators Robert C. Luskin and Alice Siu have conducted Deliberative Polls in 30 countries. For this Deliberative Poll, the President's Office and the Center for Deliberative Democracy are engaging Stanford University faculty members instead of the general public. You, as part of a stratified random sample, will meet for two half-day-long deliberations to discuss issues surrounding Stanford's New School on climate and sustainability. We will hold the event online, using technology developed at Stanford by the Crowdsourced Democracy Team led by Ashish Goel from Management Science and Engineering. Before you participate in the event, we will ask you to complete a survey. When the event starts, we will randomly assign you to a small group to discuss the

issues. During these discussions, you will develop questions to ask a panel of experts on each issue.

At the end of the two-day event, we will ask you to complete another survey. We will share your comments with the larger Stanford University community, Stanford's leadership, opinion leaders, and policy makers (all while protecting your anonymity). In this event, Deliberative Polling® is an *advisory process*. Its outcomes will advise the President, the Provost, the Executive Cabinet, the Board of Trustees, and the Faculty Senate. It will also provide information to help individual faculty members and departments make decisions. This event focuses on areas of scholarship and impact; a later event will focus on educational programs.

Proposals for Deliberation on Day 1: Content and Activities

1. The New School should collaborate with other schools to make shared resources (such as grants, support for engagement, shared laboratories, shared instruments, and shared data facilities) for sustainability-related engagement and research broadly available to all scholars at Stanford.

Discussion

The scale, complexity and urgency of the sustainability challenge requires that Stanford mobilize the excellence of its entire enterprise - all seven Schools in deep engagement with global partners – to serve humanity and our planet. The President’s announcement of a School focused on climate and sustainability emphasized that this “21st century School” must enable the entire University to accelerate its research, education and impact in climate and sustainability. However, Stanford cannot afford to place every useful and important resource in every laboratory, every department, or even every school.

Arguments For

Shared resources increase the returns on our investments and provide broad access to capabilities that we cannot place in every laboratory. Sustainability-related research and education would thrive across campus with investment in shared platforms and facilities such as collaborative design studios, flexible lab space, data and software platforms, shared instrumentation and laboratory equipment, and facilities to support precommercial technology scale-up. In addition, the seed

grant programs in the Woods and Precourt Institutes have brought together faculty and students from all Stanford schools to accelerate novel research and training in climate and sustainability. By scaling that model, the New School could achieve the President’s vision of accelerating climate and sustainability research, education and impact across the whole University.

Arguments Against

Stanford has succeeded by concentrating resources in particular areas. An attempt to spread finite resources across the University will limit the New School’s ability to be a world-leading school in its own right. Furthermore, local management might provide better and more agile stewardship of facilities and other resources.

2. A set of proposals (2a through 2i) regarding various research topics for which the New School might incorporate a critical mass of faculty members: cities, climate science, earth and planetary sciences, energy, human health, human sustenance, the natural world, public policy, and social science and ethics.

The following proposals (2a through 2i) invite the participants to consider separately whether the New School should incorporate critical masses of faculty members for various candidate research topics (cities, climate science, earth & planetary sciences, energy, human health, social science & ethics, human sustenance, the natural world, and public policy). For

each candidate research topic (2a through 2i), we present a brief discussion and a brief statement of the Arguments For and Arguments Against.

We believe certain Arguments For and Arguments Against are universal or common to each research topic. We present those here at the beginning rather than repeating them for each topic.

"Universal Arguments For" or Advantages Associated with All Candidate Research Topics

For each candidate research topic, we think these are the generic advantages of appointing a critical mass of researchers in the New School:

- In each candidate research topic, Stanford researchers have the potential to make substantive, even game-changing contributions to human and planetary sustainability.
- Within the New School, Stanford researchers will integrate their thinking with the latest discoveries in other subfields of climate and sustainability, benefit from the resources of the New School, and contribute to the New School's educational programs.

"Universal Arguments Against" or Disadvantages Associated with All Candidate Research Topics

- Stanford researchers might be more productive if they study climate and sustainability from different disciplinary perspectives within their traditional departments rather than grouping together in the New School. By moving scholars into the New School, we remove them from the environments where they have succeeded and where

they currently flourish, and we transfer them into a new environment where they may lack transparent access to new theoretical and methodological developments in their core disciplines.

- Concentrating a critical mass of researchers in a single school risks weakening the ability of the University as a whole to generate a wide scope of discovery and innovation relative to any given candidate research topic.
- A New School with finite resources cannot do everything at once. We have to prioritize opportunities, manage tradeoffs, and decide how to roll out programs and research thrusts over time.

2a. The New School should include a critical mass of faculty members who conduct research related to Cities.

Discussion

Many of the world's critical sustainability battles will be won or lost in its cities. Cities drive development, providing economic opportunities and paths out of intergenerational poverty. They are responsible for 2/3 of the world's energy consumption and 70% of greenhouse gas emissions. As centers of innovation and productivity, cities are where the science, technology, and policy advances critical to charting a more sustainable course will be developed. Virtually all of the world's future population growth—from the current 7.8 billion to a projected peak of 9.9 billion in 2050—will happen in cities. This rapid growth of urban areas creates a host of environmental, economic, and social sustainability problems and opportunities. No comprehensive effort to address global

climate and sustainability challenges can be complete without including a focused effort on cities.

Arguments For

Stanford is uniquely poised to forge a new approach toward engaged research and education on cities that puts sustainability at the center. We have existing expertise in urban sustainability within many units across campus, addressing essential themes such as buildings and infrastructure, risk and resilience, environmental science, law, and policy, sociology and the arts, and race, diversity, and justice. We also have ongoing partnerships between Stanford and cities around the world that support research, educational opportunities for students, as well as the development, testing, and scaling of real-world solutions. Solidifying and building on our expertise within the New School will raise Stanford's profile as a leader in urban sustainability and will create new opportunities for synergy. It will provide a platform to elevate social inclusion and equity as key elements of sustainability, themes that are largely missing from science and engineering focused programs. Ultimately, a unit dedicated to sustainable cities will amplify Stanford's impact, both by co-creating solutions with cities in the Bay area and beyond, and by generating new knowledge that advances theory and scholarship across a myriad of climate and sustainability related disciplines. Stanford's current institutional 'greenfield' in sustainable cities could be viewed as a significant advantage, since it could be externally marketed as an exciting new direction and would not require re-branding

of an existing department wedded to a traditional, outmoded view of cities.

Arguments Against

Whereas Stanford has a current undergraduate Program on Urban Studies, we do not have an existing department of urban planning nor a reputation for being a leader in this field. Creating a sustainable cities unit within the New School will thus require resources, strong leadership, and a realistic timeframe.

2b. The New School should include a critical mass of faculty members who conduct research in *Climate Science*.

Discussion

GHG emissions are changing the climate system at a rate that is unprecedented in human history and perhaps in many millions of years. To prevent the most catastrophic impacts, human society must reduce GHG emissions to net zero in the next few decades while at least doubling the global supply of energy and broadening energy access. Even if this transition succeeds, the planet will continue to warm. We must therefore build societal resilience to rapidly intensifying, extreme climate conditions.

Our researchers have led global efforts to explore key factors such as large ice sheets that could cause sea levels to rise catastrophically, the global carbon cycle that could create "runaway feedbacks" in the global temperature, and the velocity of climate change across terrestrial and marine domains that could lead to biodiversity loss and extinction. Recent Stanford research has advanced the quantitative understanding of the

differences in global and national economic impacts at different levels of global warming.

Arguments For

Climate change research belongs in the New School because it constitutes the primary sustainability issue of our time. Stanford possesses many strengths that can address the climate challenge, as well as a long history of pioneering discoveries that have elucidated the causes, consequences, and solutions of climate change. At present, however, no Stanford academic unit focuses primarily on climate change. A world-leading School focused on climate and sustainability will require a critical mass of climate science experts and an institutional focal point that will enable Stanford to define emerging subfields, develop novel climate-focused curricula, and innovate and scale climate solutions.

Arguments Against

Since climate change is a pervasive challenge that requires widespread transformation, one might argue that climate science is too important to sequester; i.e., climate researchers might generate greater impact if they study climate from disciplinary perspectives within traditional departments rather than assembling in one academic unit.

2c. The New School should include a critical mass of faculty members who conduct research in *Earth and Planetary Sciences*.

Discussion

The various components of the Earth system (geosphere, atmosphere, hydrosphere, biosphere, and cryosphere)

and their interactions regulate the sentinel features of global change, such as sea level change. Furthermore, Earth supplies the materials and geological processes required for human sustenance and a sustainable economy, including food, water, minerals, geothermal energy, hydroelectric power, tidal power, and wind power. To identify Earth's resources and apply them efficiently and sustainably, we need expertise in hydrology, sedimentology, stratigraphy, structural geology, geophysics, geostatistics, geochemistry, volcanology, mineralogy, and petrology.

To sustain the natural world, we must understand its behavior in the past as well as the present. Earth and Earthly life have survived countless catastrophes. The lessons we draw from survivals in deep geologic time may help us preserve our own species and other species whose futures will depend on our decisions.

One of the few independent ways to test model predictions for how climate will respond to changes in atmospheric composition is to consult the geological record. We need the expertise and perspectives of paleontology, paleoclimatology, paleoceanography, and geochemistry to distinguish between natural ecosystem function and human-driven disequilibrium in the present.

Earth and Planetary Sciences is a broad discipline that seeks to understand how earth and other planets form and evolve; it encompasses frontier discovery work on deep time, the deep Earth, and (increasingly) deep space. Research into how Earth and other planets function and how Earth supports life on timescales ranging from seconds to billions of years

provides a useful context for our current studies of climate and sustainability.

Arguments For

Climate and Sustainability, whether defined narrowly or broadly, require perspectives that are unique to the Earth and Planetary Sciences. We must understand the processes that create the resources on which humans depend and the hazards that threaten human health and well-being. We must understand the processes that have shaped and regulated past periods of environmental change because they provide our closest analogues to future trajectories that are unprecedented in human experience. A world-leading school focused on Earth's climate and sustainability must therefore contain a strong emphasis on understanding planet Earth.

We must look not only at the history of Earth but also at the history of other planets in order to distinguish between anthropogenic and natural changes. Planetary science may provide key insights into how we can sustain the conditions necessary to sustain life on Earth. A better understanding of how other planets in our solar system may have become hotter, lost their water resources, or lost their atmospheres could guide our efforts at planetary stewardship.

Arguments Against

If the New School will include only scholarship that is directly and immediately relevant for climate solutions and sustainability solutions, some aspects of Earth and Planetary Sciences may not be deemed relevant. As a practical matter, it may be too difficult to make useful inferences about current problems of

climate science and sustainability on Earth based on insights gained from geologic time and deep space.

Including Earth and Planetary Sciences presents special transition challenges. On the one hand, including a large number of the faculty of the current School of Earth in the New School will require all members of the School to struggle with whether to fracture a currently well-functioning faculty group. On the other hand, including all members of the current School of Earth might result in the New School being perceived as "Earth Plus" and not representing a New School.

2d. The New School should include a critical mass of faculty members who conduct research in *Energy*.

Discussion

Today the energy sector accounts for 92% of all CO₂ emissions and 70% of all GHG emissions. To achieve net-zero emissions, human society must radically transform the hardware and methods by which we generate, transform, store, transport, and consume energy. We must build an energy infrastructure from technologies that don't emit CO₂ or other pollutants unless they incorporate anti-pollution measures. We also need scholarship to mitigate the impacts of carbon during the current transitional period, during which society must double the number of people who have access to energy even as we eliminate its carbon footprint.

Stanford researchers can contribute to the energy transformation in many ways, including the following:

- develop sources of clean, renewable energy, such as photovoltaics,

hydropower, wind energy, and wave and tidal converters,

- develop a new grid paradigm that can accommodate distributed and intermittent energy sources,
- increase the energy efficiency of machines (e.g., air heating and cooling products, ventilation units, water heaters, refrigerators, freezers, vacuum cleaners, washing machines, computers, televisions, game consoles, water pumps, power transformers, computers, electric motors, welding equipment, etc.),
- develop Carbon Capture, Utilization, and Storage (CCUS) technologies that capture CO₂ emissions from power plants *in situ* and either recycle them or inject them into reservoirs for safe, secure, and permanent storage,
- determine whether a carbon tax or a carbon cap-and-trade system could encourage the adoption of CCUS technologies,
- enable CCUS technologies to remove CO₂ from the bulk of the global atmosphere and possibly restore the atmospheric concentrations of greenhouse gases to pre-industrial concentrations, and
- replace petroleum-based liquid transportation fuels such as gasoline and diesel with low-carbon alternatives such as hydrogen and biofuels.

Arguments For

Climate change represent the primary threat to global sustainability. In turn, energy technologies represent the primary driver of climate change. By incorporating a critical mass of energy-related researchers, we will enable them to benefit from the

collaborations, culture, and resources of the New School, to provide expertise to the New School's educational programs, and to enjoy easier access to colleagues with expertise in social science and energy policy.

Arguments Against

Energy researchers may feel more comfortable in departments focused on traditional disciplines. Having a locus of energy researchers in the New School may compete with the energy expertise and emphasis needed in many disciplines that will be required to conduct the scholarship needed for a Global Energy Transition.

2e. The New School should include a critical mass of faculty members who conduct research in *Human Health*.

Discussion

Climate hazards (e.g., hurricanes, cyclones, typhoons, wildfires, extreme temperatures, droughts, sea level rise, and extreme rainfall and flooding) influence *health determinants* (infrastructure, biodiversity, disease vectors, water security, food security, air quality, migration, and conflict) and thereby influence *health outcomes* (deaths, injuries, heat-related illness, respiratory allergies, waterborne diseases, chronic diseases, mental health, etc.). The field of human and planetary health elucidates the connections between environmental impacts and human health to solve public health challenges at the interface of climate change, air and water pollution, food security, energy, poverty, oceans, and environmental justice.

Arguments For

Since climate hazards influence health determinants that influence disease outcomes, it seems natural that the New School would host scholarship related to Human Health. Teams of Stanford researchers exploit the links between people and the environment to design sustainable environmental solutions that promote human health and wellbeing while preserving or restoring natural ecosystems. They combine expertise in environmental science, political science, and economics to identify connections between environmental impacts and human health and to find solutions that improve public health by fostering a healthy environment. The New School will accelerate their efforts.

Arguments Against

Stanford has a world-leading School of Medicine that is best equipped to study and find solutions for Human Health issues, even those related to climate change and sustainability. It may be more effective to study the impact of the environment on human health within other existing units, such as particular sciences or departments within the School of Medicine.

2f. The New School should include a critical mass of faculty members who conduct research in *Human Sustenance*.

Discussion

Human sustenance depends on reliable, equitable, just, and sustainable access to a wide range of resources. Food security, water security, and energy security are critical for the sustainability of human societies around the globe. Stanford faculty

and students apply their knowledge about the links between people and the environment to design environmental solutions that promote human health and wellbeing while preserving or restoring the integrity and functioning of natural ecosystems.

Arguments For

Stanford researchers are helping to solve the problem of how to provide access to food, energy, and water for a growing population. Our researchers have established FEW programs in domestic and international field work, computational modeling, laboratory studies, data science, and policy. A suite of Stanford research projects seeks to discover and quantify groundwater and other freshwater resources. Stanford played a key role in the genesis of California's Sustainable Groundwater Management Act (California voters passed during the recent California Drought). Stanford teams are developing new ways to clean, recycle, and extract energy from wastewater, including technologies that our campus is now implementing in a living lab testbed. Stanford has long conducted research and developed pioneering solutions at the nexus of food security and the environment, including one of the world's first programs that applied the resources of data science to solve problems of sustainable development. Stanford researchers are now implementing an integrated approach to food-energy-water management in Amman, Jordan and in Pune, India, two cities with about 5 million residents, intermittent freshwater supplies, and significant competition with agriculture for water and energy.

Arguments Against

In addition to natural resources, human sustenance depends on a range of institutions, markets, policies and human behaviors. Justly and equitably providing for the needs of all humanity thus requires expertise and sustained attention from disciplines that currently reside in a number of Schools across the University. Rather than creating a locus within the New School, Stanford can be most effective by investing in research, teaching and impact across the University.

2g. The New School should include a critical mass of faculty members who conduct research in *The Natural World*.

Discussion

Anthropogenic threats (e.g., climate change, habitat loss, invasive species, environmental pollution, and extinction) are influencing the three pillars of life (biodiversity, ecological processes, and evolution). Two important goals in sustainability science are *a*) to determine how the impacts on these three pillars are affecting various species, including humans, and *b*) to mitigate the negative impacts of the anthropogenic threats. It is vital to understand human impacts on the natural world more deeply.

It is important to understand the earth's carbon cycle; e.g., the fluxes of carbon between soil and atmosphere, between soil and surface water, and between the atmosphere and the oceans, as well as the ways in which these fluxes depend on management practices and on climate change.

The Natural World encompasses a number of disciplines and areas of research and education that are currently strengths of existing departments.

Arguments For

Stanford researchers are investigating the impacts of climate change on terrestrial and aquatic ecosystems and on the global carbon cycle. For example, university researchers have hosted a pioneering ecosystem manipulation experiment to explore the interactive components of global change. In an experimental project on California grasslands, researchers have manipulated four variables (temperature, atmospheric CO₂, precipitation, and nitrogen deposition) over years of continuous experimentation. Since the plants in this ecosystem are diverse, small, and short-lived, the team can explore the impacts of a range of environmental changes over several generations of the dominant organisms. This outdoor laboratory has revealed novel insights into the responses that emerge when global changes occur in combination, as well as the relative importance of responses that do and do not involve changes in community composition.

In the aquatic environment, research teams are studying the impacts of acidification on ocean ecosystems. Others are investigating the possibility that natural solutions such as kelp forests might protect the coastal environment from ocean acidification. Stanford teams are studying marine reserves and other policy interventions that would protect ocean habitats and wildlife. For decades, Stanford has driven the global effort to quantify ecosystem services and to incorporate those services into policy decisions about conservation and planning.

Arguments Against

Disciplinary experts may be most effective if homed in an existing strong department. For example, biology, a broad and deep field with critical disciplines such as biodiversity, ecological processes, and evolution, might make greater contributions to climate change, habitat loss, invasive species, environmental pollution, extinction, and even team science and engagement if all biologists remain in the intellectually rich, fertile, and synergistic enclave of the Biology Department in H&S.

2h. The New School should include a critical mass of faculty members who conduct research in *Public Policy*.

Discussion

To achieve the goal of sustainability, we must not only understand how physical, biological, and social systems operate under the existing policy environment but also create new public policies. One critical function of public policy is to “level the economic playing field” so that producers’ aims to maximize profit and consumers’ aims to purchase inexpensive products do not conflict with environmental protection.

In the interest of justice, we must seek policies that redress the inequities that exist under the status quo. Economic justice requires us to distribute economic burdens associated with the energy transition equitably across demographic groups and to avoid economic hardship on individuals or groups that already are significantly disadvantaged. Environmental justice mandates that policies which improve the environment in one region do not compromise it in another.

Arguments For

Stanford researchers serve on advisory committees to governmental organizations, including the California Environmental Protection Agency and the U.S. Environmental Protection Agency. They contribute to international environmental assessment organizations such as the Intergovernmental Panel on Climate Change. Our economists develop models to assess the benefits and costs of policies that reduce greenhouse gases, protect ecosystem services, and allow promising new technologies to penetrate their respective markets. Stanford’s Energy Modeling Forum (SEM), which convenes energy and environmental policy analysts from around the world, has earned a reputation as a global leader in comparing models and interpreting their implications for policy. A critical mass of policy experts—perhaps affiliated with both the New School and other units that study policy, including SIEPR and the Freeman-Spogli Institute (recognized loci of public policy expertise and activity)—could strengthen the public policy landscape at Stanford.

Arguments Against

A new institutional locus of public policy emphasis within the New School could create external confusion, internal conflict, and overall inefficiency.

2i. The New School should include a critical mass of faculty members who conduct research in *Social Science and Ethics*.

Discussion

Human interactions and environment conditions influence each other in an

ongoing dynamic process. Human organizations, societies, institutions, and economies affect global environmental outcomes. Conversely, the environmental context shapes and changes human behavior, organizations, social processes, political institutions, and economic conditions. Environmental changes pose potentially existential threats to human livelihoods, institutions, and social structures around the world, especially in regions where most of the poor live.

Environmental solutions pose important ethical dilemmas related to social and environmental justice. Inequality, poverty, race, and access to power shape vulnerability to environmental stresses and erect persistent barriers to sustainability solutions. Environmental justice constitutes a critical component of climate and sustainability scholarship, education, and solutions. In recent years, an energetic community of Stanford students, staff, and faculty has organized a range of activities across campus and in engagement with outside entities. This community provides a foundation for the much larger investment in Environmental Justice necessary to achieve the vision of a world-leading School focused on climate and sustainability.

Arguments For

Stanford must overcome structural challenges to integrate the social and behavioral sciences into research on sustainability. Integrative work on sustainability is not merely an “applied” version of work already happening in traditional disciplines: it is fundamentally work that combines and forges new disciplines, and top scholars currently doing this work defy facile disciplinary

categorization. For example, integrated assessment models, which evaluate the costs and benefits of alternative policies to reduce emissions of greenhouse gases, require close collaborations among climate scientists, ecologists, and economists. A coordinated institutional focus on the human dimensions of climate and sustainability that includes a critical mass of talented social scientists studying socio-ecological systems would enable Stanford not only to stimulate critical new insights into human behavior, social institutions, and economic systems but also to educate and train the next generation of sustainability leaders.

Arguments Against

Stanford already hosts world-leading departments focused on human behavior and social interactions. A separate entity with authority and accountability for appointing faculty and granting degrees risks creating “second best departments.”

3. Faculty members in the New School should be free to seek and accept funding to conduct research on topics that might aid the energy industry to transition to a carbon-free world.

Discussion

The global demand for energy is growing faster than the amount of energy generated from renewable sources. Human societies will continue to rely on fossil fuels during a transition period to a net-zero-carbon energy system.

Arguments For

The freedom to seek funding is already enshrined in our Faculty Senate policy on Academic Freedom, and was upheld in a 2013 Faculty Senate debate on funding from the tobacco industry. Existing energy companies must participate in the transition to a net-zero-carbon energy system. Stanford researchers are already collaborating with the oil and gas industries as trusted advisors to help them sequester carbon, detect methane leaks, extract oil efficiently with minimal environmental impact, switch to natural gas as a transitional fuel, reduce the earthquake risks associated with fracking, and achieve other transitional goals listed in Proposal 3.d above. Many Stanford faculty members consider these topics intellectually interesting and societally useful. The oil and gas industries can provide unique and important data for sustainable energy research.

Arguments Against

Some members of the Stanford community consider it important to phase out the fossil fuel industry as soon as possible and therefore consider it unethical to work with fossil fuel energy companies. Financial support from fossil fuel energy companies may bias the research and compromise the public view of the New School's neutrality.

4. The New School should offer programs in executive and professional education.

Discussion

Professional education is the fastest way to spread the skills, values, and perspectives of sustainability to managers in government, industry, and the non-profit

sector. Stanford is uniquely qualified to offer professional education in sustainability because the university possesses strengths in science, engineering, business, policy, and law. The School of Engineering has established an excellent and widely respected program of professional education. U.S. and World Report ranked Stanford's Graduate School of Business as the country's top-ranked business school (in a 4-way tie) for 2021.

Arguments For

Professional education influences people who have the leverage and the power to change society. The New School could create highly impactful programs in professional education by combining Stanford's existing strengths in professional education with our broad and deep expertise in climate and sustainability.

Executive education also exposes research faculty to practitioners in a time-efficient, concentrated forum. This exposure raises faculty awareness of the issues and concerns seen as important to the world's most influential practitioners. Such exposure also creates relationships between faculty and practitioners that can result in field research opportunities. Research in the field, in turn, creates opportunities for students who can then be introduced to influential individuals and organizations.

Arguments Against

Professional education diverts attention from education of undergraduates and graduate students. Furthermore, a unit focused on executive education within the New School might compete with the GSB's world-leading executive education program, thereby creating internal conflict,

external confusion, and general inefficiency.

5. The New School's formal criteria for faculty hiring and promotion should value activities to accelerate impact along with research and teaching. The Faculty Senate and the Provost should appoint a committee to consider the implications of considering engagement activities in tenure decisions and the best practices for doing so.

Discussion

Faculty members in the New School engage in activities to accelerate impact such as transferring technology, and co-creating policy and practices with stakeholders who wish to take evidence-based environmental actions. Academic staff can play a large role, but the faculty's involvement will require an investment of time and may require research. In some cases these stakeholder-focused activities

may lead to publications in different venues than the ones that are traditionally valued by academics, or may not lead to peer-reviewed publications.

Arguments For

By including research, teaching, engagement, and sustainability contributions (including tech transfer and policy writing) as formal criteria for faculty hiring and promotions, the New School would motivate faculty members to undertake tasks that support climate and sustainability. Having faculty members engaged in such activities will, in turn, enrich the research and education environment.

Arguments Against

Weakening or appearing to weaken the traditional focus on research in appointments and promotions might 1) decrease the contributions of Stanford faculty to peer-reviewed scholarship or 2) diminish the status of Stanford or of individual faculty members in the broader academic community.

Proposals for Deliberation on Day 2: Evolution of Existing Structures

6. If individual faculty members wish to participate in the New School, the Stanford administration should strive to accommodate them.

Discussion

In forming any new entity, the process for choosing participants is critical – especially in forming a new school, since the movement of faculty affects both the academic unit they will leave and the New School they will join. This proposal vests each individual faculty member with the option to decide whether to participate in the New School. In principle, individual faculty members may wish to *a) take a 100% appointment in the New School, b) take a joint appointment in the New School, c) participate in the intellectual life of the New School without a formal affiliation, or d) elect not to participate in the New School.* This proposal is advisory; it merely implies that Deans and Chairs should strive to accommodate faculty participation.

Arguments For

The New School is tackling enormous problems; in principle, we need all the help we can get. This proposal eliminates the possibility that the New School might create resentment by excluding some people. It allows faculty who have not yet engaged in sustainability to do so. By allowing faculty members to opt in, we enable them to select the academic environment that they consider most conducive to their success, regardless of

the preference of the majority of the faculty in their unit.

Arguments Against

When a new group forms, the initial participants establish its culture and determine its profile within the larger organization. Success of the new group requires coordination, and it might be more difficult to coordinate the new group if each individual faculty member decides whether to join. Faculty whose research is insufficiently relevant may wish to join. Substantial numbers of faculty members leaving one department for the New School might weaken or fracture that department. A process in which many individuals can decide whether to join could create a logistical and governance challenge and thereby delay the work of the New School.

7. The faculty members of the New School should collectively undertake a process to finalize the design the academic structure.

Discussion

In principle, academic units such as departments may wish to collectively *a) join the New School as they are, b) become joint entities (i.e., participate in the New School and in another academic unit simultaneously), c) make joint appointments with the New School, or d) develop and offer joint curricula with the New School.* Such decisions would place constraints on the structure of the New School.

Arguments For

Flexibility for the New School to determine its own scope, content, and organizational structure would allow the New School to optimize its organizational structure for research, education and engagement. A collective discussion of structure would be a valuable formative, community building process and an opportunity for the members of the New School to reflect on their goals and priorities.

Arguments Against

Academic units that volunteer to join the New School are likely to contribute to it and strengthen it. The members of each academic unit are best qualified to decide what type of relationship with the New School will best allow them to fulfill their academic mission.

By vesting decision making at the collective scale, this proposal could create challenges to governance and logistics.

It may be difficult for faculty to decide to join the New School before they know its structure.

If the members of a unit collectively, but not unanimously, decide to join the New School, individual faculty may be faced with extremely difficult choices.

8. Stanford should emerge from the transition with seven schools: H&S, Law, GSB, Engineering, Medicine, Education, and the New School.

Discussion

Many previous discussions have focused on two alternatives: the 8-school option vs. the 7-school option:

- In the 8-school option, Stanford would keep its current seven schools (including SE3) and add the New School.
- In the 7-school option, the New School would supplant SE3. It would be possible to frame this transition in a number of ways: *a)* Stanford builds the New School upon the foundation of SE3, which maintains its traditional character and incorporates other fields of study; *b)* the New School absorbs all the intellectual and infrastructural resources of SE3 into a new entity; or *c)* the New School absorbs the most highly relevant intellectual and infrastructural resources of SE3 into a new entity, with some of the SE3 moving to another school (e.g., H&S and/or Engineering). The first two of these concepts may represent a distinction without a difference, or they may reflect subtle differences of perspective regarding which fields of study carry the most intellectual weight and therefore garner the most resources. The third concept, a distinct possibility, carries important implications both for the New School and for the faculty currently in SE3.

Arguments For

Stanford's unique assets in Earth and Planetary Sciences make profound contributions to studies of climate and sustainability. The School of Earth, Energy & Environmental Sciences (SE3) deserves substantial credit for the fact that QS World University Rankings (a partnership with Elsevier) named Stanford as the world's #1 university in Environmental Science in 2019 and in 2020. Similarly, U.S. News and World Report ranked Stanford as the #1 U.S. university in Environmental Sciences and as the #2 U.S. university in Earth

Science in its most recent ratings (2018). In addition, Stanford is a world leader in critical areas for climate and sustainability, such as modeling Earth's processes and applying sensor measurements and data science to image the Earth and analyze changes over time. By incorporating SE3, the New School would immediately become a world-class research and teaching organization that could facilitate transdisciplinary collaborations. Since SE3 has created a ready infrastructure that serves research, teaching, and engagement in sustainability scholarship, the 7-school option enables Stanford to avoid the cost and complexity of creating a new administrative infrastructure for the New School.

Arguments Against

Combining SE3 with the New School could diminish SE3's impacts related to research, education, or engagement. It could cause faculty members who currently enjoy productivity and comfort in SE3 to find themselves less content in a larger, broader 7th school. It could create the impression internally and externally that Stanford has disassembled a world-class school.

If SE3 dominates the New School, faculty in other fields may exert less influence on hiring, curricula, resource allocation and governance, and indeed may feel less welcome to join the New School at all, diminishing the ability of the New School to achieve its mission in climate and sustainability.

9. The New School should include in its organizational structure the Woods Institute for the Environment.

Discussion

The mission of the Woods Institute for the Environment is to produce breakthrough environmental knowledge and solutions that sustain people and the planet today and for generations to come. It envisions a future in which societies meet people's needs for water, food, health, and other vital services while sustaining the planet. It hosts the *Center for Ocean Solutions*, the *Center on Food Security and the Environment*, the program for *Disease Ecology, Health, and the Environment*, the *Global Freshwater Initiative*, the *Natural Capital Project*, the *Osa & Gofito Initiative*, the program on *Water, Health, and Development*, and *Water in the West*.

Arguments For

The mission of the Woods Institute overlaps substantially with the mission of the New School. Woods researchers, recognized as world leaders in climate and sustainability, would advance the New School's scholarship and teaching. Woods has created a ready infrastructure that serves research, teaching, and engagement in climate and sustainability. Given Woods' success at attracting faculty and students from all of Stanford's Schools, its inclusion would enhance the New School's ability to engage with the entire University. Woods could provide a mechanism for scholars from across the university to contribute to and participate teaching in the new school as well as in decisions about hiring and curriculum.

Arguments Against

Since its founding, Woods has served successfully as a resource "of and for all seven Stanford schools." Stanford can attribute much of its success in

interdisciplinary environmental studies to the vibrant, collaborative culture Woods has built, both by bringing together colleagues with primary faculty appointments across the university and by jointly recruiting new faculty/senior fellows. As part of a school, Woods may be a less attractive “second home” for existing faculty and a less successful advocate for funding and filling joint positions. Woods may better serve the needs of faculty, students and staff in all schools by remaining unattached to any single school, providing a framework for current and future faculty, as well as schools, to effectively engage with climate and sustainability at Stanford.

10. The New School should include in its organizational structure the Precourt Institute for Energy.

Discussion

The Precourt Institute for Energy provides a focal point for Stanford’s research, education, and engagement activities related to energy. Its domain encompasses basic science, technology development, policy, and business. Precourt disseminates research results, develops energy-literate leaders, and builds collaborations with industry, other research institutions, governments, and civic organizations in pursuit of sustainable, affordable, secure energy for all people. Precourt hosts the StorageX Initiative, the TomKat Center for Sustainable Energy, the Bits & Watts Initiative, the Sustainable Finance Initiative, the Stanford Environmental & Energy Policy Analysis Center, the Energy Modeling Forum, Stanford Energy

Corporate Affiliates, and the Strategic Energy Alliance.

Arguments For

The Precourt Institute’s research expertise in renewable energy, energy storage, grid modernization, energy efficiency, environmental impacts, energy economics, and energy policy would enrich the New School. The New School’s infrastructure for outreach will expand partnerships with external actors and thereby enhance Precourt’s current efforts in collaboration. Precourt would benefit from the ability to participate in hiring and promoting faculty, admitting students, and granting degrees. It may also benefit from efficiencies and economies of scale.

Arguments Against

Precourt has functioned successfully as a resource “of and for all seven Stanford schools.” It may serve the needs of researchers in all schools more effectively by remaining unattached to any single school. Scholars who are interested in energy but who would not belong within the New School could find colleagues within Precourt as a stand-alone entity.