

MEMO

ATTENTION: Members of Senate**TEL 778-782-5080****FROM: Dugan O'Neil, Vice-President Research & International****RE: The new SFU Strategic Research Plan (SRP) and SRP Implementation****DATE: November 17, 2022**

Dear SFU Senate,

The new SFU Strategic Research Plan (SRP) and SRP Implementation Plan were presented at Senate for consultation on October 3. They were posted for community consultation on the same day. Feedback has been collected through November 16 and has been incorporated into the documents. Attached to this memo is an updated SRP, an updated implementation plan, and a table of comments received and changes made.

While the university does not require Senate to approve an SRP, it was correctly pointed out at the October 3 meeting that federal granting councils request that the SRP be approved by the university's highest planning body. I request Senate's formal endorsement of the SRP at the December meeting, such that we can post an approved document before the end of the year. This would involve a motion such as:

"That SFU Senate endorse the 2023-2028 Strategic Research Plan as presented at the December 2022 Senate meeting."

Thanks,



Dugan O'Neil

SIMON FRASER UNIVERSITY'S 2023-2028 STRATEGIC RESEARCH PLAN

Simon Fraser University (SFU) has been one of the fastest growing research institutions in the country over the past 10 years. In that time, SFU scholars have been recognized both for traditional academic outputs and for community impacts. SFU is well-positioned to continue to expand its research activities, to deepen its engagement with community and to grow the impact of its scholars on the world. Our Strategic Research Plan (SRP) captures some of the breadth of activities at the university while identifying areas of strength and focus for 2023-2028. It is accompanied by an implementation plan that identifies specific actions that will be taken to support and enhance the impact of the university in these priority areas.

In preparing this plan, we have interacted with hundreds of community members through townhall-style meetings, survey responses and email. We have discussed their priorities and where they see their research going in the coming years. Clear themes emerged from these discussions, such as the role of SFU in confronting the climate crisis, the growth of human-health focused research at the institution, the need for the institution to value diverse forms of scholarship, the need to respect and incorporate Indigenous perspectives and knowledge(s) into research at the institution, and the need to support graduate students and other early career researchers in our community.

VALUES/APPROACHES TO RESEARCH

A broad consultation has been undertaken, led by the university president and the provost, called “SFU: What’s Next?”. That consultation has identified a draft set of values that help to define our university. Those draft values include:

- Critical thinking and academic freedom;
- Excellence and responsibility;
- Respect and reciprocity;
- Equity and belonging;
- Engagement and openness;
- Resilience and sustainability; and
- Innovation and adaptability.

To enact these values in the way we do research at SFU, there are several approaches we employ:

- **A Culture of Inquiry (critical thinking and academic freedom; excellence and responsibility; engagement and openness; respect and reciprocity; and equity and belonging):** We are here to advance knowledge and understanding on a wide range of topics from a wide range of perspectives. Our researchers will ask hard questions about challenging topics. SFU’s support of academic freedom should create a safe environment in which these topics can be addressed.
- **Indigenous Approaches, and Knowledge(s) (respect and reciprocity; engagement and openness; equity and belonging; and excellence and responsibility):** To understand and then address the complexity and urgency of many of the problems our society faces, we recognize that we need a broad and inclusive understanding of the world that incorporates many knowledge

systems and world views. Our commitment to reconciliation with Indigenous peoples includes reconciling different approaches to understanding the world. Frameworks such as two-eyed seeing and walking on two legs guide our approach.

- **Interdisciplinarity (engagement and openness; innovation and adaptability; excellence and responsibility; and respect and reciprocity):** Many of the most interesting academic questions are rooted in very complex problems that cannot be solved by a single researcher. Team-based work—often requiring team members from a variety of disciplines and trained in multiple methodologies—is the path to answering these questions. In addition to offering strong support for specialized disciplinary work, at SFU we support scholars working across disciplines by supporting partnerships both within the university and with other universities.
- **Linking Research to Teaching and Learning (excellence and responsibility, innovation and adaptability, engagement and openness):** We mentor students to be the next generation of researchers, innovators, and educators by engaging them in research processes. This enriches their education and the research produced. We embed practices of systematic inquiry, mentorship and apprenticeship in our research programs and extend and model these practices in preparation of educators who go on to work in early learning, K-12, community and post-secondary contexts.
- **Engagement with Partners or Communities (excellence and responsibility; respect and reciprocity; resilience and sustainability; engagement and openness; and innovation and adaptability):** In many fields of inquiry, engaging with communities outside academia leads to better scholarship. Those communities may include individuals, municipalities, First Nations, industry, NGOs or others. At SFU we support partnership within and outside academia to drive better scholarship and greater impact. This includes local and regional partnerships, national partnerships and international partnerships.
- **Knowledge Mobilization (innovation and adaptability; excellence and responsibility):** Research is not complete until the created knowledge is shared. That sharing happens via many mechanisms including traditional academic publication, policy creation, newspaper op-eds, white papers, social media, performances, creative artifacts, patents/licensing, new product development, creation of a company and other forms. At SFU we embrace open science, data and publishing. We also foster a culture of innovation both in the way that we perform scholarly work and in the way that we support it.

PRIORITY AREAS

SFU is a comprehensive research university, with research and other scholarly activity spanning a wide range of disciplines and approaches. The priority areas identified below capture institutional priority areas for 2023-2028.

Each of the priority areas below spans multiple disciplines. As an academic institution we are committed to building multi-disciplinary communities of practice in these areas. We also note that these priority areas intersect with each other and that some of the most interesting research happens at those intersections. For example, climate change is precipitating biodiversity loss. The One Health approach, which is actively employed by SFU researchers, recognizes that human health is connected to the health of animals and the environment thus strongly linking priority areas #1 and #2 below.

The United Nations' Sustainable Development Goals (SDGs) provide an international framework covering many of the most pressing issues of our time. Our university and our community members are committed to the SDGs and are putting them at the heart of our international engagement framework. Where relevant, links to SDGs are included in the priority area descriptions below.

Priority areas include:

1) Advancing Community-Centred Climate Innovation (C3I) (SDGs 3, 6, 7, 8, 9, 10, 11, 13)

Climate change represents one of the greatest challenges of our age. As a research topic, it crosses disciplines, touching deep societal, health and justice issues as well as climate science, mathematical modelling, biodiversity, and profound technological and economic change. While climate change is a global issue, its effects and the resources available to adapt and to mitigate future warming differ from community to community. Some communities will be pressed to adapt to drought and fire, while others will be combatting floods and landslides. Some will have access to considerable local renewable energy sources, and some will not. Different communities may therefore embrace different paths to resilience. Helping communities become resilient to the effects of the changing climate by integrating low-carbon approaches into their planning and integrating low-carbon technologies into their infrastructures is a daunting multidisciplinary challenge. Working with these same communities to provide education and support for their citizens is another aspect of the challenge. SFU's approach includes developing solutions at the community and regional level, followed by sharing and scaling those solutions to make impacts globally. With research strengths that span all of the relevant disciplines, SFU is well-positioned to take on these challenges. This priority area engages our researchers with all levels of government, industry and community members.

2) Supporting Health and Wellness of Individuals, Populations and Communities (SDGs 1, 2, 3, 6, 10)

The connection between the health and wellness of an individual, and the (global) community in which they live has never been more obvious. As we write this plan, British Columbia is in the midst of two public health emergencies—the global COVID-19 pandemic and a sharp rise in drug overdoses and deaths (the “opioid crisis”). These simultaneous emergencies have together exposed the effects of deep social inequities and discrimination, the fragility of our health systems, the psychological consequences of isolation, a lack of trust in authority/science and many other profound issues that can only be addressed through world-class research. SFU researchers are engaged in responding to the threats and burdens of disease via many approaches, including basic research into fundamental molecular and cellular processes, development of new technologies, tests and treatments for individuals, as well as education and public health approaches. They are also leaders in transforming our response to health issues through social determinants and cultural critique. Harnessing big data, genomics, molecular and cellular tools and treatments, wearable technologies, and other technological and social interventions, our researchers are influencing therapeutic development, health policy and individual health throughout the lifespan. SFU researchers also generate wellbeing in the communities they work with by engaging in mutual, respectful and empathetic processes of knowledge production. Harnessing research informed by indigeneity, nature-based experience, contemplation, and anti-racism can make important contributions to wellbeing, both individual and collective.

3) Expanding the Foundations of Knowledge and Understanding our Origins

SFU researchers ask fundamental questions about the natural world, as well as our societies and cultures. Insights that arise from this work change the way we think about the world and the place of humans in it. SFU researchers measure and predict natural phenomena on multiple scales from the subatomic to the cosmic, from a single gene to a multi-celled organism, and from single entities to complex interacting systems of those entities. A fuller picture emerges when we examine the development and progression of our languages, cultures and knowledge systems. This includes examining the role of human creativity and critical making in the production of new knowledge and understanding. Our researchers use data, quantitative techniques, as well as qualitative approaches across a wide range of disciplines within this

priority area. With more thorough insights into our complex world—both natural and cultural—we are better equipped to look forward, pushing the boundaries of discovery into new frontiers. Driven by curiosity, our researchers are deepening our understanding of the world.

4) Strengthening Democracy, Justice, Equity and Education (SDGs 5, 8, 10, 16)

The polarization of our society, mis/disinformation, threats to democracy, population migration and changing patterns of convergence and conflict challenge the structures of societies and shape the ways we interact with each other. Researchers at SFU are deeply engaged in studies of data and media democracy, and in questions of equity and justice in relation to environmental, educational, health, economic and governmental systems. This includes the causes and consequences of poverty and inequality. Matters of social inclusion, identity, diversity and belonging are key drivers behind how individuals and groups perceive, connect with, and learn about society at large. Considerations related to justice, equity and social responsibility also shape the ways we engage with communities, value their contributions, and inform a commitment to fostering dialogue, relationship building, imagination, critical design, and transformative learning. Environmental Social Governance research provides opportunities to foster the implementation of these values by industry. Fostering community participation in research is both a vehicle for social change and a critical source of scholarship.

5) Transforming Industry and Economies through Technology, Management and Policy (SDGs 9, 12)

Technology impacts every aspect of our lives—at multiple scales—from nanotechnology to satellite communication to technology for work and home life. These technologies are applied to all areas of human endeavor, from building a sustainable world, to improving human health, to transforming the way we teach and learn. SFU researchers are involved in new technology creation at all levels: creating the new materials that enable those technologies; engaging in design research and developing creative technologies that change how we interact with technology and each other; developing new types of hardware to enable future platforms like quantum computers; writing the algorithms required to process data and model the world around us as well as critiquing and educating people about the effects of those algorithms; and integrating and adapting existing technologies to a changing world. The adoption and use of emerging technologies are guided by management and policy research as one means to create economic and societal value and to engage in critical modelling of alternative technological futures. These research domains investigate the economic, environmental, health, political, educational and societal tradeoffs between incumbent industries and technologies and the emerging alternatives. SFU researchers also study the processes that underlie the adoption and use of new technologies—the process of bringing technologies “out of the lab” and into the hands of consumers and communities, as well as inequalities in technological uptake and impacts.

IMPLEMENTATION PLAN FOR SFU'S 2023-2028 STRATEGIC RESEARCH PLAN

Simon Fraser University's (SFU) Strategic Research Plan (SRP) provides a list of priority areas and approaches to performing research and other scholarly work at the university from 2023-2028. It is (necessarily) a high-level document describing long-term strategic priorities. In order to support the SRP, concrete steps will need to be taken by the Office of the Vice-President, Research and International (VPRI) and by the university community as a whole.

This implementation plan describes the actions planned by the VPRI in response to the SRP and to community feedback. It is a living document, with regular updates planned throughout the five-year period of the SRP. It identifies projects and initiatives that are meant to support SFU scholars, lower administrative barriers and create new opportunities for the SFU community. Many of the initiatives have been selected as a result of the extensive community consultation undertaken as part of the SRP process.

Some of the initiatives listed below are short-term with clearly measurable outcomes. Others require deeper change over longer timescales in order to complete. For longer-term initiatives, milestones have been created for the first year of the plan. There are some initiatives that, due to capacity constraints, are listed in this plan but will not start in the first year.

PRIORITY PROJECTS AND INITIATIVES

Each initiative lists a challenge and a planned action (with timeline) to address the challenge. The descriptions in this document are brief but—as projects spin-up—more detailed documentation will be created for each. The first project is specific to the priority areas identified in the SRP. Those that follow it are cross-cutting initiatives, designed to lower barriers to success in all priority areas.

SUPPORTING SRP PRIORITY AREAS

Challenge: Solving society's great research challenges requires collaboration across departmental, institutional, sectoral and international boundaries. The strategic priority areas described in the SRP are each multi-disciplinary in nature. Researchers are sometimes faced with barriers to collaboration across departmental, faculty and institutional boundaries. Researchers also sometimes do not feel connected to the priority areas described in a Strategic Research Plan.

Action: Working with deans, chairs and directors, faculty members, postdoctoral fellows and graduate students, we will identify a program of support for internal community-building and external partnership tailored for each strategic priority area. We will also identify institutional barriers to collaboration and feelings of inclusion in these internal communities. In year one, we will implement a set of supports around one of the priority areas. In future years, external (including international) partnership strategies for each priority area will be developed.

SUPPORTING RESEARCH GRADUATE STUDENTS

Challenge: Graduate students are key drivers of research activity in an institution. Vancouver is an attractive destination, but the high cost of living presents a challenge to our graduate students.

Action: Working closely with the provost, the dean of graduate and postdoctoral studies, SFU Advancement and with graduate students (through the Graduate Student Society), we will study ways to shift our limited resources to better support research graduate students. This includes study of tuition waivers, scholarships and bursaries. We will also work with SFU Advancement, provincial and federal funding agencies to grow resources available for graduate student support both for existing graduate students and to grow our research graduate student body. Within a year, we will set a university-wide minimum funding level for PhD students.

SUPPORTING POSTDOCTORAL FELLOWS

Challenge: SFU hosts a relatively small number of postdoctoral (postdoc) fellows for our number of faculty members. Existing postdocs sometimes feel like they “fall between the cracks” at SFU. They are neither faculty members nor students, and they have identified that many systems at SFU do not cope well with their *in-between* status.

Action: Working with the provost, the dean of graduate and postdoctoral studies, SFU Human Resources, and the Postdoctoral Association we will identify the concerns of postdocs and—within a year—provide a central managed point for support of postdocs. We will work with SFU Advancement to create an institutional postdoc program.

VALUING AND MEASURING SCHOLARLY IMPACT

Challenge: The ways in which we generate scholarly impact are varied. They include publications in high-impact journals, publishing books, performances, exhibitions, the engagement of community in research and the mobilization of knowledge to the non-academic community. Current incentive and reward structures within the university do not always reflect modern measures of research impact.

Action: Working with the provost, deans, chairs and directors, the library, and SFU Faculty Relations, we will examine SFU’s incentive and support structures to assess whether they align with the way the university values research impact as well as equity, diversity and inclusion. Materials to support departmental processes (e.g., Tenure and Promotion Committee) will be developed and made available to the community. Within a year, a working group will be formed, a broad assessment will be completed, and needed materials and support structures will be identified.

DECOLONIZING INDIGENOUS RESEARCH ETHICS—RESPONDING TO THE ARC CALL #34

Challenge: Walk this Path With Us—the final report of the SFU Aboriginal Reconciliation Council—included call-to-action #34: “Convene an Indigenous Research Committee to establish respectful and ethical protocols and practices for researching in and with Indigenous communities; and to ensure that Indigenous perspectives, knowledge systems, and ways of knowing are respected and supported in the scholarship of faculty and students.”

Action: In the first year, we will continue to support the ongoing work in Ethical Foundations, led by Professor Vicki Kelly (Faculty of Education). We will then implement changes to our human ethics processes and approaches based on what is learned from the work of the ethical foundations group. We will also build principles of “two-eyed-seeing” and “walking on two legs” into major institution-led research initiatives such as the application to the Canada First Research Excellence Fund.

BUILDING WORLD-CLASS RESEARCH SPACE AND INFRASTRUCTURE

Challenge: World-class research facilities are key to the performance of world-class research. The availability of high-quality research space is currently an important limiting factor in our research growth. The availability of appropriate digital infrastructure is key to many research programs.

Action: Working with the provost, SFU Facilities Services and deans, we will prioritize existing research space for capital improvements. We will continue to work as part of the team advocating for additional buildings on our three campuses. Within a year, plans for research space upgrades will be created and some upgrade projects will be underway. The VPRI will work with the library, ITS and others to prioritize digital infrastructure needed to support researchers.

SUPPORTING EARLY CAREER RESEARCHERS (FACULTY)

Challenge: New faculty members at the university face a number of challenges in starting their SFU research careers. These challenges may include obtaining research grants, recruiting students and research personnel, modifying research space, and purchasing and installing research equipment at the same time they are teaching new (to them) courses and settling into a new community.

Action: Working closely with the vice-president, people, equity and inclusion, SFU Faculty Relations, deans, associate deans research (ADR) and early career researchers, we will examine mentorship programs, internal peer-review platforms for grants, educational materials and other resources for new faculty, and streamlining of processes for support including for research space and equipment.

PROTECTING TIME FOR RESEARCH

Challenge: Faculty members have identified “lack of time” as the biggest constraint in increasing their research output. For individual faculty members, balancing the competing demands of research, teaching and service is challenging. For department chairs, school directors and deans, balancing the need to deliver academic programming—and to support a dynamic research environment—is also challenging.

Action: Consulting with deans, chairs and directors, ADRs and SFU Faculty Relations, we will identify barriers to availability and effective use of research time for faculty members. Best practices across faculties, schools and departments will be shared and places where flexibility exists in the system (e.g., course scheduling/stacking) and within the current collective agreement will be examined.

FUNDING RESEARCH CHAIRS

Challenge: In priority research areas our university competes for talent with institutions around the world. Externally funded research chairs provide a mechanism by which the university can attract world-class researchers to our institution. Once they arrive, chair funding can support their program of research. SFU has a limited supply of research chairs that have been accumulated (generally) in an ad-hoc manner over time.

Action: Working with SFU Advancement and deans, we will develop fundraising cases for research chairs aligned with the SRP priority areas.

INVOLVING UNDERGRADUATES IN RESEARCH

Challenge: SFU is a research-intensive institution, doing world-class work across a wide range of disciplines. Our undergraduate students should have the opportunity to learn about and to participate in that research.

Action: We will review the VPRI Undergraduate Student Research Awards program to consider its goals, funding levels and accessibility. We will create web resources to highlight and support undergraduate researchers. Working with the provost, deans, and the library, we will consider new ways to provide undergraduates with exposure to SFU research including opportunities to participate and potentially to earn degree credits for the work. With communications and marketing (C&M) teams across the university, including SFU's central C&M portfolio, we will consider how to raise the profile of SFU research among undergraduates at the institution.

SFU'S 2023-2028 STRATEGIC RESEARCH PLAN AND IMPLEMENTATION PLAN | COMMENTS AND FEEDBACK

NOTE: BELOW ARE THE COMMENTS/FEEDBACK RECEIVED FROM THE SFU COMMUNITY ABOUT THE DRAFTED STRATEGIC RESEARCH PLAN (SRP) AND THE SRP IMPLEMENTATION PLAN. THE TABLE ALSO INCLUDES THE CHANGES MADE TO ADDRESS THE COMMENTS/FEEDBACK.

COMMENTS/FEEDBACK:	CHANGE:
Updated values have emerged from SFU: What's Next.	Updated Strategic Research Plan (SRP) to include updated values. Integrated into SRP approaches.
Verbal: concern about use of knowledges	Changed to knowledge(s)
Email: concern that basic research into fundamental molecular and cellular processes of relevance to health and disease are not reflected in priority area #2.	Changed sentence to "SFU researchers are engaged in responding to the threats and burdens of disease via many approaches, including basic research into fundamental molecular and cellular processes, development of new technologies, tests, treatments for individuals and public health approaches."
Email: concerns from Chemistry department about lack of emphasis on therapeutic interventions, molecular tools and treatments, and non-infectious disease.	Suggested modifications to health priority incorporated.
Email: concern that the plan lacks the detail present in the SRPs from some other Canadian institutions. Preference for a plan that lists the ongoing areas of research at SFU in detail.	Responded that there are many styles of SRPs out there. Some are laundry lists of everything done at the university, others are more high-level. We have chosen the more high-level approach, leading to a shorter and more flexible list of priority areas. Once the document is translated onto the SRP web page(s) within the SFU Research website, we will be able to build pages corresponding to individual priority areas which give examples of ongoing research in those areas. While the SRP text is fixed, the linked pages will be dynamic.
Email: concern about quantitative focus of research performance as presented by the VPRI Office (e.g., counting research income and publications).	Responded acknowledging that quantitative measures do not tell the whole story of research impact. Presented a few alternatives used by the VPRI Office and how we support qualitative as well as quantitative outputs.
Email: concern that "Origins" does not capture broad swath of curiosity-driven research performed at the university. Suggested "Expanding the Foundations of Knowledge" in place of "Origins".	Changed title of priority from "Understanding our Origins" to "Expanding the Foundations of Knowledge and Understanding our Origins"
Email: concern that health and justice issues were not explicit in the C3I priority. Concern that the health priority was too focused on infectious disease, neglecting chronic disease.	Added health and justice to C3I priority; replaced reference to "infectious disease" with "disease".

Email: concern that the SRP implementation plan projects would contend for resources and could not be carried out at the same time.	Responded that not all projects would start at the same time (as indicated in the document introduction).
Email: not enough link between research and teaching. Recommended to add to the list of approaches.	Added an approach “Linking Research to Teaching and Learning”, adopting some of the suggested wording.
Verbal (Senate): concern that education research does not have a strong presence in the SRP. Email: A number of comments suggesting ways to weave education research into the existing 5 priority areas.	As education research spans disciplines, added as a cross-cutting approach relating research and education. Most of the comments were implemented or were addressed indirectly through implementation of other changes. Some comments could not be implemented as the base text was changed due to other comments.
Email: concern that only priority area #4 is focused on social sciences and humanities work and that the rest are heavily science and health focused.	Responded that there are SSHRC-funded researchers working in all 5 of the priority areas, as-written. While social sciences are throughout, “Origins” is also about 50/50 between humanities and natural sciences. The presence of fine arts and research creation has been increased in the new draft.
Email: suggestion to add “Reduce Inequality and End Poverty” as a 6 th priority area.	While this would be an excellent priority area, and there are SFU researchers studying poverty, it is not clear that this is an institutional research focus at a level requiring its own distinct area. It also did not come out during community consultations except for this one comment. No 6 th area was added, but a new sentence was added to priority area #4 to ensure that poverty-focused research is represented.
Email: concern that the SRP is too human-centric, ignoring the living natural world. Particular concern that biodiversity crisis is not mentioned in the community-centred climate innovation (C3I) priority and the One Health approach is not present in the document.	Biodiversity is added to the list of areas relevant to C3I. One Health has been added to the section preamble to illustrate how different priority areas (e.g., health and C3I) and linked and how some of the most interesting research can happen through the linkages.
Email: concern that the Origins priority is too human-centric.	Response – disagree. Asked commenter for suggestions to improve.
Email: concern that implementation plan neglects to mention chairs and directors in action statements.	Chairs and directors were added to several action statements.
Email: suggestion that implementation plan should contain a pledge to hire 50-100 new research faculty members.	Responded that this would be a matter for the next Academic Plan and the Provost rather than the SRP and the VPRI.
Email: suggestion that in addition to multidisciplinary strengths, a statement be made that we support strong disciplinary research in our departments and schools.	Statement added.
Email: concern that humanities is not well-represented in the SRP. Suggests a more future-focused “Origins” category to make it clear that humanities is not just about the past.	New version of “Origins” category with expanded title and updated wording (see changes above) sent to commenter.

Email: concern that many faculty members do not feel connected to the priority areas defined in a strategic research plan. Faculty members may feel that they are “on the fringe” of the university rather than in the core. Inclusive language needs to be used.	Implementation plan updated with modified wording around “Supporting SRP Priority Areas” to make it clear that one of the purposes of this community-building exercise is to increase inclusion among community members.
Email: request to add specific buildings to “Building World-Class Research Space and Infrastructure” as needing attention.	Conflicts with another comment requesting that all campuses and buildings be considered. Project approach will identify areas of greatest concern and work with facilities services to prioritize.
Email: request to include digital infrastructure, not just space, in “Building World-Class Research Space and Infrastructure”.	Statement added.
Email: request that the library be added as a partner in “Involving Undergraduates in Research” and “Valuing Research Impact”.	Added
Email: suggestions for wording of education-related cross-cutting approach in SRP.	Incorporated.
Email: emphasis on mitigation should be increased in community-centred climate innovation priority. Currently reads as stronger emphasis on adaptation.	Based on previous comments, we had already attempted to put mitigation and adaptation on the same footing. Added wording to strengthen mitigation and to ensure that it is clear that solutions developed locally are purposefully scaled globally.