



# Transdisciplinary Scholarship and Areas of Focus

FOR DISCUSSION – CONGRESS

## INTRODUCTION

Transdisciplinary scholarship is scholarship built around problems and possibilities, not professions. People from multiple backgrounds working together on challenges. Its focus is on building knowledge between, across and beyond traditional disciplines. In a complex time of ever-increasing specialization, it's a way to tackle the big questions of our day that do not fit into one department or one faculty, but require important contributions from those units. It's a way to create knowledge and come to solutions.

The world needs more of it.

**For our students,** a transdisciplinary approach will mean more exposure to experts from outside of your area of specialization and more opportunities to tackle big problems, truly meaningful work.

**For our faculty,** it means more freedom to take on impactful work you are passionate about and more ability to use your specialization in unconventional ways that provide additional real value to our community.

**For our broader community,** it means concerted effort to deal with our biggest challenges.

The *Working Group on Transdisciplinary Scholarship and Areas of Focus* has been tasked with making recommendations and facilitating a community discussion on how to best implement more transdisciplinarity into our work at the University of Calgary, and how we can make real our aspirations to be a university with a world-class approach to transdisciplinary scholarship – including education and research.

The model we have brought forward is closely tied to the idea of “Areas of Focus”, which we have been given the additional task of updating based on community feedback to ensure they reflect back what we are already doing as a University. As President McCauley described them in October, “rather than decree areas of strength and focus, [we need to] look at the areas our faculty have gravitated towards – pulled by academic passion and pushed by the needs of our community”.

These “Areas of Focus” do not replace organizing principles such as the Research Institutes and Strategic Research Themes. They take a challenge-based approach that encompasses these activities and serve as the starting point for our transdisciplinary mission.

As we approached our work, we were mindful that shining light on any area risks some feeling in the shadows. This is, emphatically, not our intent. Areas of Focus should be additive, optional and value-add. They must build upon deeply supported, broad-based disciplinary excellence. They must be rooted in the activity of our scholars

and must be community driven. They must reflect our commitments to Reconciliation, equity, diversity and inclusion. True transdisciplinarity demands nothing less.

As we put it in a new preamble to the areas of focus that attempts to define their purpose:

*“Addressing tomorrow’s problems require a fusing of world views and will come from unanticipated places. The University of Calgary must preserve and strengthen our commitment to being a comprehensive research university; a university committed to diversity – where the work of all scholars is important and valued. It is only through supporting a diversity of thought and background that a university can unlock the transdisciplinary solutions that our complex world demands.”*

Our work owes a great debt to those at the University who have been trailblazers in this area. We did not lack for examples of faculties, departments and individual scholars spearheading transdisciplinary approaches to address the big problems. We hope we have done your pioneering work justice in the framework we are providing.

On behalf of the working group, I am pleased to share our thinking on how best to implement *Transdisciplinary Scholarship and Areas of Focus* with our University of Calgary community,

**Rob Thompson**  
**Associate Vice-President (Research)**  
**Executive Director, Research Services**

## WHAT: PROPOSALS/RECOMMENDATIONS

*The Working Group on Transdisciplinary Scholarship and Areas of Focus has developed two proposals for consideration and discussion: 1) a structure through which transdisciplinary scholarship can be governed; and 2) an update to the “Areas of Focus” first presented in October 2020.*

### 1. Objectives, structure and resourcing of “Transdisciplinary Activity Centres”

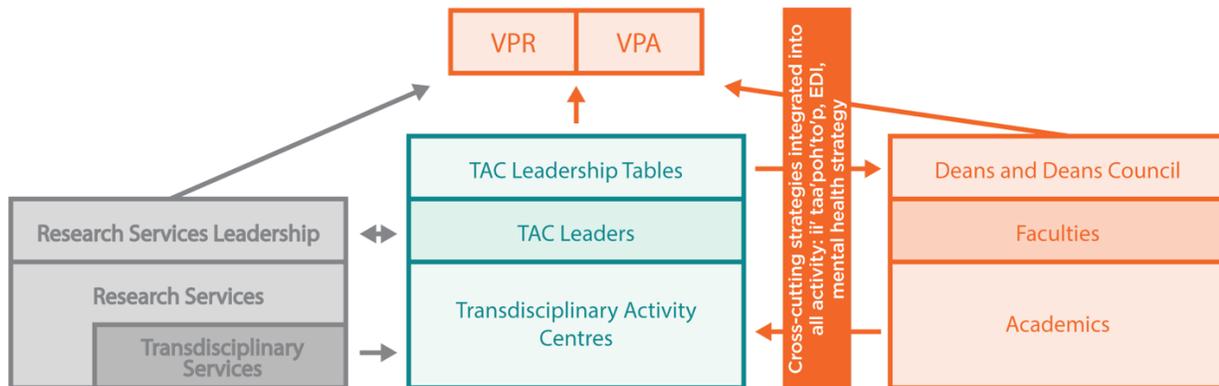
To facilitate transdisciplinary scholarship the Working Group proposes a new support structure or framework (?) organized around the grand challenges defined in the Areas of Focus (see below) that can, among other things, **bring together scholars, marshal resources**, facilitate/**coordinate activity** and **provide funding**. These “Transdisciplinary Activity Centres” would also be responsible for identifying and removing barriers to organic transdisciplinary activity across the University.

#### Proposed structure

The Working Group proposes that transdisciplinary activity be organized around the grand challenges defined in the “Area of Focus”. There will be one Transdisciplinary Activity Centre (TAC) for each area of focus. Each TAC would have three leads (nominated through a vote by faculty members of the Centre – see below **HOW: PATH FORWARD**) that support existing transdisciplinary “nodes” – existing research institutes, strategic research themes – and new transdisciplinary activity. In addition to the provision of support services, leads would be responsible for facilitating interactions between institutes, across faculties and between partner organizations.

The Working Group further proposes that the successful transdisciplinary institutes housed at the Cumming School of Medicine that, in effect, make up a large portion of the “creating the future of health” area of focus continue under their existing governance structures.

This structure would exist to enable transdisciplinary research but would not replace disciplinary research; all faculty members would retain assignment to faculties and departments, regardless of whether they affiliate with an area of focus. As new knowledge and ways of thinking are created by this collaborative model, our hope would be that these elements would help to inform the evolution of our curriculum and new experiential learning opportunities for students.



Deans, ADRs, and Department Heads will be important in assisting our academics in both understanding and facilitating connections to TAC leads, existing transdisciplinary node (Institutes, Strategic Research Themes, etc.) leads, and relevant individuals in the VPR and VPA portfolios.

TAC leads and their support teams will be expected to help reduce obstacles in the way of scholars and define – and report on progress within – “grand challenges”. They will maintain rosters of engaged academics in their Areas, keeping in mind that individual researchers do not have to be members of formal Transdisciplinary Nodes to contribute to the work in an Area of Focus. Once identified as being an active member of an Area of Focus, there should be benefits of membership. Proposed benefits include:

- Mod the opportunity to undertake challenging and transformational research problems;
- engagement with colleagues across the university;
- additional access to institutional funding programs (Eyes High Post Doc program, VPR Catalyst Grants, PURE, seed funding, matching funding for external applications);
- institutional prioritization of the work as required by major external funding programs (e.g. CFI Innovation Fund, NFRF);
- additional access to:
  - research supports;
  - events and learning opportunities;
  - peer review support for grant applications;
  - on-campus space allocated for transdisciplinary initiatives;
  - central administration support from Advancement, Government Relations, etc.

### Resourcing

We propose that differential investment in transdisciplinary scholarship be funded through the same 80/20 split that was shown to be so successful during the implementation of our Eyes High vision. The general practice

would be to split new resources (e.g. internal research grants or fellowships) such that roughly 80% of the program will be directed towards opportunities tied to the Areas of focus or transdisciplinary scholarship, while the remaining 20% will be available to all, independent of direct tie to Transdisciplinary Scholars and the Areas of Focus.

## 2. Refinement of “Areas of Focus”

In the October 2020 presentation to the community, President McCauley described the areas of focus as “the starting point for defining ... **grand challenges** and **big questions** that will be the mission of our [Transdisciplinary Activity Centres]”.

With that objective in mind, and as a result of community feedback in this area, we have proposed that descriptions for Areas of Focus be updated to the following (including new preamble):

### AREAS OF FOCUS

Great universities are built through diverse scholarship.

Addressing tomorrow’s problems require a fusing of world views and will come from unanticipated places. The University of Calgary must preserve and strengthen our commitment to being a comprehensive research university; a university committed to diversity – where the work of all scholars is important and valued. It is only through supporting a diversity of thought and background that a university can unlock the transdisciplinary solutions that our complex world demands.

Through the passions of individual researchers, the commitment of disciplinary teams and the entrepreneurial spirit of transdisciplinary groups, four **areas of focus** have emerged at the University of Calgary. These are areas where the University has proven or emerging track record of excellence.

Creating the future of health

Building people-centred cities

Leading the energy transformation

Advancing digital frontiers

Encompassing and expanding upon themes first identified as transdisciplinary strengths in the 2012 and 2018 Strategic Research Plans, the Areas of Focus help University of Calgary scholars organize activity to maximize societal impact and rise the reputation of our entire institution.

### CREATING THE FUTURE OF HEALTH

The 21<sup>st</sup> century promises incredible opportunity for – and incredible risk to –the future of global health. Previously unimaginable solutions race against previously unimaginable threats to human and planetary health. Making the most of our opportunities – and avoiding the most serious of disasters - can only be addressed through greater understanding of life, the environment, and the complex interactions of these systems.

A national leader in medicine, ranked #1 in North America for sport science and a magnet for exceptional talent across the life sciences, the University of Calgary has demonstrated capacity to work across disciplines towards innovative solutions that advance human flourishing.

By bringing further focus to this area we aim to improve quality of life and create the best conditions for individuals, societies, and the world.

### **BUILDING PEOPLE-CENTRED CITIES**

By 2050 it is anticipated that 68% of the world's population will live in cities. This concentration of activity in urban centres, both large and small, has helped generate unprecedented economic growth. At the same time, it is disrupting the social and physical structures and bringing about new challenges that require new solutions. How do we make and preserve communities that are socially just, ecologically sustainable, and economically prosperous? How do we ensure that the benefits of urbanization are fully shared and inclusive for all citizens, both now and in the future?

Partnering to solve such challenges is deeply embedded into the DNA of the University of Calgary. From the unique-in-Canada Urban Alliance strategic partnership with the City of Calgary to groundbreaking research and knowledge mobilization in communities and society, scholars from all faculties are actively engaged in this challenge.

By bringing further focus to the many challenges of building people-centred cities, the University of Calgary is helping to define urban futures that are more equitable, healthy, sustainable, and vibrant.

### **LEADING THE ENERGY TRANSFORMATION**

Imagine a world without energy. Almost everything we do now would be an enormous challenge. Our homes, transportation systems, schools, hospitals, and places of work rely on energy to keep the lights on, control room temperature, run our computers and the internet. Indirectly, energy is used to build everything we use in our daily lives, from the books we read to the vehicles we drive. The use of energy also ensure we have the medical equipment we need to save lives.

Calgary is Canada's Energy Hub, and the University of Calgary is among the top universities globally in terms of energy research and scholarship.

By bringing further focus to this area we will lead in finding the political, social and technical solutions needed to make existing energy development more sustainable and grow the renewable energy industry.

### **ADVANCING DIGITAL FRONTIERS**

Over the past decades, and accelerated because of COVID-19, the world has been fundamentally reshaped by digital and advanced technologies – in ways that we are only now beginning to understand. Social interactions, education, health, transportation, and industries are perpetually redefined as the frontier of digital and advanced technology capabilities advances ever forward. Our economic future demands that we adopt these technological changes. Our health, security, and wellbeing requires us to find new ways to address the social upheaval that results.

UCalgary’s Eyes High vision of the last decade has positioned it to lead this transformation. From quantum mechanics to cyber to precision medicine to space to visualization and beyond, powerful transdisciplinary teams have been driving industrial and social revolutions enabled by digital and advanced technologies to our society.

By bringing further focus to this area we aim to create and apply transformative technologies that advance our understanding of the world, our societal well-being, creative expression, and our economy.

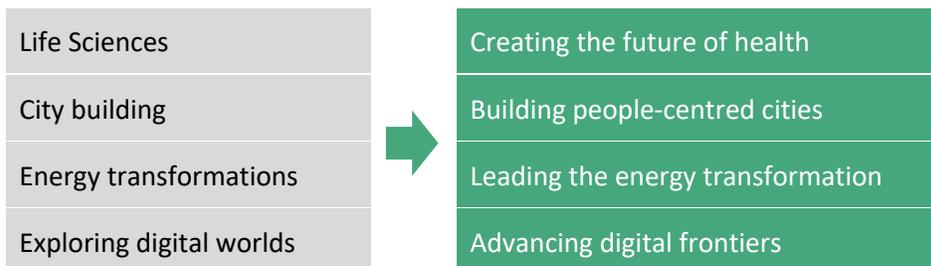
This update maintains the spirit of the original areas of focus while better defining their purpose and clarifying what they are – and what they are not:

- [Creation of a preamble](#)

A preamble was drafted to better define the purpose of the Areas of Focus and specifically address a recurring matter of concern from our university community: that by defining areas of focus, we were short-changing the broad-based disciplinary excellence and commitment to diversity of thought and experience upon which great research universities are built. The preamble “brackets” the areas of focus and makes clear their intent: they encompass and expand upon our research and education areas and serve as a way to organize activity to achieve societal impact and grow our university’s reputation.

- [Grand challenges, not disciplines](#)

We heard concerns that the areas as originally defined felt like a mixed list of disciplines and actions. When interpreted as a list of disciplines, we heard that people were less likely to see their work as within “focus”. All titles have been updated for consistency and to reflect the “grand challenge” (rather than disciplinary) organizing principle:



- [Common format](#)

Areas of Focus were brought to a common format, leading with a description of the societal challenge being addressed. Descriptions are rounded out by a short description of how the University of Calgary has proven or emerging excellence in this area and what we hope to accomplish by bringing further focus.

- [Extensibility](#)

The Working Group was charged with balancing the objective of bringing focus to our organizing activities with the imperative of encompassing the diverse scholarship that occurs on our campuses. To that end, descriptions are high-level and built to be understandable both to the on-campus community and to the broader external community. We believe more specificity would limit usefulness and that our work has been to reflect back activity already underway: in a scholar-driven process it is not our place to define what this focus means across Institutions, Departments and Faculties.

It is our hope campus groups will take these core definitions and develop their own more detailed descriptions of how they would engage into one or more areas, thus generating, from the ground up, portfolios of activity that are directly relevant and reflect the work of our institutions, departments, faculties and individual scholars.

## HOW: PATH FORWARD

Subject to all necessary governance approvals and feedback from Congress, the Working Group proposes launching elements of Transdisciplinary Scholarship and Areas of Focus by April 1, 2021. We have outlined a potential process for the launch of new “Transdisciplinary Activity Centres” below:

1. Ask scholars to self-select to join an Area of Focus/Transdisciplinary Activity Centre.
2. Ask scholars who have opted in to TAC to nominate a group of 3 leaders for each Transdisciplinary Activity Centre (possible term length: 3 years).
  - Voting is open to all those who have opted in to Transdisciplinary Activity Centre
  - Leaders would jointly report to the VPR and VPA, be given a leadership stipend for the duration of their 3-year term, and recognition of their contributions in their workload assignment.
3. Each Transdisciplinary Activity Centre builds a 3-year strategy. This includes:
  - Identifying internal capacity that exists
  - Identifying potential opportunities
  - Prioritizing grand challenges with external community (community/business leaders, industry, donors, alumni)
4. Each Transdisciplinary Activity Centre identifies additional capacity required.
  - Transdisciplinary Activity Centre leads submit request/proposal to Deans Council and VPA/VPR for targeted hires
5. Each Transdisciplinary Activity Centre identifies potential partnership opportunities that would help move forward on the grand challenge.
6. Launch mini targeted campaign to attract government, industry, and philanthropic support in concert with President’s Office, Advancement, VPA, VPR.
7. Allocate resources to each Transdisciplinary Activity Centre (see above **PROPOSED STRUCTURE**).
8. Ongoing leadership, maintenance, support and stewardship.
  - Standing Transdisciplinary Leadership meetings with the leads and the VPR and VPA (to also enable lessons learned across the different areas of focus)
  - Regular reporting
  - Recognized in merit/tenure/promotion (scholars will make their own case as usual, but there is an ability for contributions to be validated by Transdisciplinary Activity Centre leadership)
  - Ongoing marketing/communications
9. Regular evaluation process (in advance of the 3-year term of the leaders concluding – to set the stage for the next leadership team).
10. Bi-directional flow back into academic programming.

## WHY: OPPORTUNITY AND IMPERATIVES

Greater fostering of transdisciplinary scholarship will enable the University to position ourselves as a leader in this growing landscape and – most importantly – allow us to better tackle the ‘grand challenges’ facing our communities – locally, nationally, and across the global.

From a researcher’s point of view, it will **facilitate broader engagement** with colleagues from across all of our campuses. Through these diverse teams, our researchers will be able to tackle research problems which individually would be beyond their ability to undertake and/or to bring ideas and initiatives much further along the innovation pipeline that could be achieved by individuals or small groups. Engagement into transdisciplinary scholarship by researchers will be supported through resources, programs and support services dedicated to advancing such research, creativity, and scholarship.

In creating a structure for “Transdisciplinary Activity Centres”, we were highly conscious of the need to identify the value propositions that would result in researchers wanting to engage in transdisciplinary scholarship and position themselves within the Areas of Focus. The resulting structure looked to **lower or remove barriers to entry** into these Areas, ensure proper oversight and **support to achieve success** with these transformative changes, and not break elements that are currently working – specifically the Institute-based system with decanal oversight in Health Research.

We believe moving transdisciplinary scholarship to the forefront will **enhance the image of our institution**. It builds on the pioneering work of our faculty and the multidisciplinary focuses set by Eyes High to take the University to new heights.

But most importantly, transdisciplinary research will **help our community**. Society faces great challenges, and those challenges demand solutions that bring in thinking from across disciplines. Complex problems demand complex solutions. Technological progress unmoored from philosophical and social considerations leads to ruin, not progress. By better working together, we can unlock previously unavailable solutions and advance the cause of knowledge.

## DISCUSSION QUESTIONS

1. When considering transdisciplinary scholarship and areas of focus, how do we best operationalize our commitment to *ii’ taa’poh’to’p* and equity, diversity and inclusion?
2. How, if at all, would you view the work of yourself, your group, your department, your faculty or your institute/centre as it relates to the grand challenges defined in the four Areas of focus?
3. What does a “Transdisciplinary Activity Centre” need to provide for you, your group, your department, your faculty or your institute/centre to succeed at transdisciplinary research?
  - a. What resources do we already have?
  - b. What resources/supports are missing from our current approach?
  - c. What about our current approach stands in the way of transdisciplinary scholarship?

## WORKING GROUP MEMBERS AND PROCESS

The *Working Group on Transdisciplinary Scholarship and Areas of Focus* was comprised of the following members of the University of Calgary Senior Leadership Team:

- **Rob Thompson**, Associate Vice-President (Research) (Chair)
- **John Brown**, Dean (School of Architecture, Planning and Landscape)
- **Kate Hamilton**, Executive Director and Chief of Staff (Office of the President)
- **Corey Hogan**, Senior Associate Vice-President (Communications)
- **Jacqueline Lacasse**, Associate Vice-President (Labour Relations)
- **Jon Meddings**, Dean (Cumming School of Medicine)
- **Penny Pexman**, Associate Vice-President (Research)
- **Bill Rosehart**, Dean (Schulich School of Engineering)
- **Florentine Strzelczyk**, Deputy Provost

Members were charged with developing implementation plans for the ideas presented to the University of Calgary community in October 2020 town hall. Specifically, members were asked to seek out and take feedback received from the university community and other stakeholders, develop concepts and provide proposals that consider the opinions of our scholars, the strategic objectives of our university and the best thinking of group members.

Feedback was received from the University of Calgary community through email, anonymous online feedback and meetings between university leadership and various official and unofficial groups. Strategic direction came through the University's approved strategic plan (Eyes High) and research plan, and from the University of Calgary Executive Leadership Team.