GENDERED DESIGN IN STEAM_GDS_FINAL TECHNICAL REPORT_108889_CARLETON UNIVERSITY

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GENDERED DESIGN IN STEAM

Gendered Design in STEAM (Science, Technology, Engineering, Arts, and Mathematics) in Lower- and Middle-Income Countries (LMIC)

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1. Abstract

The GDS research Program subsumed the approaches of design, arts and social sciences to enhance gender aware and inclusive research amongst twenty academic teams of Science, Technology, Engineering, Arts and Mathematics (STEAM) located in lower- and middle-income countries (LMICs). The empirical exploration supported the emergence of a transdisciplinary area of research and practice which we defined as 'gendered design'. The key factors that proved crucial to overcome the disciplinary boundaries and catalyse processes of empowerment were: theoretical and methodological openness, design-driven strategies and experimentations, as well as a holistic and affective approach to collaborations and relationships.

The GDS Program extended the application, scope, and international reach of 'gendered innovation' by working alongside 20 teams of scholars and their communities located in LMICs, building mutual capacity and learning with them. This work helped create and strengthen a community of practice of gendered design scholars from the south. Gendered design goes beyond simply addressing male-female labor gaps. The approach brings diverse and critical perspectives to the research process in STEM, by reshaping how we identify challenges linked to gender, the process to address them, the solutions to these challenges, as well as the reach of their benefits.

The GDS Program asked all 20 projects to include scholars from the humanities, social sciences, and design to actively help foster a more human-centred approach amongst the STEM fields. Including the Arts is what changed the designation of the field from STEM to STEAM. The Program was supported by an interdisciplinary collection of 'Sector Experts' from Carleton, in collaboration with 'Regional Experts' from Africa, Asia and Latin America.

The GDS Program was transdisciplinary in its structure. It advocated human-centred research approaches. Processes were design-driven, iterative, adaptive, and flexible, to achieve the goals of the program; sharing different expertise and contributing to the topic of gendered design; networking; and collective knowledge building. The Program operated as a HUB – a platform for the exploration and advancement of gendered design knowledge and practice. Different tools, activities, and procedures were designed and produced to facilitate participatory practices and knowledge mobilization through the HUB.

The Program developed definitions of gendered design built upon local contexts and knowledge. It mobilized a strong collaboration between academics and communities in the northern and southern hemispheres. The research results were disseminated, increasing the visibility of the local communities studied, thus enhancing southern academic voices, approaches, and cultures. It also created transdisciplinary opportunities throughout the Carleton campus. The outcomes of the Program are also seen through the actions, achievements, findings, and outputs from the 20 individual research project teams.

Keywords: design; gender; gendered design; interdisciplinary; knowledge mobilization; participatory design; STEAM; STEM; transdisciplinary.

2. Research problems and early institutional decisions

IDRC initially approached Carleton University with the overall idea of a large-scale research project to explore Gendered Innovations in STEM-related fields in Lower Middle-Income Countries (LMICs). This idea drew on work by Dr. Londha Schiebinger about Gendered Innovations at Stanford University that looks both at the historical significance of sex and gender, as well as the importance of design from a gendered perspective, to unravel missed opportunities for innovation in the fields of Science, Health and Medicine, Engineering, and the Environment. It also drew inspiration from the work of GenderInsite and their policy workshop in South Africa on "Gender and Innovation: Implications for Sustainable development"[1] of 2018. Carleton's International Research Office worked in partnership with IDRC to encourage the formation of a group who would foster the interests of both institutions by organising first-hand the distribution of small grants while coordinating a common research adventure.

In earlier experiences of work with IDRC, Carleton University had already demonstrated the importance of design research in sustainable development and how it can be used as form of epistemology that, beyond the design of things and processes, offers a way of conducting research through methods such as prototyping. Dino Karaberg[2] defines Design Epistemology as follows:

> *"The design epistemology fosters an approach to academic research that is alternative to the traditional approaches. A characteristic result of design research is a prototype—namely a model, implemented in practice, and placed into practice, with the aim of helping real-life systems evolve towards a more whole condition and to be learned from, and improved continuously."* | Dino Karaberg, Institute for Informatics at the University of Oslo

The prototyping method recognizes that problems of sustainability and development are complex problems that exist at the systems' level. **Such problems also evolve and change as technologies and social situations evolve simultaneously**. The prototyping method both considers the many factors at play and situates the prototype in a human experience that can be reflected upon from various disciplinary perspectives, not in isolation but instead as a whole. Principal Investigator, Bjarki Hallgrimsson is a researcher of prototyping methods at Carleton's School of Industrial Design, and he has worked extensively in East Africa with local academics and Non-Governmental Organizations (NGOs) in sustainable development projects utilizing this approach.

The vision grew to create a 'Call for Proposals' from LMIC researchers who would either embark on new projects that would adopt a design research approach employing prototyping as a core method or provide case studies of gendered design research.

In addition to centering on design prototyping, a discipline that could bridge STEM and Social Sciences and Humanities (SSH), IDRC encouraged the inclusion of a PI firmly grounded in SSH. Principal Investigator Dominique Marshall's work as part of the Carleton University Disability Research Group (CUDRG) was already familiar with how fruitful partnerships between historians and experts in STEM could be; her coordination of the Canadian Network on Humanitarian History (CMHH) had also made for partnerships with LMIC scholars and NGOs. Expertise in Public History would also support the making of case studies of gendered innovations, as well

[1] Academy of Science of South Africa (ASSAf), (2017). Gender and Innovation: Implications for Sustainable Development. DOI http://dx.doi.org/10.17159/assaf.2018/0020 ISBN 978-0-9947117-5-5

[2] Karaberg, D. (2012), 3, 621-634. Design Epistemology. DOI https://doi.org/10.3390/info3040621

as the archiving, organisation, and open sharing of findings. The discipline of Public History could also support the making of case studies of gendered innovations as well as the archiving, organisation, and open sharing of findings. Historian of technology Beth Robertson, the main research associate of the CUDRG, and post-doctoral fellow, added experience with gender, museum research, and she was the initial Program Coordinator. Amina Mire, Carleton based sociologist of science, technology, gender, globalization, and antiracist methods, complemented the SSH part of the core team as 'Gender Expert'.

Developing the Grant Agreement in such directions made for a change in the terminology of our Program from 'Gendered Innovations' and 'STEM' to specifically focus on design, as in 'gendered design'. We also broadened the term STEM to acknowledge the importance of the arts (SSH broadly understood), by adopting the more adequate label of STEAM[3].

At the encouragement of IDRC, the Program steered away from the main focus on health and agriculture in the literature in gendered innovation and turned its attention to the potential of the approach of gendered innovations in fields of STEM related to: transport/mobility, renewable energy, housing, manufacturing, and infrastructure, with the themes of accessibility and artificial intelligence cutting across these domains.

The Program envisioned an organisation around a series of STEM sectors that could be supported through Carleton researchers in various departments across campus. Carleton University was thus chosen as an epicentre for the GDS Program based on the physical proximity to IDRC and its expansive academic research support network. Three-line Faculty Deans of the University attracted by the opportunities of the Program to train graduate students added to the financial contribution of IDRC: Arts and Social Sciences, Design and Engineering, Science.

The expertise of Carleton was thus a good fit of researching Gendered Innovations in STEM in a global context, when existing work had focused mainly on the global North and developed nations. During the formation of the project, one new Carleton faculty member, Dr. Chiara Del Gaudio, joined as full Investigator, whose expertise in collaborative design and decolonising design, as well as years of experience of design academic practice in Latin America would strengthen the team in many directions. To anchor the project in LMICs, and ensure decolonial ways of working, we sought to configure a structure including, as equal partners in the Carleton core team, and as soon as possible, scholars committed to emancipatory design located in institutions of higher education in the three continents involved: Asia, Latin America, and Africa. Beside their respective and localised practices of design, Regional Experts Yoko Akama, Emmanuel Mutungi and Raquel Noronha brought additional disciplinary traditions, in Communications and Anthropology, to the early configuration of the Program and to its regular rhythm, reshaping and upkeep.

An early outcome of work with decolonising approaches was another change in terminology. We began referring to the GDS Project as the GDS Program as opposed to 'the Project'. This is because the 20 separate projects widely dispersed across the globe deserved the recognition that they were independent research projects, albeit funded under one GDS umbrella at Carleton University and committed to collaborations. This report uses the term Program accordingly to talk about the GDS activities as a whole including logistical and research facilitation centred at Carleton University; and it refers to the 20 LMIC teams simply as 'projects', participating, collaborating, or otherwise.

[3] Del Gaudio, C., Hallgrimsson, B., and Marshall, D. (2022) Supporting research on gender and design amongst STEAM researchers in the souths: A case study of subsumption in design methods, in Lockton, D., Lenzi, S., Hekkert, P., Oak, A., Sádaba, J., Lloyd, P. (eds.), *DRS2022: Bilbao*, 25 June - 3 July, Bilbao, Spain. DOI: https://doi.org/10.21606/drs.2022.644

These disciplinary, regional, and thematic distinctions meant that at any time, each one of the 20 projects dealt with two distinctive sets of research problems. One which addressed problems emerging from their LMIC communities and conducted with research methods and approaches particular to their own areas of expertise. The other which embraced, explored, and augmented the emerging field of Gendered Design in STEAM. In so doing, this Program aimed not only to draw on existing research on 'gendered innovation', but also to broaden the scope of this field to issues that especially affect women in LMICs, and to address potential biases inherent to the design process that new activities might make visible.

It is beyond the scope of this report to discuss in a comprehensive manner the specific sets of research problems identified and pursued by the projects. The five Program Bulletins documented these independent journeys as they proceeded, with a sixth Bulletin summarizing the achievements of each project and the Program. At the end, project teams each took the time to identify their own outputs and outcomes in their respective final technical reports. Many continued to share information beyond the submission date of their reports which was several months before the end of the GDS Program. Thereafter, the Program devoted a tremendous amount of its attention to produce a GDS website which presents the entirety of this original material in an engaging, respectful, validating, and coherent fashion. The design of this new research portal is meant to leverage and honour the two distinctive sets of research problems described above.

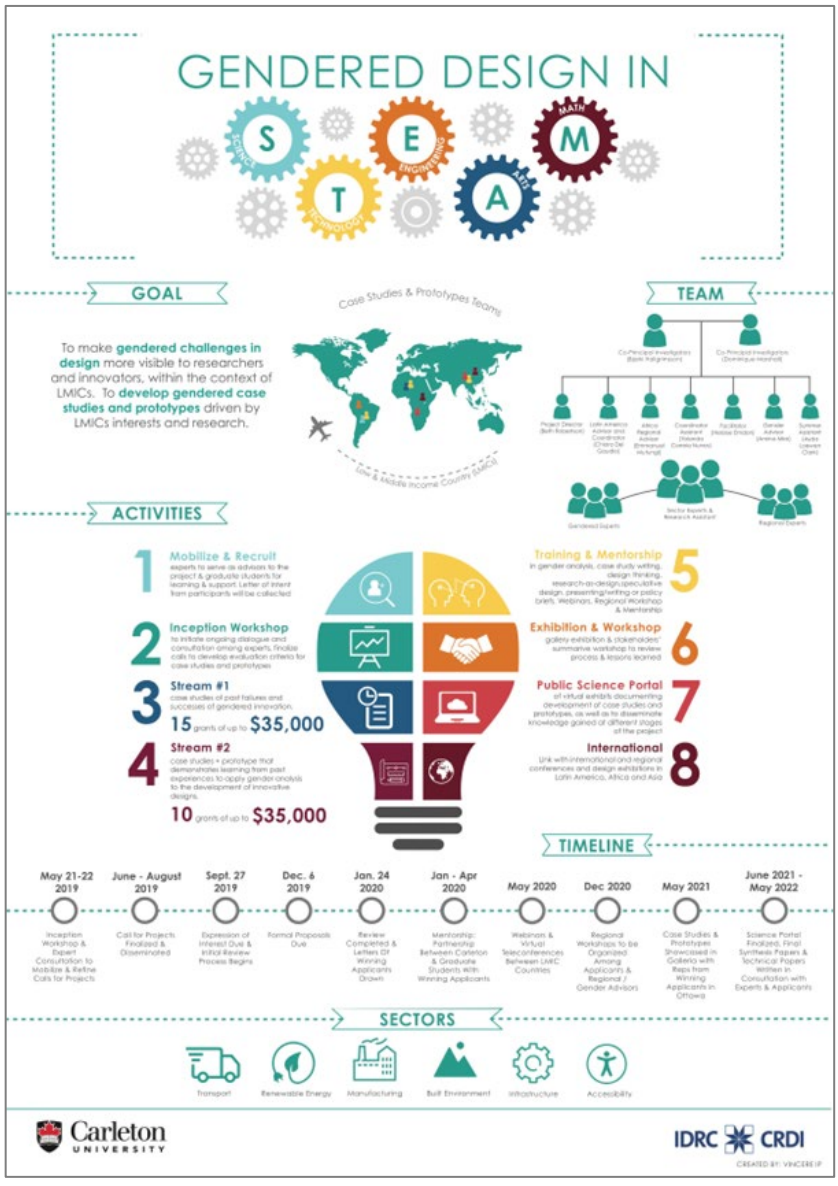
In parallel to supporting the conduct of these two sets of research problems at the project level, the Carleton core team isolated a specific and relatively autonomous role for itself in the pursuit of the Program's research agenda. Firstly, it would follow, guide, and document the stories of the 20 projects and curate the data for further analysis. Secondly, acknowledging that gendered design in STEAM is an emerging field, both in the global Norths and Souths, the core team of Investigators and Regional Experts designed and undertook its own, broader, research problem: **to deepen our understanding of the term 'gendered design', to investigate manners to conduct this type of research, and to discover how much capacity could be mutually built in LMIC's and developed nations**. As indicated above, we set to do this by promoting and supporting projects that would either produce case studies of design epistemological approaches linked to participatory methods, or projects that would employ an iterative and evolutionary prototyping approach. At the Program level, methods of participatory design accompanied every step of the management of this complex adventure, and participatory historical methods became increasingly important to gather insights, curate data and make them available for future research. Moreover, inspired by the early results of the Program, Dr Del Gaudio undertook research of her own, on "Tackling oppression by embracing transgression", adding a 21st project to the existing case study group.

The identification and design of relevant administrative means represented a considerable part of the Program's investments. This aspect of the work was largely conducted by our full-time Program Coordinator Kerry Grace, who replaced post-doctoral fellow Beth Robertson approximately 12 months after the start and shortly after the submission of proposals from the projects. The new Program Coordinator brought managerial and research expertise to the administration of relations between complex public institutions and communities. The managerial approaches and processes had to be, on one hand, clear and systematic, and on the other hand fluid and ready to evolve. This responsive approach to running the organisation allowed the Program to transform its structures and its schedules as members of the core team framed and re-framed their experiences together. Regular meetings and close communications ensured that administrative and research activities were in constant dialogue, both within the core team and between the team and the projects.

To summarise, the Program required designing and managing, across three continents, 20 distinct projects which

shared high level goals ('project objectives'), and which respectively comprised different disciplinary backgrounds, sectors of application, and socio-cultural contexts. Work of this nature, which stands at the "cutting edge of complexity"[4], is best described as transdisciplinary research. The examination of the potential of transdisciplinary research in design, an emerging field, became a central research problem for the Program.

Figure 1: Early infographic of the GDS Program



The infographic produced at the onset of the GDS Program acknowledged the complexity of the ongoing work, while attempting to clarify its organizational structure, its scope as well as its timeline. This design artefact used in the management of a transdisciplinary set of activities helped people who were designing the Program and those about to join to understand their roles, positions, opportunities for collaboration, as well as potentials for reconfiguring the shape of the Program itself.

[4] Dorst, K. (2019) Design beyond Design. She Ji: The Journal of Design, Economics, and Innovation. 5(2), 118-127. DOI: https://doi.org/10.1016/j.sheji.2019.05.001

A call for papers by the 2022 bi-annual Design Research Society Conference on Transdisciplinary Research, provided the Carleton core team with an opportunity to embark on a comprehensive analysis of the Program's ways of addressing complexity, based on its two first years of operation. The DRS call included two research questions about which the Program had much original materials to offer:

1) How can we practice interdisciplinary research and produce transdisciplinary knowledge across disciplines, fields, societal issues, and cultures?

2) What is Design role in this context? How can it contribute?

Prepared in the Fall of 2021, presented and published in the early Summer of 2022, the GDS extensive paper represents in many ways an early iteration of this final technical report (FTR). We identified key factors to overcome disciplinary boundaries, and to produce a kind of transdisciplinary knowledge that catalyses processes of (social and academic) empowerment. We did so by analysing what had become the foundations of the Program - a theoretical and methodological openness, a design-driven strategy, experimentation, as well as a holistic and affective approach to collaborations and relationships.

We argued that by subsuming (in other words seeking to include) the approaches of design, arts and social sciences to enhance gender aware and inclusive research amongst 20 academic teams of Science, Technology, Engineering, and Mathematics located in the LMIC countries, the task of the GDS research Program stood at the intersection of many recognized types of practices, formal and informal, known and unknown, academic and real life, all with a need for final and tangible outcomes. We showed how, at the Program and projects levels, the gendered design approach went beyond simply addressing male-female labor gaps, by bringing diverse and critical perspectives to the design process. These perspectives help reshape not only how we identify design challenges, or the process to address them, but also the kind of solutions brought to these challenges, as well as the reach of their benefits.

3. Objectives

The general (overall) objective of the GDS Program was stated in the Agreement with IDRC as follows:

> The overall objective of the Recipient in relation to the Project is to build capacity for research, design, and dissemination of gendered innovations in Science, Technology, Engineering, the Arts and Math (STEAM), addressing challenges predominantly faced by women in low and middle-income countries (LMICs).

The Agreement added 'Specific Objectives':

1. Expand and enhance the community of experts and innovators in gendered innovation, particularly in LMICs;
2. Develop gendered case studies and design projects that are driven by LMIC interests and researchers; and
3. Make gendered challenges in the design of technologies more visible to researchers, designers and innovators, particularly in LMICs.

As a minor point, we started referring to these objectives as 'goals', term more conducive to design methods that strive for experimentation. The more explorative notion of 'goals' seems to be more open to reframing and discovery than what might normally be expected by terms such as 'specific objectives'. This is largely semantic but helps explain the reason for the subtle shift in terminology.

As the Program developed, we slightly reframed these goals to better align the activities and direction the Program was adopting. These are as follows:

1. connect, expand and enhance the community of experts and innovators in gendered design, particularly in LMICs
2. support LMIC researchers in conducting research and case studies of current and past gendered innovations, and in designing gendered projects for the future, driven by local interests
3. make the challenges brought by gender in the design of technologies and processes, more visible to researchers, designers, and innovators, particularly in LMICs.

To best achieve its general objective of capacity building, the GDS Program designed a blind call for projects, which was widely distributed through various networks of IDRC, Carleton University, as well as those of the Regional Experts. This resulted in 95 Expressions of Interest, and in a rigorous evaluation process to select 20 suitable projects dispersed in Africa, Latin American countries as well as Asia. By applying to the Program, these academics signaled their full willingness to embrace a 'gendered design' approach. At Carleton University, STEM and SSH researchers who joined were interested in building interdisciplinary capacity by engaging in participatory workshops, conversations, and support.

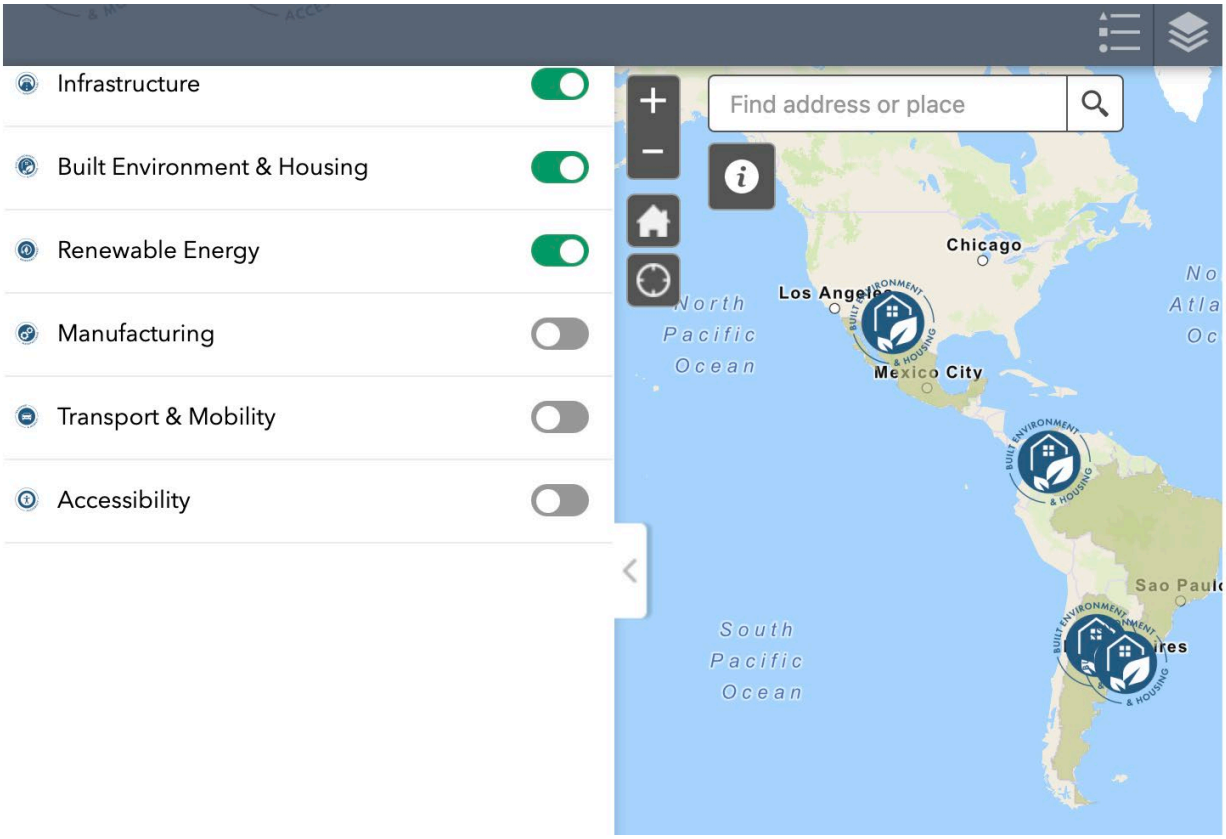
To achieve the goals (previously 'specific objectives') we set to find the best possible ways to grow and enhance the expertise of the selected projects. In the spirit of gendered design, this would be by maximizing of opportunities to experiment, in parallel and together, to share stories of how the GDS approach would affect the practices, networks, and possibilities of their own teams.

The onset of the Covid-19 pandemic forced Program and projects to flip online and refocus on alternative modes of communication. We devoted a whole issue of the Bulletin to the imaginative ways by which all were

able to maintain the goals in sight, be it at a slower pace. The shifts allowed to build all through the Program an extraordinary capacity in online communication, at a level that had never been imagined at the outset.

The three-year journeys of projects and Program towards the objective and goals can be followed in detail on the GDS website. Documenting the tentative and exploratory steps by which each project translated these goals represented a key part of the Program, on the road to building an engaging depository of case studies. An interactive map, searchable by sector and continent, opens the door of the material which, in time, will serve as a research portal.

Figure 2: Screenshot of the interactive map on the GDS website



To summarize, in response to the three specific goals, this Program set to:

- Develop definitions of gendered design built upon local context and knowledge.
- Mobilize a strong collaboration between academics and communities in the Northern and Southern hemispheres.
- Support and enhance Southern and Indigenous academic voices, approaches, and cultures.
- Increase the visibility of local communities studied by these scholars.
- Promote the dissemination of Southern research results.
- Create opportunities for researchers across the Carleton campus to work together with a common goal and do interdisciplinary work.

4. Methodology

Crucial for the definition of the methodology has been the decisions that in order to best achieve the overall objective to "build capacity for research, design, and dissemination of gendered innovations in STEAM, addressing challenges predominantly faced by women in LMICs", a large number of researchers should be engaged, and that there was the need for a clear but flexible structure to coordinate multiple, diverse and extensive efforts towards the achievement of transdisciplinary outcomes.

This is why we decided that, with the resources available, the Program could reach, select and support 20 project teams who would design and pilot localised, discrete, relatively autonomous, original, and strong methods to 'foster women's leadership', define gender analysis, and advance gender analysis in their respective academic fields.

It was clear since the beginning that the details of these methodological choices would not be defined and managed by the Program. Accordingly, the methodological choices of each one of the 20 projects are not fully presented in this report, but important aspects of their methods are highlighted in later sections.

Based on this, the methodological challenge of the Program was to embrace a transformative approach: this involved providing simultaneously a strong structure and intellectual drive, as well as a responsive attitude and a wide space for experimentations and innovation. Given the nature of gender bias in academic research, transformations concerned not only research outcomes but also research practices. To do this, all methodological choices were informed by four operational principles:

1. The use and promotion of a **transdisciplinary designed-base** – iterative, abductive, strategic, and open processes across the Program and within the core team.
2. The use and promotion of 'Research-through-design' methods from a **participatory design** perspective: where knowledge is built from practical experimentation with **adaptive** design processes within scholarly teams and with their own chosen communities.
3. The building of **collaborative activities and workshops** that encourage networking and knowledge building, across the Program and within the core team.
4. Iterative design of **knowledge mobilization** tools by the core team, e.g., the GDS Bulletin publication, usable locally, to validate and empower women leaders and advance gender analysis in their field.

The details provided in the next chapter on Program Activities and in the supporting Appendix A, illustrate how these operational principles presided over the development and the delivery of the GDS Program.

Transdisciplinary approach

In the context of this study, STEAM refers to the integration of concepts, methods, and perspectives from the Creative Arts (visual arts, performing arts and literary arts and design) and the Liberal Arts (social sciences and humanities - SSH) in STEM research. We encouraged and supported STEM researchers to be more socially focused and the name of the Program, STEAM, was a reminder of this. We were thus deeply set to work in a transdisciplinary fashion[5].

[5] Held, M. (2016) Transdisciplinary Research Through Design - Shifting Paradigms as an Opportunity. In Joost, G., Bredies, K., Christensen, M., Conradi, F., & Unteidig, A. (Eds.), Design as research: Positions, arguments, perspectives, (pp. 186 -192). Walter de Gruyter GmbH.

As we have seen above, a transformative approach driven by design methodologies led to the making of a core team with a broad representation of faculties from within and outside of our own university. The Sector Experts from Carleton University were assigned to support the awarded project teams based broadly on their respective experiences across the thematic sectors. In addition, the Sector Experts received the means to hire a graduate Research Assistant each to learn from and support the Program. Contributions from - and training of - a new generation of transdisciplinary researchers was central to the transformative approach of the Program. In time, several Carleton colleagues came to question the danger of using the term Sector 'Expert' when they met with researchers of LMICs who were equally 'experts'. We did not officially change the description of their position in the Program for practical reasons, but 'providing support' and 'sharing information' became preferred ways of describing the kind of relations we entertained with project team members.

Coming from several disciplinary and regional traditions, the Regional and Sector experts identified networks of researchers best placed for helping to select the local research teams and support them thereafter.

The same transformative approach presided over the planning of the Program. Using 'strategies' rather than 'plans' signalled a flexible process capable of embracing complexity, in the face of changing and unstable situations (Morin, 2011). Accordingly, strategies for completion easily evolved with the participants' needs and feedback, external challenges (i.e., Covid-19), and project team members' insights from their respective fields. The core team designed ad-hoc activities, processes, and tools, through which each participant's contribution could be heard regularly. All this was embodied and reflected in the constitution of the HUB (see activities relating to LabOne, LabTwo Part One and Two, and the Bulletin, for example).

The open-ended nature of the method enabled the Program to support and follow many transformations in knowledge production, from the initial relegation of the concept of 'gendered innovation' in favour of the adoption concept of 'gendered design' onwards.

The task given to us by IDRC at the beginning was to probe the potential of the notion of 'gendered innovation' for multiple aspects of STEM research in LMICs. According to those who coined the expression, Gendered Innovations can be understood as new or improved products and processes designed using sex and gender analysis, generating substantial benefits for society, and advancing gender equality[6]. Borrowing from the field of Participatory Design (PD) and Critical Studies in Design, we implemented a conceptual change from 'Innovation' to 'Design'. Since the word innovation is often understood as something new, as in a business innovation, it was not well-suited to represent a Program aimed at making explicit and promoting Indigenous, traditional, and other types of existing knowledge. Design can be as much about the acknowledgement, maintenance or improvement of existing practices and products as it can be about invention[7]. The expression 'gendered design' seemed to fit these goals better: it refers to the practice of reflecting upon, uncovering, or creating gendered considerations, and incorporating them systematically in all design exercises.

[6] Schiebinger, L. (2008). Introduction: Getting More Women into Science and Engineering. In L. Schiebinger, Gendered Innovations in Science and Engineering, (pp. 1-21). Stanford University Press.

[7] Cruickshank, L. (n.d.) Innovation vs Design. Imagination Lancaster. http://imagination.lancaster.ac.uk/update/innovation-vs-design/.; Kolko, J. (2008). The Tenuous Relationship Between Design and Innovation. Routledge's Artifact, 1 (3), 198 - 203.; Samples, L. (May 25, 2020). Maintenance (no. 2.10). [Audio podcast episode] In Contra*. Critical Design Lab. https://www.mapping-access.com/podcast/2020/5/25/contra-episode-210- contramaintenance-with-leah-samples

Identification of women leaders, promotion, and selection of STEAM teams

We also established the criteria for the selection the project teams that would best foster gendered design. Women are too often underrepresented and/or overlooked in STEM and design fields, and their voices are often silenced, invisible and lacking agency over knowledge production[8]. This led us to prioritize STEM projects either led by women, or which were benefitting women's lived experiences, perspectives, and histories, directly or indirectly. The Expression of Interest (EOI) launched in 2019 (see 5.1.3), asked applicants "to carefully consider and articulate how their proposed projects fell within the category of 'gendered design' in respect of their unique LMIC context". We conveyed both our own working definition of 'gendered design' and the openness of the Program to various interpretations of the notion of gender. We wanted possible applicants to explore, and come to terms with, what gender and design could mean in their different geographical, national, and economic contexts.

Research through design and participatory and adaptive methods

One of the two PIs, Bjarki Hallgrimsson, and GDS Investigator Chiara Del Gaudio, had expertise and experience with PAR and PD and were committed to making these ways of linking design and research as main features of the Program. The research Program provided a unique and new opportunity to allow these approaches to be adopted between and amongst scientist, engineers, designers, and local stakeholders in the context of gendered design with a focus on the LMICs.

As we said before, the global Covid-19 pandemic started to have impact on the methods and approaches of the project teams in March 2020. It also presented great challenges to the initial aim of the core team to deliver centrally led activities and collaborative ways of working. In the case of the projects, all proposals had been written and planned before the implications and restrictions of Covid-19 were imaginable. The structure of the GDS Program, which was flexible and adaptive from the start, allowed for these unforeseen changes. Our plans for in-person regional meetings had to rapidly adapt, and all our collaborative efforts had to move to being online and virtually hosted. In parallel to these changes, and in a process of mutual learning, project teams made individual methodological adaptations, which are detailed in each the project's final report (forthcoming on the GDS website).

Our Program identified 'research-through-design' (RtD) as the research approach that can support the achievement of the above-listed aims. Through RtD, knowledge is built by integrating theoretical and practical exploration, academia, and real-world, researchers and users. Furthermore, it identifies participatory design as the specific way to practice RtD in this specific field of application. Participatory design allows one to bring into the design process different perspectives to address gender issues by including the affected stakeholders (often women) directly in the project and promoting interaction and exchange with the other stakeholders in the definition of a solution through a participatory process. This approach has been fostered when supporting the elected research projects so that design challenges are effectively addressed through a gendered lens.

Collaborative activities and workshops

Embracing one of the theoretical foundations of the Program, participatory design workshops were held as early as possible to allow participants to bring their respective disciplinary knowledge to the design of activities that would best serve the three years of the Program. The first Lab event held over October to December 2020

[8] Fricker, M. (2007). Epistemic Injustice: Power and the Ethics of Knowing. Oxford Scholarship Online. DOI: DOI: 10.1093/acprof:oso/9780198237907.001.0001

(see 5.2.5) represented a critical moment in reframing our collective understanding of the Program: our questions quickly shifted away from statements of "what the Program should be" towards questions of "what the Program could be", accompanied by a more responsive approach: "let's work together, listen to each member of the Program, see how things unfold, and adapt".

At the start, we envisioned a set of regional workshops in LMICs. Material and epistemological difficulties associated with this formula emerged. Firstly, the funding would limit the overall number of participants. Secondly, regional workshops, conceived to acknowledge and enrich localised traditions, were not sufficient to allow for meaningful cross-pollination between continents between projects in the same sector. Furthermore, considering that gendered design, as we conceived it, would only be possible through the convergence of diverse expertise - disciplinary, regional and others, we set to imagine a Program able to support the emergence of a "collective form of intelligence"[9]. This would recognize the fact that each project team, as well as each expert, had some of the required knowledge.

Through the design-driven strategies and processes described above[10], we re-imagined the Program to be a physical and virtual HUB for gendered design research and practice: a platform for transdisciplinary exploration. The HUB provided a configuration to help generate new opportunities, connections, knowledge, and future activities on gendered design.

Early in the formative 'inception' event of May 2019 (see 5.1.1), many partners experienced the potential of design activities for the first time and saw how such ways of working could ensure an open-ended approach. We noted a general shift in mindset: the participants moved away from more disciplinary, positivist and pragmatic approaches towards a stance that is open to interaction and change, and that defines its methods through intervention in the field[11].

This way, the framework of the GDS Program was especially well suited to support and enhance Southern and Indigenous academic voices, approaches, and cultures, build local knowledge, increase the visibility of local communities studied by these scholars, and promote the dissemination of LMIC research results.

Knowledge mobilization

The introduction and continued release of the GDS Bulletin publication (see 5.2.6, 5.2.7, 5.3.2, 5.3.5, 5.3.8 and 5.4.6) throughout the Program was an effective means to share information on the activities of the 20 project teams as well as share insights and knowledge from the core team. This publication also provided a means for the project teams to validate their work locally and raise awareness on their efforts. Other tools developed such as the Miro boards (example in 5.2.5 and 5.3.7), and the project videos and posters (available on the GDS website) contributed to the sharing of the knowledge and discoveries coming from the GDS Program.

The support-structure of the core team was a constant presence throughout the GDS Program. Not only did the approach allow for information to flow from the project teams, but it also gave back, signalling to all that there existed a varied support network available to share and discuss ideas. The knowledge mobilization framework also provided a space for gendered design to be discovered and learnt in a non-judgemental manner.

[9] Lévy, P. (2014). A inteligência coletiva: por uma antropologia do ciberespaço. Edições Loyola.
[10] Freire, K. M., Del Gaudio, C., & Franzato, C. (2017). Design-driven strategies for creative social innovation ecosystems. International Journal of Knowledge Engineering & Management, 6 (16), 236-249; Verganti, R. (2009). Design-Driven Innovation. Harvard Business.
[11] Deleuze, G. & Guattari, F. (2007). Mil Platôs: capitalismo e esquizofrenia. São Paulo: Editora 34.

5. Program activities

Carleton University, in close collaboration with multidisciplinary experts in LMICs and Canada, coordinated the four primary activities:

1	Manage a call for research projects examining case studies on current and past gendered innovations, as well as a call for projects exploring gendered design processes and prototyping gendered design outcomes	Year 1 and Year 2
2	Deliver relevant training and mentoring to LMIC researchers	Year 2 and Year 3
3	Facilitate and support regional activities in and from LMICs	
4	Facilitate and support the dissemination of the research project results and outputs	Year 4

To facilitate the primary activities during the three-and-a-half-year period, we established 26 key milestones, which are presented in Figure 3. This chapter provides a summary on the key milestone activities and how they were delivered. Annex A provides the original schedule as given in the proposal. During the Program, the schedule had to adapt – Annex B shows the different proposed schedule of activities that were submitted in our interim-technical reports throughout the GDS Program and demonstrates how we adapted to the changing landscape and needed to continually review our milestones and activities.

Figure 3: Key Program milestones, April 2019 to October 2022

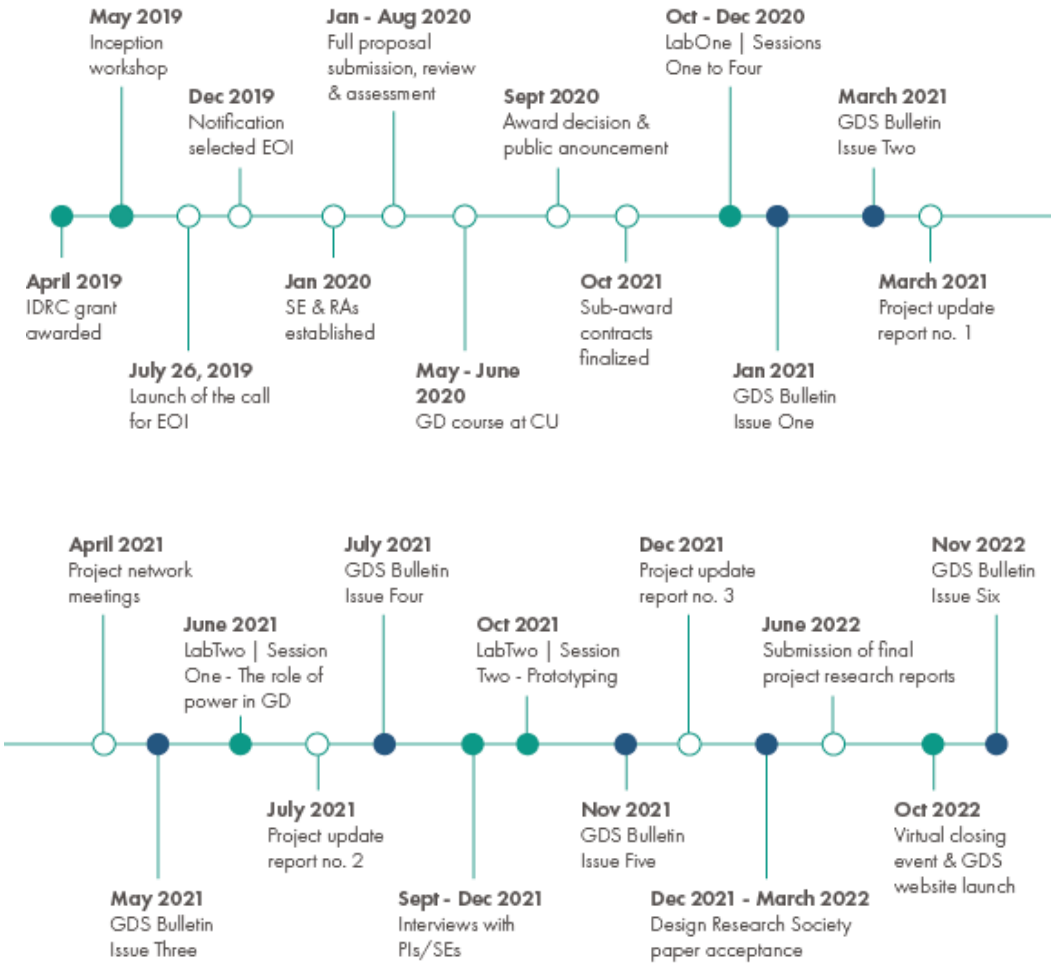


Table 1: Showing the link between the activities and Program goals

Goal	Activity	Time frame
Connect, expand and enhance the community of experts and innovators in gendered design, particularly in LMICs	5.1.1 Inception workshop	Year 1
	5.1.2 Establishing the support network	
	5.1.3 Disseminating the call for Expressions of Interest (EOI)	
	5.1.4 EOI review and decision on applicants to submit full proposal	
	5.1.5 Submission of full proposals and review	
	5.2.1 Proposal review and final award decision	Year 2
	5.2.2 Gendered Design course at Carleton University	
	5.2.5 LabOne HUB activity	
	5.3.3 LabTwo | Session One – The role of power in GD	Year 3
	5.3.7 LabTwo | Session Two – Prototyping	
	5.4.3 Creation of project videos and posters	Year 4
	5.4.4 Closing GDS event	
Support LMIC researchers in conducting research and case studies of current and past gendered innovations, and in designing gendered projects for the future, driven by local interests	5.2.5 LabOne HUB activity	Year 2
	5.2.8 Research projects first update report	
	5.3.1 Project meeting with the support network	Year 3
	5.3.3 LabTwo | Session One – The role of power in GD	
	5.3.4 Research projects second update report	
	5.3.6 Interviews with project Principal Investigators and IDRC	
	5.3.7 LabTwo | Session Two – Prototyping	
	5.3.9 Research projects third update report	
Make the challenges brought by gender in the design of technologies and processes, more visible to researchers, designers, and innovators, particularly in LMICs	5.2.3 Public announcement of winning research projects	Year 2
	5.2.6 GDS Bulletin Issue One, January 2021	
	5.2.7 GDS Bulletin Issue Two, March 2021	
	5.3.2 GDS Bulletin Issue Three, May 2021	Year 3
	5.3.5 GDS Bulletin Issue Four, July 2021	
	5.3.8 GDS Bulletin Issue Five, November 2021	
	5.3.10 / 5.4.1 Presentation at the DRS conference	Year 4
	5.4.2 Submission of final reports from research project teams	
	5.4.3 Creation of project videos and posters	
	5.4.4 Closing GDS event	
	5.4.5 Launch of the GDS website	
	5.4.6 GDS Bulletin Issue Six	

The four primary activities were successfully delivered and have all contributed to achieving the Program's objective and goals. The underlaying activities, milestones and outputs were achieved at various stages of the GDS Program and are summarized here. The full details on the activities, how they were executed, and any challenges faced are described in Appendix A.

5.1 Year 1 | 1 April 2019 to 31 March 2020

The activities of Year 1 centered on establishing the Program, the support network and experts, and managing the call for research projects expression of interest and proposal submission.

Table 2: Summary of activities for Year 1 | April 2019 to March 2020

No.	Activity	Date	Summary / Purpose
5.1.1	Inception workshop	May 2019	A two-day event to launch the GDS Program. The workshop refined the call for research projects, developed the protocol for case studies, and the dissemination process of the call. Information about the inception workshop was added to the research portal.
5.1.2	Establishing the support network	April 2019 to March 2020	The Program contributors were identified to form the expert review committee. The expert review committee included three groups: - **Regional Experts** (RE) to represent and advise on Africa, Asia and Latin America. - **Gender Expert** (GE) with experience of sex and gender analysis in LMICs. - **Sector Experts** (SE) from Carleton University in the fields of transport/mobility, renewable energy, manufacturing, housing, creative industry, infrastructure, accessibility and artificial intelligence. (The majority of this group was established after the Expression of Interest stage). A cohort of Carleton University graduate students were appointed as Research Assistants (RA) (and continued throughout).
5.1.3	Disseminating the call for Expressions of Interest (EOI)	Aug to Oct 2019	The Program put out two concurrent calls: **Stream 1:** Call for case studies and/or narratives of experiences that provided examples of either success or failures in terms of 'gendered innovation' (up to $15k). **Stream 2:** Call for prototypes coupled with case-study research that will result from research-through-design, to achieve new processes and artifacts that will lead to gendered change (up to $35k). It was widely disseminated through social media, GDS virtual portal, relevant forums, blogs, network contacts, and in four languages.
5.1.4	EOI review and decision on applicants to submit full proposal	Oct to Dec 2019	The core team in consultation with the Regional Experts and IDRC reviewed 95 EOIs using a review template and criteria to help maintain consistency. 38 applicants were chosen to submit a formal proposal using a template provided.
5.1.5	Submission of full proposals and review	Jan to Mar 2020	The core team, REs, SEs and RAs started an assessment of the project proposals to ensure suitable alignment with the stream, methodology and budget feasibility, and that the project fully considered a gender perspective and contributed to gendered design thinking. The RAs conducted a SWOT analysis of the proposals with supervision from their SE. The impact of Covid began.

5.2 Year 2 | 1 April 2020 to 31 March 2021

The work of Year 2 primarily focused on awarding the research projects, administrative tasks with creating sub-award contracts with the selected projects and their institutions, establishing a new way of working during the global pandemic, running the first HUB activity, and introducing a new form of communication through the GDS Bulletin. Other activities included the 'Gendered and Design' Master course.

Table 3: Summary of activities for Year 2 | April 2020 to March 2021

No.	Activity	Date	Summary
5.2.1	Proposal review and final award decision	April to Aug 2020	Professional and personal adjustments were needed due to Covid-19, the review process took longer. 20 projects were selected – nine in Africa, eight Latin America and three Asia. The in-depth reviews of the project proposals identified that some of the awarded projects needed to improve how they would incorporate a gendered dimension to their research project and process, and how they would design and implement user-led methodologies. This helped the core team design HUB activities to support knowledge generation (e.g. the Labs).
5.2.2	Gendered Design course at Carleton University	May to June 2020	Chiara Del Gaudio planned and delivered a new Master's course, 'Gender and Design'. Contributions from eight experts, including four connected with the GDS Program, created course content. The course was an exploration into the relationship between gender and design aimed at promoting an understanding of what constitutes a gender-aware design process and outcome, and/or practice.
5.2.3	Public announcement of winning research projects	Sept 2020	We made a public announcement on the 20 grant-winning projects, published as a Carleton University press release, GDS social media platforms and circulated across and through the GDS network (Annex C). We also reviewed, developed, and updated our visual identity with new icons and identified colours to represent the three regions. Later, we added in the name of the sector and STEAM field to the icon to improve accessibility.

New infographics and regional colours

5.2.4	Contract finalization and agreement	Aug to Oct 2020	A sub-award contract for the winning projects was created. The awarded projects were requested to resubmit their budget using a new template that removed 'indirect' costs and provided opportunity to reconsider expected expenses due to Covid restrictions. The processes developed will in the longer term enhance Carleton's ability to support multi-interconnected-international grant dissemination and reporting. The new project budgets were reviewed in detail. We had anticipated research delays caused by Covid-19 and sub-contracts were made for 18 months rather than the original 12 months. The end date was reviewed again in Year 3. Most institutes received their first grant installment with no issues. However, there were challenges with the institutions in Brazil receiving payment due to local rules and regulations. After several months of efforts, this was worked out and resolved.

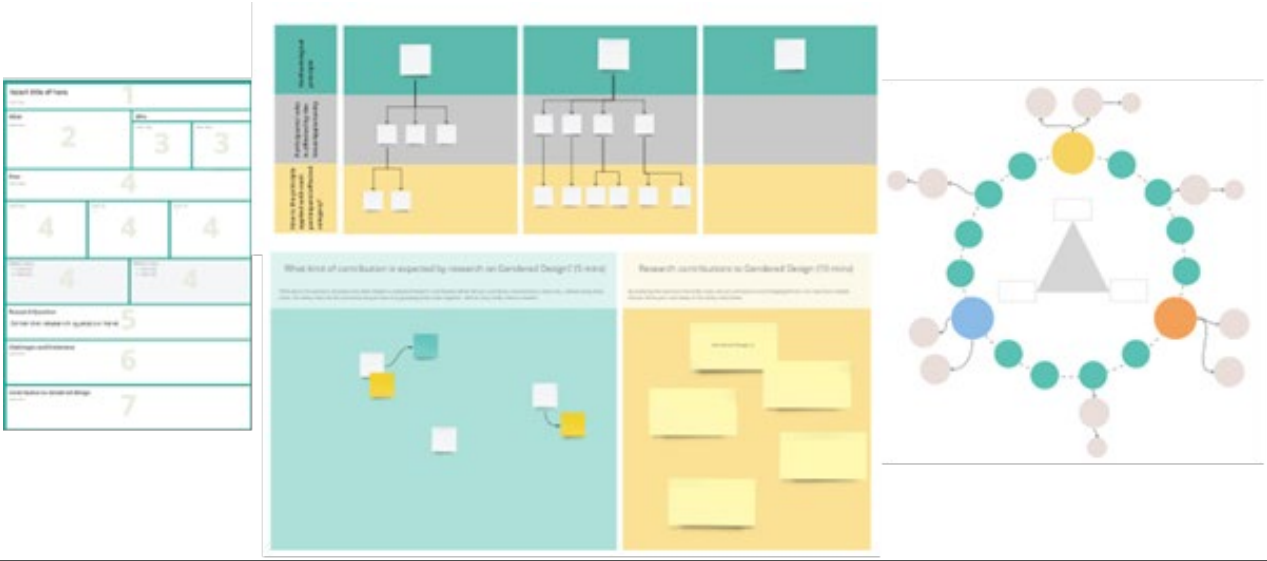
HUB activities

The importance of a flexible and adaptive structure was identified as the main approach towards exploring and achieving the three goals of the Program. In response to new constraints brought by Covid-19, the GDS Program became a HUB, a platform for the exploration and advancement of gendered design knowledge, and practice amongst research teams. The HUB included different kinds of activities, tools and procedures throughout the lifespan of the GDS Program. Labs were created as physical and virtual spaces to facilitate participatory practices by:

- Sharing different expertise and contributing to the topic of gendered design
- Networking; and
- Collective knowledge building

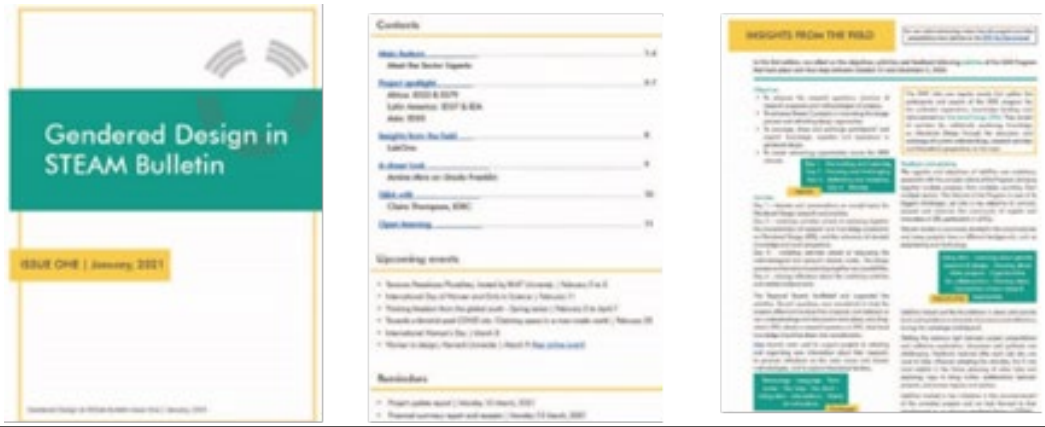
5.2.5	LabOne	Oct to Dec 2020	LabOne was the first GDS HUB activity running over four days (Day 1 - Networking and Learning | Day 2 - Framing and Exchanging | Day 3 - Reflecting and Adapting | Day 4 - Sharing. Annex D is the information pack for LabOne and Annex E is the workshop activity. Each project team produced a five-minute presentation introducing their team and their project (available of the GDS YouTube channel). Some Miro board templates were created for the project teams to use and organize their information from their proposal and for exploring during LabOne workshops. The boards were designed so they can be revisited as their knowledge grew during their project implementation. The aim of the activities was not to provide a specific answer but to provoke reflections on the topics and questions posed during the Lab sessions for a collective process of knowledge building. It was hoped that these reflections might support the awardees in analyzing their proposal and redesign as necessary based on any new understandings, thus strengthening the initial proposals. The feedback collected on LabOne helped shape future HUB activities.

Overview of the Miro board templates created for LabOne



5.2.6	GDS Bulletin Issue One	Jan 2021	The GDS Bulletin was introduced in January 2021. It was a product designed by the Program Coordinator to serve as a means of communicating activities from across the GDS network as well as a platform to share expertise and knowledge. The first issue served primarily as an introduction to the Program including a look at the Sector Experts from Carleton University, a Q&A with Claire Thompson, the Program Officer from IDRC at the time, and a summary of LabOne. Five awarded research projects were introduced, and several relevant readings were shared. Two Carleton University events were promoted to attend – one from the Institute of African Studies Brown Bag Lecture Series on 'Transport justice in South Africa – mapping the gendered impact of transport policy in Johannesburg' by Trinish Padayachee. The second was a roundtable discussion hosted by the Faculty of Arts and Sciences on 'Imagining a just city'. Issue One was circulated across the network and through social media channels and is available on the GDS website.

Front cover and some content of GDS Bulletin Issue One



5.2.7	GDS Bulletin Issue Two	March 2021	The second Bulletin included a main feature written by Chiara Del Gaudio, the Investigator on the GDS, where she provided an overview of participatory design and included a list of useful references on the topic. We knew following LabOne that this would be a helpful area to cover as participatory design was a fundamental approach that the awarded research projects should become familiar with. We spoke with Bjarki Hallgrimsson, the GDS Program PI, in the 'Q&A with' where highlighted the importance of risk-taking and prototyping in design and STEAM. A topic that the GDS Program revisited later. Five research projects were introduced and some reflections on using Miro as an online collaborative tool. Issue Two was circulated as the previous issue and is available on the GDS website.

Front cover and some content of GDS Bulletin Issue Two

5.2.8	Research projects first update report	March 2021	We designed and introduced a 'Project update form' to be used by the awarded research projects during the lifespan of their project (Annex F). The first update report was March 2021 for the preceding six months. A budget-report was also submitted at this point. The update report included a summary of the work completed, upcoming milestones, challenges, gendered design contributions, and knowledge mobilization and networks. The update report: - supported reviewing the projects' progress and deliverables - shared the project teams' experiences and expertise - improved our understanding of the existing gaps and challenges in researching GD locally - helped us design activities to facilitate discussions and knowledge building - supported the project teams in their reflections on their research and progress, keeping in mind the aspects of gender - helped us maintain communication with the projects The reports were shared with the core team, relevant RE and SE and RA.

5.3 Year 3 | 1 April 2021 to 31 March 2022

The work performed during Year 3 primarily focused on the 20-awarded teams developing, adapting, and proceeding with their research projects with several opportunities for the exchange and development of ideas, knowledge growth, and mobilization. The GDS Bulletin continued successfully. The two sessions of LabTwo created interesting possibilities of working, growing, mobilizing, and exchanging across disciplines, different experiences, and backgrounds. A paper written by Chiara Del Gaudio, Bjarki Hallgrimsson, and Dominique Marshall, provided the first major opportunity to document reflections on managing and coordinating the GDS Program between regions, disciplines, scholars, and communities. A no-cost time extension and a reorganization of the GDS Program budget and schedule also took place.

Table 4: Summary of activities for Year 3 | April 2021 to March 2022

No.	Activity	Date	Summary
5.3.1	Project meetings with the support network	Apr 2021	We organized individual meetings for the research teams: they met together for the first time with their RE, one member of the core team, and the SE from Carleton University assigned to the project and their RA. The project update reports were used as background information to discuss research challenges or discoveries, openly and collaboratively. Common themes emerged from these discussions. As a result, we designed two LabTwo sessions – one that focused on the topic of gender and power (5.3.3), and another that looked at prototyping activities (5.3.7).
5.3.2	GDS Bulletin Issue Three	May 2021	The main feature in the third Bulletin was a collection of contributions written by the awarded research team members on conducting research during Covid-19. It looked at their experiences, challenges, adaptations, and learnings in conducting their research during a global pandemic. Readings and resources on this topic were included. We heard from Raquel Noronha and Emmanuel Mutungi, the RE for Latin America and Africa respectively. It introduced five more project teams and had an update from six teams on their fieldwork activities. Engagement through social media increased dissemination, raised awareness about the research projects, and helped awardees receive more recognition within their institutions. Issue Three was circulated as the previous issues and is available on the GDS website.

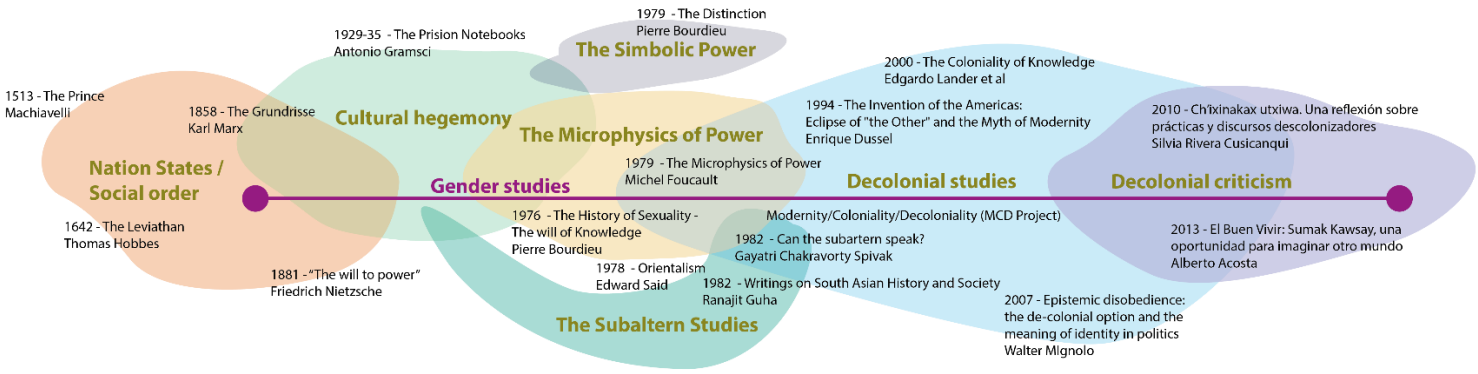
Front cover and some content from GDS Bulletin Issue Three, May 2021

5.3.3	LabTwo | Session One – The role of power in GD	June 2021	LabTwo | Session One – The role of power in GD, was created and facilitated by Program Investigator Chiara Del Gaudio and Regional Expert Raquel Noronha. The session aimed to explore with the project teams the interconnection between power, design, and gender, drawing from post-modern and de-colonial perspectives. Annex G is the associated materials produced to support the session. Drawing from Michel Foucault's and Silvia Rivera Cusicanqui's work, two concepts were explored. An open and collaborative conversation based on research and design experiences, theoretical reflections, and speculations took place. The notion of what 'gendered design' is and means for the individual research projects was often discussed. The center deliberately stayed away from a specific answer, choosing rather to leverage the opportunity of the convergence of the 20 research projects to explore the potential meaning and implications of the emerging concept.

Concept definitions explored during the session

Discursive formations and dispersions	Conditioned participation
Refers to losing the sense of the origin of discourses. The naturalization and alienated reproduction of the practices that operationalize the discourse. Within the scope of gendered design, the use of methods, techniques, and tools can be co-opted by discourses engendered in norms, values, and standards that, potentially, will then be understood as truth. Questions discussed included: – What type of tool(s) did you choose? How did you choose them? – Do they reveal a way of thinking and acting on gender issues? What are these?	When we think about design practice, research in design, and even more so participatory design, we need to reflect on the conditions placed on the possibility of participating: – Who is allowed to participate? – What role can someone play? – What activities can be attributed to those who decide to join the process? All of this has a strong influence on the possibilities of each person's contribution and how this will be considered and made tangible. This produces conditioned inclusions and participations.

Power studies timeline (work in progress)



5.3.4	Research projects second update report	July 2021	All RE, SE and RAs were invited to read the project update reports and provide comments based on their observations along with the core team. Any comments and feedback were shared with the projects and in some instances, meetings were arranged to discuss further. In Latin America, the RE facilitated some collaborative sessions with the project teams. A common theme about prototyping emerged, which had previously been raised through other channels. This led to LabTwo | Session Two – Prototyping workshop (5.3.7). A budget report from project teams was also submitted and reviewed. This led to a 'Budget change request' form (Annex H) being created for teams to adjust the allocation of funding between the different financial categories to better reflect their activities. This created consistency and helped teams learn best practices.
5.3.5	GDS Bulletin Issue Four	July 2021	The main feature of the fourth Bulletin was written by Angélica Bernal Olarte from project ID80. She wrote a piece on critical outlooks from the perspective of feminism, where she explores how women not only face oppression because of gender inequality but also how racism and classism contribute to this injustice, and her discoveries so far through the GDS Program. A report on LabTwo | Session One was included. Five research projects were introduced and the fieldwork of five different projects was shared. Issue Four was circulated as the previous issues were and is available on the GDS website. The Bulletin continued successfully providing a key platform to share news, exchange knowledge and disseminate updates on activities between projects and with outside communities and partners.

Front cover and some content from GDS Bulletin Issue Four, July 2021

5.3.6	Interviews with project Principal Investigators and IDRC	Sept to Dec 2021	All awarded project's Principal Investigator (PI) were interviewed by the core team using an oral history approach in the style of an open discussion that followed some high-level topics. One of the aims of the interviews was to follow the histories of researchers' engagement with the notions associated with gendered design, including the PI's life and professional experiences and the journey that brought them to the point of being a GDS grant awardee. The interview also explored the influence of the GDS Program on their

			research. Annex I is the full interview guide. Four interviews were conducted in Portuguese, four in Spanish and 12 in English. An interview took place also took place with Claire Thompson, IDRC Program Officer, and Luc Mougeot, IDRC Senior Program Specialist for the GDS Research Program at the time of the interview. It focussed on the paths that led to the creation of the GDS Program at IDRC, the ambitions of the agency for the Program, and the ways by which current achievements compared with the initial goals.

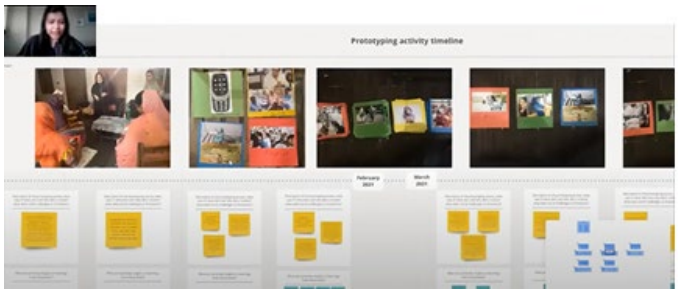
Summary of the interview guide themes

The topics of the 'script' were organized around six themes:

- The telling of their story and project: The connection between their life and professional experience and the idea behind their research project
- Exploring the importance of their research project in their local community and context:
  - What community do they reference? Do they mention 'local', how do they define this?
  - What does community engagement/participation mean and look like?
- The process to make their research/design gender-inclusive:
  - How were questions about women, men, family, roles, and gender understood?
  - How were questions of class (rich and poor), generations (young and old, children and aged) understood?
- Challenges of gendered design in their local context.
- The relevance of the research project for the discipline:
  - What do they understand about the relations between the disciplines and the different types of STEM knowledge?
- Challenges to gendered design practice and research posed by Covid-19 and how they have addressed them.

5.3.7	LabTwo | Session Two – Prototyping	Oct 2021	This workshop was designed to bring together the Stream 2 projects to explore their experiences of the prototyping aspect of their research and provide an opportunity to learn from each other. Stream 1 projects were also invited as observers as it might benefit any future development of their research. The session was planned and presented by GDS PI Bjarki Hallgrimsson, with collaboration from RE for Africa, Emmanuel Mutungi. The workshop aimed to explore what prototypes are and how they can be used: how prototyping processes can be understood as an iterative activity that involves participants in the tradition of Participatory Design. A Miro board template was created to be a focus of collaborative thinking during the workshop. The first activity was to provide an overview of the project's prototyping activities, and the second was to produce a timeline of the project's prototyping activities. See Annex J for more information.

Prototyping timeline activity in Miro – example of three project's timeline



5.3.8	GDS Bulletin Issue Five	Nov 2021	A report of 'LabTwo | Session Two – Prototyping' was the main feature of the fifth Bulletin. We had a Q&A with Dominique Marshall who discussed how history and social sciences connected with the fundamentals of the GDS Program of gender, design, and STEM ad reflected on her involvement in the GDS Program. This was cross posted in CSTHA. It provided an overview of research conducted by Chiara Del Gaudio and one of her students, 'My gender assumptions: Exploring and undoing unaware gender violence by design', that emerged from activities and exchanges made possible by the GDS Program. See 6.1.13 for more info. Update from the remaining nine projects on their fieldwork and research. Issue Five was circulated as the previous issues were and is available on the GDS website.

Front cover and some content from GDS Bulletin Issue Five, November 2021

5.3.9	Research projects third update report	Dec 2021	The third update from the project teams contained an abundance of detail and visual documentation. Comments made by the RE supported the progress of the projects, and in some instances offered advice or guidance on the next steps. Some individual conversations took place to discuss in detail the comments received. Due to the time extension we decided to release half of the remaining 10% of grant funds to the projects as they would need access to more funds upfront to continue their activities. We held back the final payment to be released when their final report was submitted.
5.3.10	Design Research Society (DRS) paper	Dec 2021 to Mar 2022	The paper, written by Chiara Del Gaudio, GDS Investigator, and PIs Bjarki Hallgrimsson and Dominique Marshall, highlights the collaborative process of continually crafting, observing, responding, testing, and tweaking at all junctions of the GDS Program journey. There are lessons learned on the methods and role of design in transdisciplinary research, knowledge production, and the process of delivering a complex program. The paper recognized that the GDS Research Program required us to design and manage a global research endeavor extending across three continents, consisting of distinct projects with shared goals and different disciplinary backgrounds, sectors, and socio-cultural contexts. The paper was accepted into the DRS Conference in Bilbao, Spain. Read the full paper.
5.3.11	Planning the completion of the Program	Jan to Mar 2022	A final report template for the research project teams' use was created that followed a research report format and included aspects of IDRC's reporting guidelines. A final financial reporting template was also created for the project teams to use. An initial draft of the summative event was developed following meetings amongst the core team and REs. We also started to plan the video and poster for the project teams and the GDS website.

5.4 Year 4 | 1 April 2022 to 31 December 2022

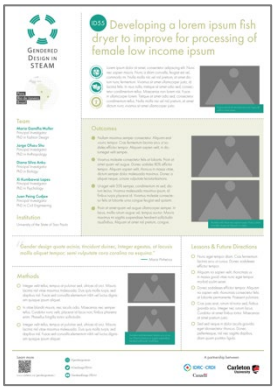
The work completed in the final year centered on bringing the GDS Program to a successful conclusion with the research projects completing and reporting their work and celebrating achievements through a closing event supported by videos, posters, website, social media campaign and a special issue of the Bulletin.

Table 5: Summary of activities for Year 4 | April 2022 to December 2022

No.	Activity	Date	Summary
5.4.1	Presentation at the DRS conference	June 2022	The Design Research Conference (DRS) was held in Bilbao, Spain from the 26 June until the 2 July 2022. PI Bjarki Hallgrimsson and Investigator Chiara Del Gaudio attended in person to present the paper they had written together with PI Dominique Marshall. The paper was called 'Supporting research on gender and design

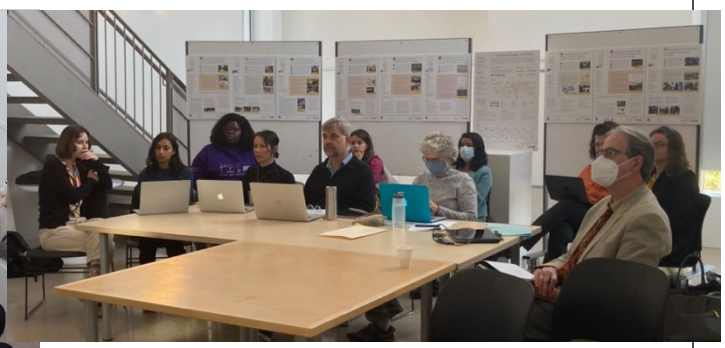
			amongst STEAM researchers in the souths: A case study of subsumption in design methods'. (see 5.3.10 for more information).
5.4.2	Submission of final reports from research project teams	Jun 2022	To support the research teams and to provide some level of consistency in the information and materials produced, a framework on the content of the final report was provided (Annex K). This followed the similar headings and consideration points as the report guidelines required by IDRC. The final reports were shared among the core team, RE and SE for reading and providing comments. While project teams submitted their final reports, with some coming in at the end of the summer, it was recognized that the project teams were still conducting and completing key research activities. Hence, the report provides a snapshot in time of the project's work, and they do not necessarily represent their full activities and outputs. Therefore, the GDS website is a key platform for the Program as it provides a space for the project teams to submit and share additional information and outputs relating to their research that occurred after their final report date. In addition, where English was not the projects first language, it was noted that the information in the final reports at times did not showcase the achievements of the project teams adequately. As part of our archiving activities, we will add the final reports, with the project PI's agreement, to the individual page of the project on the GDS website.
5.4.3	Creation of project videos and posters	Apr to Sept 2022	The outputs for each of the awarded research project teams included an accompanying video presentation and poster summarizing their work and achievements. This work was completed by Carleton's RA. These were used in showcasing the work of the project teams at the summative event and were also disseminated via the GDS website and our social media channels. This provided opportunities to increase awareness about the research projects and the work of the GDS Program to a wider audience. We designed and created a storyboard framework in Miro for the video planning that used images previously provided by the project teams, and audio and video from the interviews conducted with the PIs in Year 2. The videos were uploaded onto the GDS YouTube site and are available on the individual project page on the GDS website. A project poster template was designed and created (Annex L) by one of the RAs on the GDS Program. Variations of the template were created to account for differences in content for the projects and allow flexibility to adapt the layout as needed. For the teams from Latin America, the posters were also translated into Spanish and Portuguese. The posters are available on the GDS website and hard copies were distributed to each project team. We also designed and created a poster to reflect the GDS Program overall (Annex M).

Poster templates



5.4.4	Closing GDS event	Oct 2022	The closing event was held on Tuesday 4 October 2022. The invitation and schedule for the event is in Annex N. The event was hosted from Carleton University by the core team who were joined in-person by some of the GDS network in the Ottawa area. The project videos were divided into five groups based on converging interests and themes. Each grouping was presented with a short introduction prior to watching the video. During the watching of the videos participants wrote supporting comments and observations through the chat function as many were seeing the results of the other projects for the first time in detail. We also issued a press release through the Industrial Design school department, which also coordinated with the Faculty of Social Sciences (FASS) and the African School of Studies and Latin America School to help disseminate the message. Alongside the closing event, we conducted a social media campaign (Annex O) through our Twitter and Instagram channels to highlight the Program and the individual achievements of the awarded research projects. A link to the GDS website was included where there was more information available about each project.

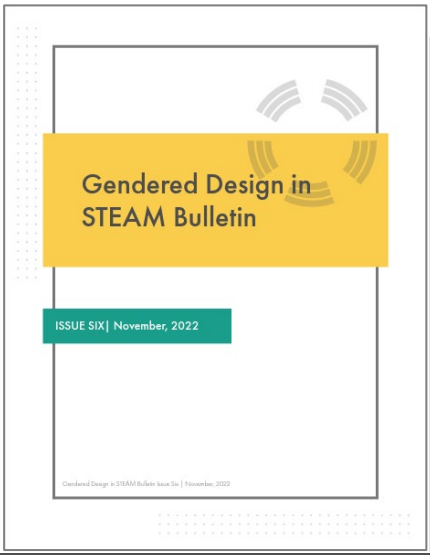
Photos taken during the closing event of participants at Carleton University

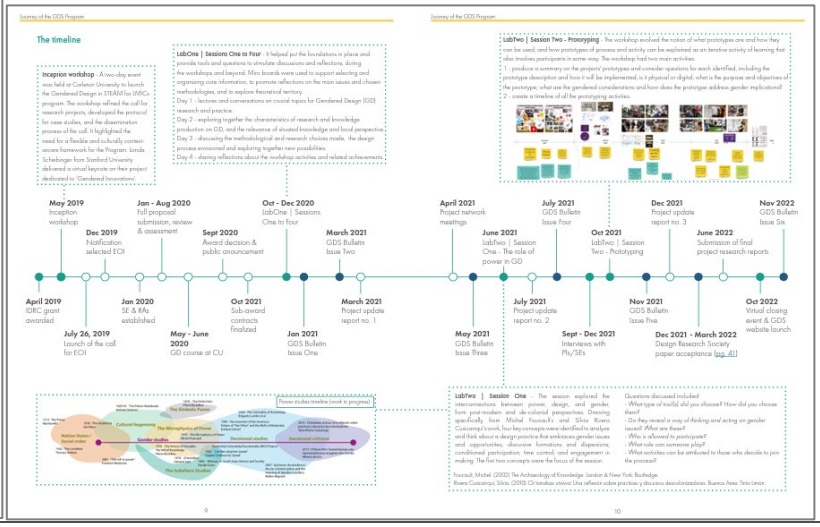


L to R: Ona Bantjes-Rafols (RAC); Maya Chopra (RAC); Victoria Asi (RA); Kerry Grace (Program Coordinator); Bjarki Hallgrimsson (PI); Fernanda Fontes (RA); Dominique Marshall (PI); Kavita Mistry (RA); Heloise Emdon (Manager, International Sponsor); Luc Mougeot (retired IDRC Officer); Katie Bryant (IDRC Officer)

5.4.5	Launch of the GDS website	Oct 2022	We launched our GDS website to coincide with the GDS closing event. It provides a platform for all the information generated by the GDS Program to be readily available and to help promote and disseminate the work of the awarded project teams. The website acts as a repository and is hosted by Carleton University. This provides sustainability and credibility for the awarded project teams. Each project team has its own page where are variety of information on their work can be found. It also includes outputs that they have produced since submitting their final report. The site also has an interactive map showing the 20 projects and a resource library that compiles in one place GDS related resources. As part of the archiving work due to complete early 2023, additional resources, such as the Miro board templates, will be added here.
5.4.6	GDS Bulletin Issue 6	Nov 2022	The final issue of the Bulletin was a special issue compilation of the GDS Program activities, achievements, insights, and reflections from all of those who have been part of the journey. The Bulletin included a recap on the objective of the GDS Program and the goals that it sought to achieve. It has a detailed timeline representing the main activities of the GDS Program since its inception in April 2019. Each of the project posters are presented along with any feedback that the project team submitted about their experiences. It also includes some highlights from an interview that Dominique Marshall conducted with Claire Thompson and Luc Mougeot the Program Officers from IDRC for the GDS Program at the time of the interview. There are also extracts from interviews that Dominique conducted with the Sector Experts from Carleton University and a piece written by the new Program Officer from IDRC. The Bulletin was disseminated through the usual channels. In addition, hard copies were sent to the project teams and REs. It will be added to the Carleton University library (OJS) and will also be sent to the Library Archives Canada (part of our archiving activities).

Front cover and some content from GDS Bulletin Issue Six, November 2022





5.4.7	Closing Program administration	Oct to Dec 2022	See Table 6, Year 4. In addition, a proposal was written by the core team to use the small amount of remaining funds. Unfortunately, this first proposal was rejected. We returned with a new proposal that covered the archiving of the GDS materials and information and for a small synthesis piece of work to collate information across the projects on a particular theme, for example on sustaining research (in the south). This was accepted. The details of the work will be planned in early 2023, with it completing by 30 June 2023.

5.5 Ongoing program management, April 2019 to December 2022

As well as activities specific to the development and discovery of gendered design, knowledge mobilization, creation of networks and research fieldwork and delivery, there were ongoing program management activities throughout the duration of the GDS Program. A summary of the main activities and challenges are described here based on the year of the Program to highlight reoccurring challenges and our response. Further information is provided in Appendix A.

Table 6: Summary of program management activities | April 2019 to December 2022

Year 1, April 2019 to March 2020	
Change in staffing	Kerry Grace joined the team late February to replace Beth Robertson as the new Program Coordinator. This change also signified a shift in job role requirements, from a predominately scholarly position to a unique research program management role to have the oversight, foresight, and drive to match the multifaceted structure.
Covid-19	It was evident that the global pandemic would have real implications on the schedule for the Program as well as the way some activities were executed. We started to think about how the Program needed to respond. Remote working started in March 2020.
New way of working	We started to consider how online activities could be leveraged for the activities of the GDS Program and provide more continuous collaboration in real time, especially as it seemed there would be greater reliance on using virtual spaces. We had also already begun questioning the original plan of having regional conferences; the cost allocation was high with number of attendees low and an unnecessary carbon footprint impact.
Year 2 | April 2020 to March 2021	
Covid-19	The global pandemic heavily impacted the Program schedule, the way some activities were to be planned and executed, as well as on the awarded projects being able to start their research projects and fieldwork. Different levels of local restrictions were different for each project. The core team was also largely impacted as teaching responsibilities moved online. More time was needed to support these adjustments and individual working environments and responsibilities.
Schedule of work	In response to the pandemic, we had to plan for a new schedule. The timetable had already shifted with delays on the award decision and the sub-contracts. As with the ethos of the GDS Program, we needed structure in the

	schedule of work but also flexibility, especially since the impact and length of Covid-19 restrictions were unknown. A new proposed schedule pending a no-cost time extension was written (Annex B).
Grant fund payments	Challenges in the grant funding arriving at the awarded institute meant further delays for the project teams to get started. These delays were caused by; local regulations in receiving payments to their financial institute; the funds being accessible to the research project team once at the institute; and some errors in the banking information provided. There were particular challenges with sending payments to Brazilian institutes.
RA retention & gaps	It required quite a bit of time and effort to fill gaps in the SE RAs when they arose. In addition, a few SEs stepped away from the GDS Program due to conflicting and additional teaching commitments, so time was also spent in finding suitable replacements.
Ethics application	The GDS Program's ethics application was written, processed, and granted clearance by the Carleton University Research Ethics Board-B (CUREB-B), which operates in compliance with the Tri-Council Statement: Ethical Conduct for Research Involving Humans. The ethics application covered the data collection, methodology, structure, and direction of the GDS Program from the perspective of a research project. The application included the completion of the TCPS2 certificate by the core team, REs, and Carleton's RAs. All awarded research projects were contacted to review and sign a consent form.
Budget review	We started to plan for the no-cost time extension for the GDS Program and new timetable for the awarded project teams and the subsequent budget re-organization.
Year 3 | April 2021 to March 2022	
Covid-19	While the core team and the awarded research projects were better adjusted to the challenges of the global Covid-19 pandemic, the negative impacts were still affecting personal lives and fieldwork. Different restrictions and Covid numbers across the countries meant that some projects were able to progress more than others. Needing time to support these adjustments and individual working environments and responsibilities were one factor in the no-cost time extension request. We wanted to reassure the awarded projects that they will have additional time to spend their fund and conduct their research.
Schedule of work	We had open discussions with IDRC as we adapted our Program schedule. We were mindful that, despite all awarded projects having the same start time, we needed to allow for additional flexibility given local restrictions and conditions concerning Covid-19. Following the review of the timetable, this shifted activities into a fourth year for the GDS Program with an overall no-cost time extension of nine months.
Grant fund payments	Three grant installments were paid to the awarded project teams. Two were administered as planned but we administered an additional release which was half of the 10% hold-back amount due at the end. This was in recognition that projects will likely need access to additional funds given the extra time to conduct their research. Therefore, 5% was held back. Some projects continued to be compounded by delays caused by local regulations in receiving payments to their financial institution and the project

	PI having access to these funds. Unfortunately, these challenges could not be overcome by action that Carleton University could take.
Ethics application	Two changes to the protocol, expanding the scope to include the conducting of the PI oral history interviews and option to make the interviews available in a public archive space, were cleared.
Budget review	A proposed budget reorganization to reflect the changes of the new schedule of work was presented to IDRC. The re-organization also better reflected the categories of Program expenses given the shift away from travel, developing outputs and the need to support personnel who were an integral part of delivering activities in the final year.
Year 4 | April 2022 to December 2022	
RA retention & gaps	During the final stages we continued to have some RA gaps, and in a couple of instances have students step away from the Program last minute during the crucial time of creating videos and posters. We were fortunately able to identify and have student recommendations get involved to complete the activities. This added however additional work and effort to manage this process.
Grant fund payments	The final installment was processed and paid to the awarded projects once their final technical report and interim financial report had been submitted. Due to workloads and very limited resources in Carleton's Research Accounting department to support this process, there were long delays in this process completing. This in turn hampered some project teams to finalize their own reporting.
Projects financial reports	Projects submitted an interim financial report detailing expected expenses up until 30 Oct 2022, the end date of their contract. After this date a final financial report was submitted by the project teams detailing their final expenses. Outstanding funds needed to be returned to Carleton - two projects identified as needing to return a small amount of unspent funds. The process for this was provided. Due to the holiday period this action was outstanding at the end of 2022. Project teams should be processing in January 2023. There were delays from some projects due to the initial delay in them receiving their last installment from Carleton.
Final reporting to IDRC	The first draft of the final technical report was completed before the holiday break. IDRC reviewed and provided comments. These will be addressed, along with gathering contributions from the Program's PIs, which was not possible before due to limited availability, in early 2023. Due to delays at Carleton's Accounting department, the final financial summary and comments will be submitted separately.
Budget review	We anticipated a slight underspend of the grant funds from IDRC of approximately $15k to $17k CAD. A proposal was written to use these funds to conduct a feasibility study looking at developing a series of teaching modules to build upon and strengthen the networks and knowledge discovered during the GDS Program – this was rejected. A new proposal (Annex P) was submitted whereby the funds would be used to complete the proper archiving of the GDS materials and a synthesis piece that would look across the projects based on the theme of sustainable research for the southern projects. The details of this piece of work will be planned early 2023 and will be completed by 30 June 2023.

6. Program outputs

The GDS Program has produced many outputs over the course of its duration, all in support of the overall objective, the three specific objectives and the activity objectives. A summary of the outputs follows, organized by theme in-line with IDRCs reporting requirements. Further information about the output is either provide in an Annex or a web link where applicable. First, a reminder of the expected outputs from the proposal and those that were changed during the Program.

Outputs as listed in the proposal

The following six overarching outputs were identified in the original proposal for the GDS Program. There was one major change to these outputs as describe below.

1. Up to 12 case studies detailing examples of successful and unsuccessful attempts to incorporate gender analysis to technological development in LMICs.
2. Up to 10 design prototypes coupled with comprehensive case study research that effectively demonstrates effective incorporation of gender analysis to technological development and within STEAM fields more broadly in LMICs
3. Up to 60 graduate students trained, whether at Carleton or LMIC institutions, to enhance their research and future designs with gendered innovation thinking.
4. A public science portal of virtual / online exhibits that are publicly accessible and which engagingly present, through the use of closed-captioning videos, accessible images, and text, the various different phases of the Program as they progress from one stage to the next.
5. A series of articles detailing individual case studies and prototype design challenge / case studies, authored by LMICs innovators and scholars, in a special issue of an agreed upon open-access scholarly journal with international reach (see below for changes to this output)* (see below for important change to this output).
6. A collaboratively written synthesis paper between Carleton and other Canadian sector experts, graduate students, gender and regional advisors and LMIC applicants, detailing the process of the program, lessons learned, insights gained and suggestions for future directions.

*In the original GDS Program proposal the following output was listed: '*A series of articles detailing individual case studies and prototype design challenges, authored by LMICs innovators and scholars, in a special issue of an agreed-upon open access scholarly journal with international reach*'. Following discussions with Claire Thompson and Luc Mougeot, Program Officers from IDRC in December 2021, it was apparent that it would not be possible for the GDS Program to be responsible for achieving this level of output. Several areas were identified in support of this decision:

- Not all projects will want to publish in this format. Any papers written may not be accepted and this is something that Carleton University has no control over.
- It is not a stipulation of the sub-award contracts that project teams must publish an article in a journal. They will be asked to write about the dissemination of their research or plans if these are forthcoming at the point when they write their final report to us.
- There are different paper requirements and not all projects will want to target the same journal for publishing that would serve them the greatest impact for their research.

- Local publication and dissemination may be more relevant in the context that the projects have been designed to support and improve lives locally in the first instance. Local lessons may not be transferrable to an international platform.
- 'The North' should not dictate how, where, and when 'the South' should write about their own research. The team at Carleton University can offer guidance, advice, and support if requested. The network generated by the GDS Program will also help build and develop potential partnerships.
- The logistics of publishing in this way takes a lot of time and resources that will extend far beyond the end of the GDS Program.
- The proposal was written before Covid-19, consideration to the Carleton's resources, which were vastly underestimated, and when the proposal was written we did not know what projects would be awarded and be part of the GDS Program.

Therefore, it was agreed that this result and output could be amended as follows: '*The awarded project teams to disseminate their research through papers, reports, presentations, conferences, and other channels, locally and/or at an international level, where possible, with support from the GDS network where needed'.*

The outputs have been arranged under the three headings identified by IDRC's guidelines; research; capacity building; and policy or practice influences. It should be noted that due to the different scope and focus of this research Program as described in earlier sections, the outputs of this research Program may not all be directly applicable to the guidelines given by IDRC.

To help review the Program outputs, it is useful to remind ourselves of the Program objectives, to show the connection with how the output helped support, develop, or deliver the objective and goals of the Program. The corresponding number of the objectives is referenced in the summary tables provided in the 'Research' and 'Capacity building' output sections.

Specific Program goals

1. connect, expand and enhance the community of experts and innovators in gendered design, particularly in LMICs;
2. support LMIC researchers in conducting research and case studies of current and past gendered innovations, and in designing gendered projects for the future, driven by local interests; and
3. make the challenges brought by gender in the design of technologies and processes, more visible to researchers, designers, and innovators, particularly in LMICs.

6.1 Research

We achieved various outputs related to research during the Program via conference presentations and article publication, as well as other important outputs such as the GDS website and Bulletin publication. In addition, several knowledge-building and networking opportunities were created and led by the core team. These outputs are summarized in Table 7. The individual project teams would have also created locally further knowledge-building and networking outputs.

Table 7: Summary of Research outputs achieved, April 2019 to December 2022

No.	Research output	Delivery period	Program goal(s)
Research initiation			
6.1.1	Inception workshop and materials	Year 1	1
6.1.2	Establishment meetings	Year 1	1
6.1.3	SWOT activity and proposal briefings	Year 2	1
Research Program management			
6.1.4	Monthly Program updates	Years 1 & 2	2
6.1.5	Team meetings and Program schedule	All years	1 & 2
6.1.6	Project update report and budget reporting	Years 2 & 3	1 & 2
6.1.7	Final report template for the project teams	Year 3	2
Research workshops, tools and practices			
6.1.8	Gender and design course	Year 2	1 & 3
6.1.9	Abstract submission STS conference	Year 2	3
6.1.10	LabOne	Year 2	1 & 2
6.1.11	LabTwo | Session One - The role of power in GD	Year 3	1 & 2
6.1.12	LabTwo | Session Two - Prototyping	Year 3	1 & 2
6.1.13	My Gender Assumptions toolkit	Years 3 & 4	2
6.1.14	Political History in Canada course	Year 3	1 & 3
6.1.15	Interview guide (interviews with PIs and IDRC)	Year 3	2
6.1.16	Recorded interviews and transcripts	Year 3	2 & 3
6.1.17	Design Research Society (DRS) Conference paper	Years 3 & 4	3
6.1.18	Tackling gender oppression by embracing transgression	Year 4 & after	2 & 3
Research communication, dissemination and knowledge sharing			
6.1.19	GDS Bulletin	Years 2, 3 & 4	3
6.1.20	Final reports from the project teams	Year 4	3
6.1.21	Project team posters	Year 4	3
6.1.22	Project team videos	Year 4	3
6.1.23	GDS Program poster	Year 4	3
6.1.24	Closing event	Year 4	3
6.1.25	Website	Years 3, 4 & after	1, 2 & 3
6.1.26	Social media and press releases	All years	3
6.1.27	Library access	Year 4 & after	1, 2 & 3
6.1.28	Archiving of materials	Year 4 & after	1, 2 & 3

Research initiation

6.1.1 **Inception workshop and materials:** This provided an opportunity to drive forward the Program and draw attention to the topic within the Carleton community. It promoted networking and knowledge building among attendees and information outputs to be shared and used in the future. The Regional Expert from Africa, Emmanuel Mutungi, joined us for this event, as did potential Sector Experts from Carleton, members of the wider Carleton community and IDRC. A Scalar website was created that provided a platform to help communicate the project proposal and the call for expressions of interest. It also served as a location to publish information from the inception workshop.

6.1.2 **Establishment meetings:** Several meetings and discussions occurred, collectively and individually, with the Regional Experts, Sector Experts, Research Assistants, and the core team throughout the early stages of the GDS Program initiation. Regular meetings also took place with IDRC during Year 1 with Program initiation. Regular meetings and discussions with the Regional Experts continued throughout the Program around key moments of activity and planning. Ad hoc meetings also took place between the Sector Experts and the core team. Informal discussions and collaboration through WhatsApp, for example, also took place between the REs and the projects. These helped identify where individual projects may need additional support or have questions about their project development.

6.1.3 **SWOT activity and proposal briefings:** This began at the end of Year 1. The outputs, created by the Research Assistants for the Sector Experts at Carleton University, were key deliverables used in reviewing the proposals in the award decision-making process. This output was for internal use alone among those involved in the decision-making process for awarding. They provided a platform for further discussions between the core team, Regional and Sector Experts when delving into the detail of the proposals to make the final decision.

Research Program management

6.1.4 **Team meetings and Program schedule**: A weekly core team meeting schedule was established with a running agenda, assigned task list and weekly objectives for the Program Coordinator. The meeting also helped to establish other assigned tasks for Carleton's RAs. A project Gantt chart was developed to support scheduling discussions and was used throughout the Program. The weekly to fortnightly team meeting continued throughout the Program cycle.

6.1.5 **Monthly Program updates:** This form of communication was introduced at the end of Year 1 in March 2020 to provide regular updates to the Program's expert committee. It provided a summary of the key milestones and activities achieved and forthcoming key activities. Once the awarded projects started their contracts and HUB activities began, the distribution list and purpose to communicate changed. The GDS Bulletin (see below) became the main form of communication to share information. Email remaining the main form of daily communication with the project teams and GDS network.

6.1.6 **Project update report and budget template:** We designed two templates for the awarded projects to use when providing updates on their project progress and project expenses. These templates helped to create consistency in reporting from the 20 different research projects. This in turn meant the administration and management was easier since all the projects were using the same template. The information contained in the reports provided a means to monitor the progress of the project, identify

areas for support, and share learnings and experiences. Annex F is the project update report template. The update report and interim expense reports were in use during Year 2 and Year 3. See sections 5.2.8, 5.3.4 and 5.3.9 for more information. The 'budget change request' form (Annex H) was created by the GDS Program Coordinator to facilitate and help projects review and request amends on how they plan to use their grant award. This form could be used for other projects in the future to create consistency in reporting and oversight.

6.1.7 **Final report template by the project teams:** To support the research teams and to provide some level of consistency in the information and materials produced between the project teams, a framework on the content of the final report was provided (Annex K). This followed the similar headings and consideration points as the report guidelines required by IDRC.

Research workshops, tools and practices

6.1.8 **Gender and design course:** The planning and development of a new Master's course on gender and design started at the end of Year 1. Dr. Chiara Del Gaudio planned and delivered the course, the content of which is presented previously in the report. The original plan was adapted to bring it 100% online due to the global pandemic. The course content was created from contributions from eight experts, including four who are on the GDS Program committee. The course was delivered from May 2020 into June 2020, with 12 classes and nine students registered. All the references and source materials will be detailed under the 'Resources' section on our virtual platform. The materials created and produced from the course, or a version adapted to act as a template for repeating the course, will also be considered for inclusion.

6.1.9 **Abstract submission STS conference:** A abstract was submitted jointly written between a student on the 'Gender and Design' course and Chiara Del Gaudio, to the Science, Technology and Society (STS) Italy conference on fostering gender inclusivity through computer game design.

6.1.10 **LabOne:** For LabOne, several tools, activities, and templates were designed aimed at highlighting the possible meanings and importance of a gendered lens for the research projects, and at supporting its implementation. Annex D is an information pack provided to the awarded projects on LabOne. Annex E provides detailed information on the content and format of LabOne that was used by the core team members supporting the facilitation of activities pre-, during- and post-Lab. A selection of Miro board templates was also created to assist project teams in organizing their project information and reflections following the workshop activities. The templates and exploratory activities designed will be considered for inclusion on the GDS virtual platform as a reusable resource.

The introductory videos created by the project teams are available on the GDS YouTube page, we also made added the recordings from Day 1 of LabOne, a presentation by Amina Mire, and pre-recorded conversations with our Regional experts Emmanuel Mutungi and Raquel Noronha, and Pascale Saint-Denis, a Research Award Recipient from IDRC. We also added the recordings taken from Day 4 on the presentations on the activities of the workshops, but they were only made available to the participants of the workshop.

6.1.11 **LabTwo | Session One – The role of power in GD:** For Session One, Annex G is the information pack and workshop activities handbook created by Chiara Del Gaudio and Raquel Noronha. These original

methods might be of use to future gendered design researchers.

6.1.12 **LabTwo | Session Two - Prototyping:** This session focused on prototyping. It was planned and presented by Bjarki Hallgrimsson, one of the GDS PIs, with collaboration from Emmanuel Mutungi, Regional Expert for Africa. A Miro board template was created to facilitate the workshop and helped the project teams expand their thinking around prototyping activities and how these can support, direct, and challenge their research activities. The timeline design used in the Miro boards can be added to and completed by the project teams. Annex J describes the activities designed for Session Two on prototyping.

6.1.13 **My Gender Assumptions:** Exploring and undoing unaware gender violence by design: Led by Chiara Del Gaudio, the Investigator in the GDS Program, started a project in May 2021 with one undergraduate student from the School of Industrial Design as a Research Assistant. It is an exploratory research project that aims at designing a tool to promote understanding on the relation between design choices and gender. The tool is meant to be used by the instructor when teaching design in undergraduate programs and by interested designers to self-reflect on their own processes and improve them.

The project, 'My gender assumptions: Exploring and undoing unaware gender violence by design', is generated by the activities and exchanges made possible by the GDS Program. To design the tool, Chiara and the RA have identified and explored gender issues inherent in design and when/how they emerge. Drawing on that, they developed a process to promote this awareness and to engage and support designers in rethinking their ways of designing. The development of a tool that guides students through their design process is a direct outcome of this project to raise awareness of gender biases among future design students. The tool includes a small lecture on gender to be used with undergraduate students (Annex Q). The tool is available online and has been applied in several instances in design education at Carleton University.

6.1.14 **Political History in Canada course:** Dominique Marshall developed a new course syllabus on 'Science, Technology, Engineering and Mathematics (STEM) in the History of Canadian Society and Policy', which ran in the fall of 2021. This was created directly following Prof. Marshall's connection to the GDS Program as Co-PI. The course was an exploration of the complex history of STEM in Canada. It addressed public uses of science in Canada, Indigenous and traditional knowledge, knowledge, transnational relations of innovations, dissemination, education, as well as major discoveries. The course focused on selected elements of STEM chosen in collaboration with students. Inspired by ways of looking at science and society developed in GDS, the students' eight mid-term group projects on 'Science and International humanitarianism' were posted on the teaching website Recipro.

6.1.15 **Interview guide:** For the interviews with the awarded project PIs an interview guide was developed. This followed the principles of an oral history interview. The full interview guide is in Annex I[12].

6.1.16 **Recorded interviews and transcripts:** The interviews that took place with the project research leads and representatives from IDRC will be kept in a suitable archive that can be used for future research and interest in gendered design in STEAM. The work to finalize this will take place after the submission of the final technical report and will be completed by 30 June 2023.

6.1.17 **Design Research Society (DRS) Conference paper:** A paper for the DRS 2022 conference was written,

[12] Any reuse of this interview guide should cite the following authorship: Marshall, D. & Del Gaudio, C. (2021) Gendered Design in STEAM Program, Carleton University.

submitted and accepted by Chiara Del Gaudio, Bjarki Hallgrimsson and Dominique Marshall. The conference took place at the end of June 2022 in Bilbao. Bjarki Hallgrimsson and Chiara Del Gaudio attended in person to present the paper. See sections 5.3.10 and 5.4.1 for more information. The paper was circulated across the GDS network and has informed further thinking around gendered design.

The DRS Biennial Conference is a major international event in the global design research calendar with a reputation for academic quality, provocative thinking and industry engagement. Over a 4-day period, the conference embraces refereed paper presentations, conversations, debates, a doctoral programme, labs, and workshops for over 500 participants.

6.1.18 **Tackling gender oppression by embracing transgression:** Chiara completed some exploratory research during Year 2 and 3 of the GDS Program. The overview of this work is summarized here:

Transgression can be understood as a process of testing and trying to overcome the limits of social convention established by who is in power. It has inspired and characterized several art movements that acted against the status quo and revolutionized aesthetic perception and quality norms. Considering this and the creative potential inherent to this process, the concept of transgression might be of great relevance when rethinking Design from a Gendered design perspective. This research project, exploratory in nature, aims to understand how Design can support processes of transgression of socially defined gender norms and, therefore, address gender oppression. It will also reflect on the relevance of embracing transgression in design processes towards increasing the creative potential of design practice and enabling plural possibilities of being.

Chiara is currently writing a paper on her findings from her research. In February 2023, she will also be presenting her research as a guest speaker at Politecnico di Milano as part of the module on 'Diversity and social inclusion' under the 'Discriminations and new technologies' course. The paper, once finalized, will be available on the GDS website.

Research communication, dissemination and knowledge sharing

6.1.19 **GDS Bulletin:** This was proposed, designed, and created by the Program Coordinator of the GDS Program with assistance from the core team and one of the RACs. It shared information about the awarded projects, including the project background, the research teams, and insights from their research activities. It also informed the network of ongoing activities and drew on expertise and experience from the network to increase knowledge sharing and mobilization opportunities. The Bulletins were shared directly with the GDS network, who were encouraged to share it with their professional network. It was also announced on Twitter and Instagram providing a link to the Bulletins. All Bulletins will be available from the Carleton University library and the Legal Deposit Program at Library and Archives Canada (LAC).

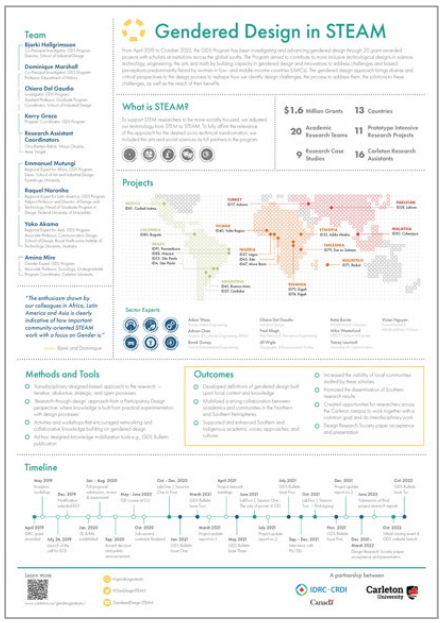
The first issue was released in January 2021 and the second was released in March. During Year 3, there were three issues of the GDS Bulletin released, in May, July, and November 2021 (see sections 5.3.2, 5.3.5 and 5.3.8). The final issue of the GDS Bulletin was released the end of November 2022. It provided a visual representation of each of the awarded research teams through the presentation of an amended project poster. It also included highlights from interviews conducted with the Sector Experts from Carleton University and an interview conducted with colleagues from IDRC. There was also a

selection of comments from our RACs and a few of our RAs on their experiences and learnings from being part of the GDS Program. There was also a recap of the timeline of activities and background of the GDS Program as well as closing remarks from the PIs and Investigator and the Program Officer from IDRC.

6.1.20 **Final reports produced by the project teams:** The awarded project teams submitted a final written report at the end of June 2022, but some reports came in later in August. The information in the final reports was used to help create the story of the research journey for the project videos that were being created. The final reports were shared with the GDS network, including the Regional and Sector experts to review and provide comments and insights. It was recognized that some project teams had ongoing work to complete and that this report, while deemed as 'final' did not necessarily signify the end of their research work activities under the GDS Program. For some, writing a full report in English was challenging and it was noted that in some cases the final report did not do the work and achievement justice. The final reports, with the finances removed were also shared with the Program Officer at IDRC. The redacted versions of the projects final report will be added to the GDS website after reviewing any ethical or consent request. This is ongoing and will be completed as part of the archiving exercise in early 2023.

The research project teams were offered to have additional materials or outputs that they might have completed after the submission of the final report to be made available via their individual page on the GDS website. Some project teams submitted information, including links to videos they produced and leaflets and other written materials. As part of the outstanding archiving work, we will offer project teams another opportunity to share anything relating to their activities and outputs to add to the GDS website.

6.1.21 **Project team posters:** Annex L provides an example of the template designed and created for the project posters. There were four variations of the template created to account for differences in content for the projects. This was created by one of the RAs on the GDS Program who is in the School of Industrial Design. The RA associated with the project created the poster. The posters featured in Issue Six of the Bulletin (although slightly altered in layout for this purpose) and are available as a PDF for downloading from each project page on the GDS website. For the teams from Latin America, the posters were also translated into Spanish and Portuguese. The posters were also printed by Carleton and a few hard copies were distributed to each project team. For the closing event, some posters were printed on foam core and displayed in the room – the remaining posters that were not available on the day were later printed on foam core as part of a display at Carleton University.



6.1.22 **Project team videos:** See the GDS YouTube channel for the playlist of all the videos created. These are also available on the individual project page on the GDS website.

6.1.23 **GDS Program poster:** As well as individual project posters, we also created an overall GDS Program poster (Annex M). This was printed as A1 and showcased at the closing event in the room where in-person participants attended. The poster is available on the GDS website in PDF format. This poster, along with the 20 project team posters will be displayed at Carleton University in the School of Industrial design and the Faculty of Social Sciences.

6.1.24 **Closing event:** An invitation for the closing event was circulated across the GDS network with details on how to join. We also had a short slide deck introducing the different sections of the day (Annex N). The event itself was a significant in the GDS Program calendar as it was an opportunity to bring the network together for one last time.

6.1.25 **Social media and press release:** The GDS social media channels on Twitter and Instagram was used throughout the GDS Program, primarily around key milestones and activities. This included the project award announcement (also a press release) in September 2020, which was also a reinvigoration of the GDS social media channels, LabOne activities and the release of each Bulletin providing updates of the project teams activities. For the GDS closing event, a social media campaign on Twitter and Instagram was created drawing attention to all the achievements of the 20 project teams. The visual homepage of the GDS Instagram account is shown in Annex O. This allowed us to connect with the awarded projects directly through the personal accounts of the research team members and directly with the partner institution, retweeting and sharing their posts about their project work that promoted dissemination.

For the closing event, a press release was released by the School of Industrial Design and linked through to Faculty of Social Sciences and shared with Latin American and Caribbean Studies and the Department of African Studies at Carleton to help promote and disseminate the achievements of the project teams and potentially create new connections. The GDS YouTube channel hosts the project videos from LabOne and those created for the closing event.

6.1.26 **Website:** The GDS website is a key platform for disseminating information about the GDS Program to wider interested audiences. This replaced the Scalar platform. The GDS website was officially made public on 4 October 2022 to coincide with the closing event. The website provides a page dedicated to each research project team where their summary video and poster can be found. Other information or links provided by the projects teams are included there too. The website is hosted on Carleton University so the site will remain fully accessible for years to follow. Project teams have been provided the option to add further information about their research and developments as they arise should they wish.

6.1.27 **Library:** All published GDS bulletins will be available through the open access journal platform, OJS. The Open Journal System (OJS) enables open access publishing for University communities. OJS is indexed via Google Scholar and will also be indexed and accessible via OPAC library catalogues. Researchers can access the GDS Bulletins in a variety of search mechanisms and ways - whether it is Google searching on their computers or phones (our website is also mobile capable) or through academic literature searches via Google Scholar or library OPACs. Additionally, the GDS Bulletins, by being indexed in this way, will also be findable through international library searches via WorldCat. All GDS teams will have access to the research Bulletins in perpetuity via the GDS website and through OJS and there are no pay walls or authentication needed to access these materials. At the time of writing the Bulletins are being added and will be completed early 2023.

The Bulletins will be added (in progress) to the Aurora catalogue of the Library Archives Canada. The titles are permanently preserved for future generations. The ISSN of the Bulletin is 2563-8378 (online) and 2563-836X (print).

6.1.28 **Archiving of materials:** The final phase of the GDS digital archiving initiative will be housing information sensitive data (oral histories, and other findings with private information) on the secure and accessible

platform. The GDS team is currently exploring options for this phase of digital archiving including utilizing Borealis, the Canadian Dataverse Repository / le dépôt Dataverse canadien is bilingual, multi-disciplinary, secure research data repository. The Carleton University local instance of this repository, Dataverse, is Carleton's local instance of the larger Borealis service. Dataverse provides a platform for discovery, management, sharing, and preservation of research data, and supports Canadian researchers seeking to comply with Tri-Agency Research Data Management Policy requirements and recommendations for data deposit and sharing. The work will include reviewing our ethics and participant consent. Archiving also includes adding resources such as the Miro board templates, interview guides, final reports from the project teams, interview transcripts and/or the video interview (in-line with ethical guidelines) and other supporting materials created during the GDS Program. The full archiving of the GDS materials will be completed early 2023.

6.2 Capacity building

Throughout the duration of the GDS Program there have been several activities that supported capacity building across the GDS network. Some of the capacity-building impacted on the sustainability of the research, new equipment and training, reinforcement of the research projects, increased research or administrative skills of the researchers, new ways of working, and increased contribution of women from LMICs. The capacity building outputs were primarily driven through the research activities and outputs described in the previous sections (6.1 and chapter 5). While some examples are provided, the awarded research projects would have also achieved greater capacity building than what is described here. This is described in their final reports, interviews, video and posters that are all available on the GDS website.

Table 8: Summary of capacity building outputs, April 2019 to December 2022

No.	Capacity building output	Project goal(s)
6.2.1	Awarding the research grants	1
6.2.2	Awarding process - administrative	1
6.2.3	Prototyping	2
6.2.4	Exposure to using new tools	2
6.2.5	Students from Carleton University	1 and 2
6.2.6	Research Assistants and team members of awarded projects	1 and 2
6.2.7	My Gender Assumptions tool	2 and 3
6.2.8	Political History in Canada course	2 and 3
6.2.9	Transdisciplinary design	2

6.2.1 **Awarding the research grants:** The awarding of the 20 projects across the global South was the first step in enabling the capacity building in LMIC to explore gendered innovations in STEAM.

6.2.2 **Awarding process:** During the awarding and contract signing process, many of the awarded project teams were exposed to new processes in establishing and setting up their research project within their institution. For example, this included the process to receive the grant payment and financial reporting. For those project teams that had to go through any country clearance procedures, this was a new process for them and the Carleton team who provided support where possible for this. Carleton too had to

develop the process and documents for the sub-award and create and implement ways to monitor, track and report across the 20 awarded projects. We also had to discover new ways to transfer funds.

6.2.3 **Prototyping:** From the feedback, all participants of the session increased their understanding of prototyping as a method of research that goes beyond a physical construction and reflected on the importance of involving end-users and stakeholders in the process. One participant also spoke of taking what they had learned and sharing their new knowledge and experiences to influence others,

> *"Personally I have learnt a lot and hope to impact others with this acquired knowledge and experience".* | ID65, Africa, PI

Written feedback from one participant, echoed other sentiments expressed during the workshop,

> "*...redefinition of prototyping to include other than physical prototypes was highly relevant both as an innovative approach but also to integrate Gender issues in the design process*" | ID71, Africa, PI.

6.2.4 **Exposure to using new tools:** Through the workshop activities of LabOne, many of the project teams, as well as the core team, had exposure to using the online collaboration tool Miro for the first time. The Miro platform was also used during the workshop activities of LabTwo | Session Two where participants had the opportunity to develop their skills further. Learning these new technology skills increased individuals and teams' capacity for online collaboration and virtual dialogue where many had to adapt to remote working. Some project teams continued and expanded the use of Miro for their project planning and organization.

> *"Furthermore, some of the collaboration tool used in the course of the project, like MIRO is still be[ing] used in some other project work that I am coordinating."* | ID65, Africa, Co-PI

The Lab activities themselves, provided research teams with materials, tools, and activities designed to strengthen their research and design processes, gendered practices, and prototyping considerations.

> *"Collaborative working on Miro board set-up by Carleton university that enabled all the research teams to come together at the beginning of the research."* | ID50, Asia, PI

> *"At a glance, one can visualize how the project objectives, project activities, and outcomes are connected".* | ID33, Africa, PI

6.2.5 **Students from Carleton University:** During the proposal review process and involvement in the workshops and activities of LabOne, the RAs increased their understanding of the Program's objectives, depth of knowledge of the projects assigned to them, as well as their skills of conducting critical reviews. The RAs continued to increase their understanding of the Program's objectives, knowledge of the projects assigned to them, and their understanding of prototyping activities through their involvement in LabTwo | Session Two. In addition, as part of the activities in LabTwo | Session Two, the RAs also practiced their presentational skills. Through the preparation activities for the project videos, the RAs developed their storytelling skills and using new technologies such as Adobe Premier.

> *"The program propelled me into a new-found understanding of design and sparked my interest in pursuing research around the relationship between gender, design, and power."* | Maya Chopra, RAC

> *"The GDS program was a unique experience which broadened my perspective on what design can be and do...the GDS program helped me reflect on the direction of my career path and how I intend to contribute to society as a designer...made me aware of my responsibility to design for the inclusion and support of less privileged women to have a more equitable society."* | Fernanda Fontes, RA

> *"Not only was I able to learn different research and technological innovations, but these projects were incredibly educational, and encouraged me to learn more about different systems in different countries, how they work and who they benefit."* | Kavita Mistry, RA

> *"Being a Research Assistant on the GDS Program was enlightening. It was a hands-on experience, learning tools that aided the success of the Program such as video editing, the use of Miro boards...being fully involved through the course of the program duration was fulfilling."* | Victoria Asi, RA

One of the Research Assistant Coordinators (RAC) who joined the GDS Program in March 2020, expanded their understanding of design as both a practice and discipline. The Program sparked their interest in pursuing research around exploring the relationship between gender, design, and power and they developed a focus on gendered design in their thesis subsequently. They graduated in the fall of 2022 and their paper is available on Carleton's thesis repository (CURVE).

> *"During the many fruitful conversations with different project teams across different regions, the concept of intersectionality was brought to my attention. This concept quickly became the central part of my thesis. Through the GDS program and the dynamic and international environment, I was able draw from this experience and recognize the importance of uplifting a plurality of local knowledge, which also became a key theme in my research."* | Maya Chopra, RAC

A student on the 'Gender and design' course went on to submit an abstract with Chiara Del Gaudio based on her seminar work for the Science, Technology and Society (STS) Italy conference, about fostering gender inclusivity through computer game design. The work was accepted into the conference and presented in June 2021. This student was from the Faculty of Social Sciences and was also able to appreciate the cross-over and benefits of having history part of a 'design' research project,

> *"I realized the parallels between the concerns being discussed in the historical discipline and in design. Involving communities in the research process, valuing local knowledge, and keeping social impacts in mind were all essential parts of my education in oral history methodologies. We might use different terms and references, like 'sharing authority' rather than participatory design, but it became clear that we are concerned with similar issues."* | Ona Bantjes-Rafols, RAC

See also 'My Gender Assumptions tool' (6.2.7).

6.2.6 **Research Assistants and team members of awarded projects:** While we are not expected to discuss in detail the activities of each project in this report, we are aware through the project update reports, the final report and discussions with the project teams, that there has been capacity building and skill development amongst the team's students. For example, Master's and Ph.D. students have submitted and defended their theses that are directly linked to the work of the awarded research project. These students are females. A strong foundation has been set for knowledge building on gender aware and participatory design practices among the project team members.

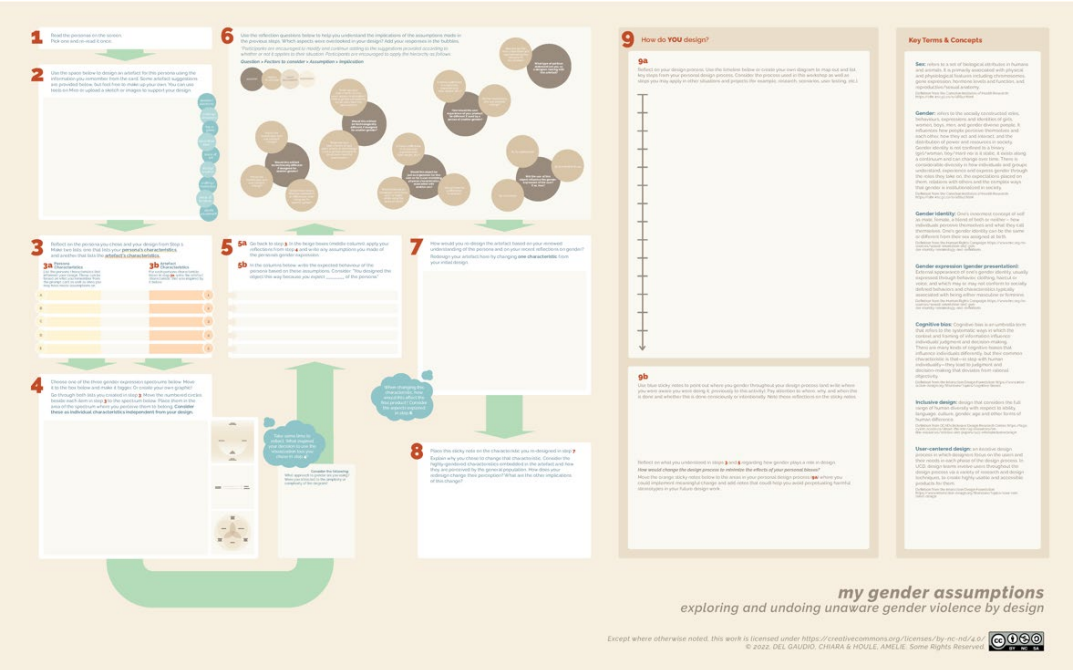
> *"I partly managed the efficient running of the entire project with the principal investigator. It wasn't easy, but it was a good learning process...I have also strengthened various skills deployed at different stages of the project."* | ID65, Africa, Co-PI

6.2.7 **My Gender Assumptions tool:** Exploring and undoing unaware gender violence by design: The student directly involved in the project described learning about how to understand biases and how this affects gender-based stereotypes through designs. The student's work as an RA in other projects has raised within them the existence of gender issues in the processes designed by other researchers. The latter are embracing the challenge of rethinking their process. The tool developed has, and will continue to, raise awareness of gender biases and guide students through their design process as it is applied within design education at Carleton University.

The tool was used in the 4th year undergraduate course 'IDES4001 Industrial Design Seminar' in fall 2022 led by Chiara Del Gaudio and attended by 21 students. The course addressed key discussions in contemporary design, such as: Co-design; Design for social innovation; Critical and speculative design; and Gender inclusive design. Students discussed the dynamics of discrimination embedded in design processes and outcomes using the tool in pairs and then later they discussed what understanding emerged.

The activity catalyzed an interesting and animated discussion in class. It seems that students realized that they have never reflected on this in design, except for ergonomic considerations in the case of female users. So far, there has not been a practical implementation of these learnings and discoveries because it was a theoretical course. Overall, the tools seemed promising in terms of promoting the understanding of biases that the students were not aware of having and an interest in better understanding the implications of their work as designers and on how to improve it. Some areas of improvement for the tool were identified after its first practical use that Chiara will be iterating and developing soon.

Figure 4: My Gender Assumptions tool



6.2.8 **Political History in Canada course:** This introduction to the field, enabled 15 senior undergraduate students to understand the social and cultural dimensions of STEM and to undertake small research projects in the field. In turn, the results of their research on histories of design made its way to a presentation to the residents of a local Ottawa retirement home.

6.2.9 **Transdisciplinary design:** Through the collaboration of the PIs and Investigator of the GDS Program, their capacity, and understanding of what transdisciplinary design is and looks like evolved and developed throughout the duration of the GDS Program.

6.3 Policy and practice

The objective of the GDS Program was not to create policy. In some instances, the project teams may have made recommendations or reviewed or analysed policy documents during their research. What the GDS Program developed and delivered were new practices and processes, both within Carleton University and encouraged through the application and design of the awarded research projects. This new practice was the exploration and development of 'gendered design' in STEAM; emphasizing the arts and importance of user-led approaches in sectors that may not ordinarily include such methods.

The Program created new research management practices and the funding structure and framework was a pilot for IDRC. The Research Assistant arrangement within Carleton and the identified Sector Experts across departments were also a new practice. This output can be seen through the many research outputs created and designed specifically for the administration of the GDS Program. The Program brought together different departments to support the delivery of the GDS Program and be part of the exploratory research of gendered design in LMICs.

The practices of the GDS Program kept the southern projects at the forefront, with activities, tools, and program management structured and developed to support their research. It was iterative and responsive, rather than directive and top-down. A transdisciplinary approach to research emerged and was possible through the iterative and abductive practice inherent to design, a strategic design approach that was able to deal with complexity and an open approach to design.

The uniqueness of the Program brought together 20 problems to be explored that was specific to each location but sought to discover and provide collaborative working opportunities. The GDS Program examined the practice of interdisciplinary research and produce transdisciplinary knowledge across disciplines, fields, societal issues, and cultures. The project teams embraced this research practice and adapted where possible their research project, or at least considered, practices of research through design, human-centred and participatory design. These practices were also central in the framework of the GDS Program.

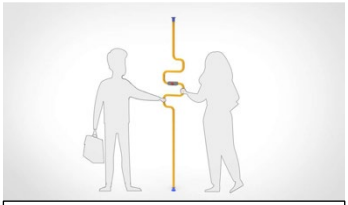
6.4 The 20 awarded project – Research, capacity building and policy and practice

Through the development, design and execution of the 20 awarded project teams, each have created their own research outputs, capacity building and in some instance policy and practice outputs. Our role was never to report on individually each of the undertakings and achievements of the 20 projects. Presented here is an overview of the 20 projects showing some of their activities, outputs and outcomes. A link to their page on the GDS is provided for further information (and more will be added).

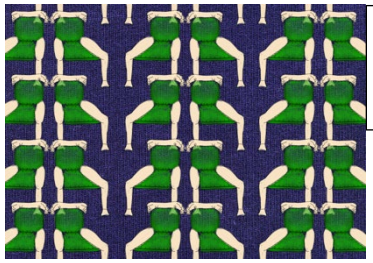
ID17

Improving the design of public transport based on women's experiences in Turkey	PI: Dr. Pinar Kaygan | Co-PI: Dr. Asuman Özgür Keysan | Middle East Technical University (METU)

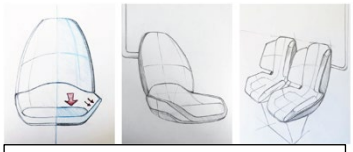
GDS: https://carleton.ca/gendesignsteam/projects/projects-in-asia/id-17/



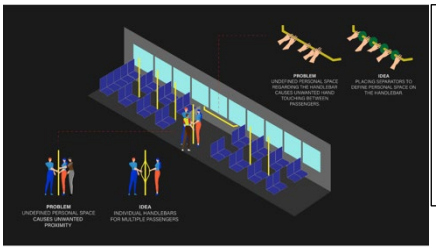
Curved bar forces passengers to hold onto a designated area creating space for everyone



A graphic fabric to spark the conversation of issues on public transit



Seat to prevent 'man-spreading'.

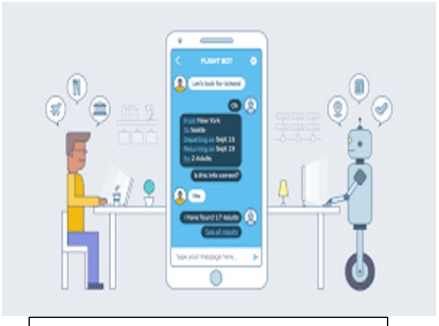


A design solution to reduce touching and increase personal space for women on public transport

ID33

Improving access to financial services for women in Ethiopia	PI: Dr. Getachew Hailemariam Mengesha | Co-PI: Dr. Elefelious Getachew & Dr. Moges Ayele | Addis Ababa University

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-africa/id-33-improving-access-to-financial-services-for-women-in-ethiopia/



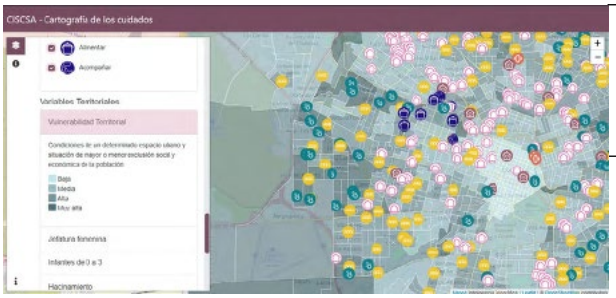
Graphic of the prototype Chatbot application that allows the user to easily access their accounts and other financial services.

Dr. Getachew Mengesha presenting the mobile application that will improve access to financial services for women in Ethiopia during a validation workshop, September 2021

ID37

Exploring urban childcare infrastructures to support women's autonomy in Argentina	PI: Professor Emerita Ana Maria Falú | Co-PI: Eva Colombo | Centro de Intercambio y Servicios Para el Cono Sur Argentina (CISCSA) - Ciudad Feminista

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-latin-america/id37-exploring-urban-childcare-infrastructures-to-support-womens-autonomy-in-argentina/



Interactive map "Cartographies of Care". Visit: https://mapee.com.ar/ciscsa/mapadelcuidado

Neighbour of Alberdi drawing the locations of urban care services she uses and mapping how she transits the city on a typical day of the week.

Collage of the closing activity organized in one of the neighbourhood centres with the women that participated in our study.

ID38

Designing support services for women experiencing workplace harassment in Pakistan	PI: Dr. Maryam Mustafa | Co-PI: Dr. Hadia Majid | Lahore University of Management Sciences (LUMS)

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-asia/id-38/

Cards were created and used during the discussions with the women participants.

Meeting of women during data collection.

Different colours represented (L to R): issues, solutions, barriers and goals

ID40

Assessing the impact of solar panels to improve energy access for women in rural Ghana	PI: Dr. Samuel Gyamfi | Co-PI: Dr. Danielle Sedegah & Dr. Eric Ofosu Antwi | University of Energy & Natural Resources

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-africa/id-40-in-ghana/

Research team members on a field visit to island communities.

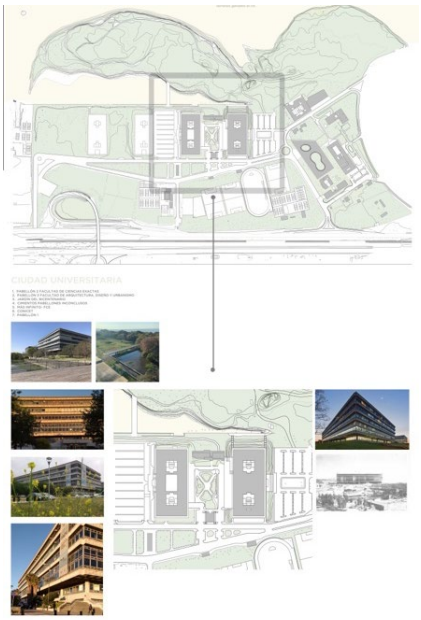
Atafiam Number 2 Island Community - community members welcoming research team.

ID41

Re/designing the University of Buenos Aires campus to be gender inclusive in Argentina	PI: Dr. Carolina Spataro | Co-PI: Professor Griselda Flesler | University of Buenos Aires (UBA)

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-latin-america/id41-re-designing-the-university-of-buenos-aires-campus-to-be-gender-inclusive-in-argentina/

Campus building map of University of Buenos Aires - Faculty of Design and Urbanism and Faculty of Exact and Natural Sciences.



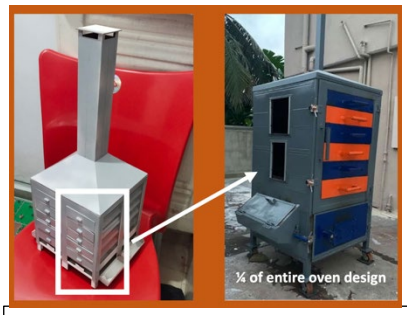
Technical drawings of the University of Buenos Aires campus.

ID47

Improving the design of upland fish drying technology for female fish vendors in Nigeria

PI: Dr. Uduakobong Aniebiat Okon | Co-PI: Mrs. Otu Ebeten Bassey | University of Uyo

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-africa/id-47-improving-the-design-of-upland-fish-drying-technology-for-female-fish-vendors-in-nigeria/



Prototype model and full-size working prototype.

PI interviewing freelance women fish vendors in Akwa Ibom State.

Model of the fish drying facility.

Unfinished prototype model; building in progress at the time it was reported.

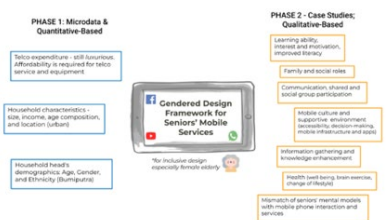
ID50

Designing mobile services for ageing women in Malaysia

PI: Ass. Prof. Dr KOO Ah Choo | Co-PI: Dr. Chui Yin Wong (Intel) | Dr Yvonne LEE (MMU) | Dr Lai Wan Teng (USM) | Hazwan Mat Din (UPM) | Multimedia University, Malaysia

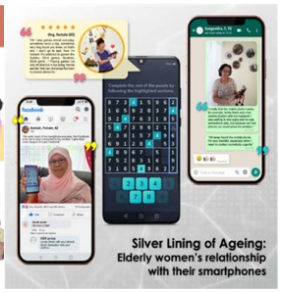
GDS: https://carleton.ca/gendesignsteam/projects/projects-in-asia/id-50/

The elderly population in Malaysia is adopting mobile technologies.



Creative work for 'Bisik' & 'Laung' (Whisper & Shout) exhibition event at MMU.

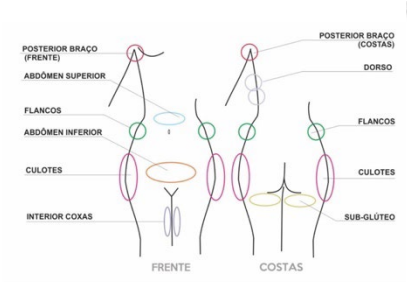
A gendered design framework for a more inclusive use of mobile services for seniors, particularly elderly females.

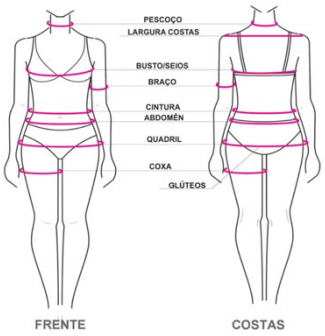


ID53

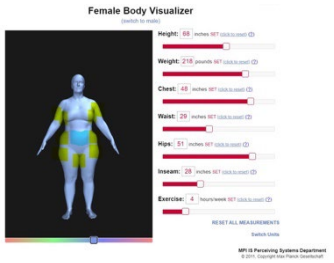
A case study of clothing design considerations of low-income,_ menopausal women in Brazil	PI: Érica Pereira das Neves | Co-PI: Leticia Nardoni Marteli, Luis Carlos Paschoarelli & Fausto Orsi Medo | Universidade Estadual Paulista (UNESP)

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-latin-america/id53-a-case-study-of-ergonomic-design-considerations-of-low-income-menopausal-women-in-brazil/





Images used as part of the survey conducted with middle-aged low-income women in Brazil about perceptions of their body.



Software used to visualize data.

ID57

Developing an alternative energy-sourced fish dryer to improve processing for small-scale female processors in Nigeria	PI: Dr. Kafayat Adetoun Fakoya | Co-PI: Adenike Omotunde Latunji Akintola, Ayo Jesutomi Abiodun-Solanke & Kafayat Oluwakemi Ajelara | Lagos State University

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-africa/id57-developing-a-hybrid-fish-dryer-to-improve-processing-for-small-scale-female-processors-in-nigeria/

Prototype of model kiln coal chamber.

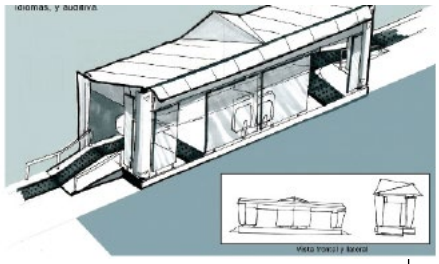
Early prototype of a hybrid solar-biomass fish dryer.

Other prototypes.

ID61

Developing innovative urban design strategies to combat gender violence in Mexico	PI: Dra. Erika Anastacia Rogel Villalba | Co-PI: Dr Leonardo Moreno & Dr Lourdes Ampudia | Universidad Autonoma de Ciudad Juarez

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-latin-america/id61-developing-innovative-urban-design-strategies-to-combat-gender-violence-in-mexico/



A proposal draft of a new bus stop design by Ariel Alonso de la Torre Ramos.

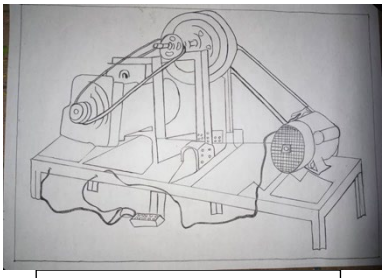
A poster by the project.

Stills from video educating on everyday sexism created by Pamela Marina Nevárez González and Erika Rogel Villalba.

ID65

Constructing an eco-friendly generator for low-income female artisans in Nigeria	PI: Ese Esther Oriarewo | Co-PI: Dr. Obokhai Kess Asikhia | Edo State Polytechnic, Usen

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-africa/id65-constructing-an-eco-friendly-generator-for-low-income-female-artisans-in-nigeria/



Paper sketch of the proposed fuel-less generator.

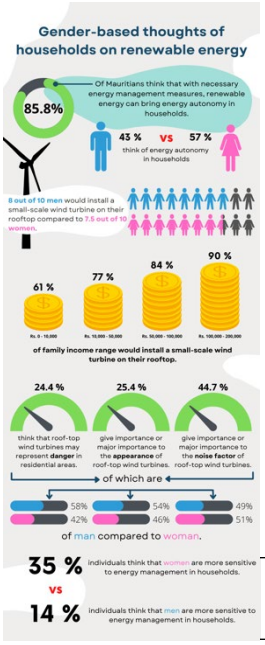
Data collection with female artisans.

Team photo.

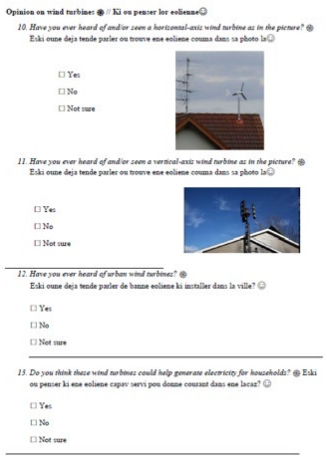
ID71

Developing small wind turbines with local women for domestic use in Mauritius	PI: Dr. M. Khalil Elahee | Co-PI: Dr. Abdel Khoodaruth | University of Mauritius

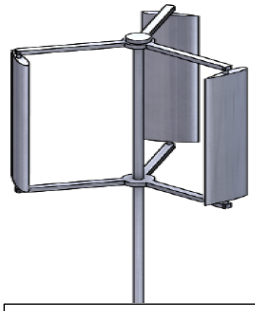
GDS: https://carleton.ca/gendesignsteam/projects/projects-in-africa/id71-developing-small-wind-turbines-with-local-women-for-domestic-use-in-mauritius/



Initial results from the household survey on renewable energy.



Example of the household survey with both English and Creole.



Vertical axis wind turbine.

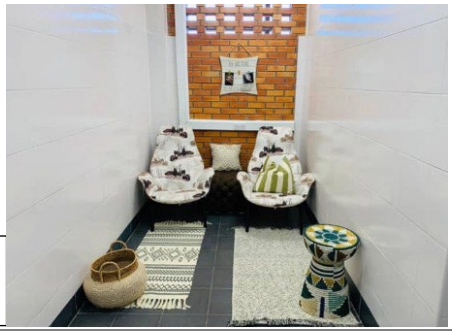
ID73

mproving the design process for housing and public spaces based on women's experiences in Rwanda	PI: Dr. Marie Chantal Cyulinyana | Co-PI: Mrs. Roselyne Ishimwe | University of Rwanda

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-africa/id73-2/

Image of hostel at University of Rwanda Campus where some improvements are still needed.

INES Ruhengeri campus grounds taken during the field visit.



I&M bank breastfeeding room one place looked at in field work

ID74

Improving transportation systems for women in Rwanda	PI: Dr. Didacienne Mukanyiligira | Co-PI: Mrs. Marie Grace Umumararungu | University of Rwanda

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-africa/id74-improving-transportation-systems-for-women-in-rwanda/

Buses are the main source of public transportation in Kigali City, Rwanda. Other public transport systems include motorcycles and bicycles.

Enumerators at a bus stop in Kigali City, Rwanda, conducting interviews.

Research team developing a training manual prior to collecting data in the field.

ID79

Modernizing the batik industry to improve income for women in Tanzania	PI: Dr. Pendo Nandiga Bigambo | Co-PI: Dr. Mbonea Mrango & Ms. Safina Kimbokota | University of Dar es Salaam

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-africa/id79-modernizing-the-batik-industry-to-improve-income-for-women-in-tanzania/

Participants displaying batik results after stamping and dyeing the fabric.

PI demonstrating standardized batik techniques by stamping patterns on to fabric.

Participants tying stamped batik in preparation for dyeing during workshop two.

Dyeing batik using natural dye extracted from turmeric root

ID80

Reimagining urban territories for women's autonomy in Colombia

PI: Associate Prof. Adriana María Botero Vélez | Co-PI: Santiago Forero Lloreda & Andrea Herrera Jaramillo | Fundación Universidad de Bogotá Jorge Tadeo Lozano

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-latin-america/id80-reimagining-urban-territories-for-womens-autonomy-in-colombia/

Community members cooking together in the community space and kitchen they are constructing in the neighbourhood of Bélen, Bogotá.

Planning designs and concept of the community kitchen.

Logo designed by project team - celebrating the power in the feminine, and cooking as a space of power and resistance. Their 'Filosfia delantal' series (Apron philosophy), is a celebration of home cooking knowledge and the power in it.

ID88

Developing new construction techniques based on the work of women in Brazil

PI: Professor Diana Helene Ramos | Co-PI: Amanda Azevedo | Universidade Federal de Alagoas (FAU/UFAL)

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-latin-america/id88-developing-new-construction-techniques-based-on-the-work-of-women-in-brazil/

Pana - a feminist technological tool, containing instructions on the ancestral technologies that have been central to the territories where these women inhabit.

Making of the collective map in Serra da Misericórdia Workshop.

Serra da Misericórdia Workshop.

Pictograms in Quilombo Santa Rosa dos Prestos.

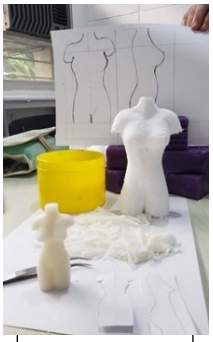
ID91

Studying the use of artifacts to rebuild self-image and identity among female breast cancer survivors in Brazil

PI: Prof. Débora Tatiana Ferro Ramos | Co-PI: Dr Kátia Medeiros de Araújo & Dr Rosiane Pereira Alves | Fundação de Apoio ao Desenvolvimento da Universidade Federal de Pernambuco (FADE-UFPE)

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-latin-america/id91-studying-the-use-of-artifacts-to-rebuild-self-image-and-identity-among-female-breast-cancer-survivors-in-brazil/

Personal artifacts are an outlet to strengthen self-image and rebuild personal identity. Artifacts can be scarfs, self-portraits, painting, photography and sculpturing.



Modelling workshop with soap.

Sample of the booklet created for the photography workshop participants.

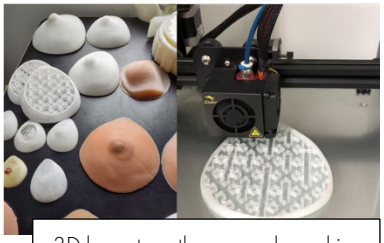
Picture taken by survivor following a photography workshop.

IDA

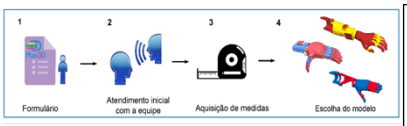
3D-printed prostheses to support low-income female survivors of domestic violence, accidents or cancer treatment in Brazil

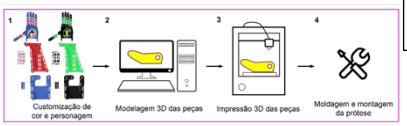
PI: Dr. Maria Elizete Kunkel | Co-PI: Professor Luciana Ferreira & Professor Felipe Moura (UEL) | Federal University of São Paulo (UNIFESP)

GDS: https://carleton.ca/gendesignsteam/projects/projects-in-latin-america/ida-3d-printed-prostheses-to-support-female-survivors-of-domestic-violence-accidents-or-cancer-treatment-in-brazil/

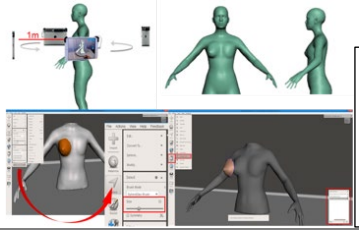


3D breast protheses made and in production using a 3D printer.





Upper limb protheses protocol production phases



3D mould modelling protocol for breast protheses.

Upper limb fitting and occupational therapy.

7. Program outcomes

This section is organised along the categories of the IDRC guidelines, which are in bold in the text, but for one exception as we question the use of the word '**behaviour**' in the main language of IDRC's objectives and assessment. The word can easily suggest that people are not responsible for their own actions. It might lend to patronizing biases especially inappropriate in programs that address inequalities between North and South. The word '**action**', which appears as a secondary word in the template, replaces it altogether in this report. At the very least, IDRC should provide a definition of 'behaviour' that firmly avoids these pitfalls. We will not report on 'changes in behaviour' because this is not how we looked at the people with whom we worked.

A reminder on the nature of the GDS Program: The main outcomes of the **Program** are summarized here. As some of the outcomes of the Program are seen through the individual outcomes of the 20 research **projects**, examples from the projects have been used throughout the discussion; exclusion of a project does not indicate a lack of outcomes in the theme discussed.

The same question arises when reporting on 'research users' in section 7.1.3. They could be communities using the research of LMIC researchers, or LMIC researchers using the common research of the Program.

Table 9: Summary of outcomes

7.1 Main outcomes of the Program. Contributions to:	
7.1.1	Scientific, research, or knowledge innovation
7.1.1.1	The degree to which working about gender meant paying more attention to and build knowledge about nearby communities was unexpected, not the fact of it, but the degree
7.1.1.2	The value for STEM teams to integrate SSH scholars to facilitate the process of addressing gender questions, a premise of the Program, was confirmed, systematically
7.1.1.3	The need to include the body of methods and thoughts linked to "Indigenous and traditional knowledge", another premise of the Program, emerged recurrently, and was confirmed, systematically
7.1.1.4	The peculiar juxtaposition of design and history as the core disciplines of the core team made for an original geometry of transdiciplinarity
7.1.1.5	At the project level, some findings made a notable intellectual contribution
7.1.2	Changes in capacities, actions, or relationships of researchers, networks, or research institutions
7.1.2.1	Many times, the relationships facilitated by this Program came with little or no prior knowledge between scholars who became partners within institutions, between LMIC institutions, and between Carleton and the project institutions. The material and managerial support of the Program sustained these relations for three years
7.1.2.2	In LMIC institutions, the Program procured legitimacy to women scholars as researchers, managers of research teams, and trainers of emerging women scholars, in front of colleagues
7.1.2.3	The Program procured legitimacy and strength to the leadership of LMIC women scholars in front of nearby communities. It also increased the visibility of local communities studied by these scholars.
7.1.2.4	At Carleton, the University's role was to manage the grant and contractual agreements with the awarded projects, this is a new type of responsibility not normally seen in the University system and elevates our transdisciplinary capacity through the support of the Program Coordinator
7.1.2.5	The Program had a direct impact on Carleton's teaching in ways that seem to have taken roots
7.1.2.6	Project teams who were already well versed in some aspects of gendered design advanced their respective ways of working by strengthening other aspects of their work

7.1.3	Changes in capacities, actions, or relationships of research users or those affected by the research process or findings - By including projects in design systems, the Program created spaces and channels conducive to explorations of what gendered design means and to testing and developing methods, for project teams and across the GDS network
7.1.4	Policy influence - The Program produced a repository of gendered-based ways of influencing STEM policies on different scales, at different rhythms
7.1.5	Technology development, adoption, and adaptation - The Program produced a repository of gendered informed artifacts and of knowledge to support the production of gendered informed products, available for further reflection, emulation, demonstration, and adaptation
7.1.6	Changes in the state of economic, social, health, political, or environmental conditions - Several projects that aimed at direct and durable gendered-informed interventions in specific spaces welcomed the time and resource to figure out the shape this would take
7.2 Learning about approaches or broad design elements for conducting research, building capacity, or influencing policy or practice in the field and circumstances of the project. Problems arising, and changes in orientation. Aspects of project design particularly important to the degree of success of the project	
7.2.1	The iterative method was an "aspect of project design particularly important to the degree of success of the project"
7.2.2	A small scale and a congenial structure fostered and maintained relations of proximity
7.2.3	The nimbleness of the Program's architecture freed researchers to do their work
7.2.4	An open definition of gender
7.2.5	An open definition of prototyping
7.2.6	Experimenting with reporting and documenting tools
7.2.7	Providing state of the art means to disseminate and access data
7.3 Contributions to these outcomes and lessons drawn from the experience ("derived learning")	
7.3.1	Piloting collaborative and gender sensitive approaches amongst researchers mirrored what the Program encouraged between researchers and communities; this was a mutually reinforcing process
7.3.2	The appetite for gendered design in STEAM is large & programs to address it should function at a small scale

7.1 1Main outcomes of the Program. Contributions to:

7.1.1 Scientific, research, or knowledge innovation

A reminder on GDS terminology. We chose from the beginning to steer away from the word '**innovation**' because it seems to discourage ideas of research that consider the realisation of what there is as equally valuable endeavours.

When scientific, research or knowledge innovation and realisations are concerned, the Program achieved its goal "to develop definitions of gendered design built upon local context and knowledge", and to "support and enhance Southern and Indigenous academic voices, approaches, and cultures" in the following ways.

7.1.1.1 The degree to which working about gender meant paying more attention to - and build knowledge about - nearby communities was unexpected, not the fact of it, but the degree

Case study – ID33 | How the notion of "gender" opens doors between STEM research and communities

"*The Program gave me a new insight about Gendered Design. Furthermore, I have got the opportunity to dive deeper into Ethiopian history and culture and have managed to gain sound understanding how gender based social strata and occupational classifications evolved over time.*" | ID33, Africa, PI

The team from Ethiopia researched improving access to financial services for women and explored how best financial literacy and knowledge would be delivered to women. The study opened an understanding to reduce stereotypes developed over the years regarding women's level of participation in science and technology. The involvement of women researchers helped to articulate the challenges women face, clarify misconceptions, and demystify the view regarding women and computer system development. Further, the PI on this project was male and being part of the GDS Program allowed him to honour and support women's practices he knew or remembered where he didn't have the chance to do so before.

Learn more about the work of ID33.

7.1.1.2 The value for STEM teams to integrate SSH scholars to facilitate the process of addressing gender questions, a premise of the Program, was confirmed, systematically

Case study – ID50 | How SSH scholars bring subtle and varied methods to the study of communities by STEM researchers

"*The research Programme has strategically and systematically involved transdisciplinary research teams... Methodologically, that most projects have opted qualitative research...to allow the researchers establish dialogues on the complicated issues. The above two key points are so important that [this] has influenced my view on gendered research and design works and has set as guidance to my research works and directions.*" | ID50, Asia, PI

The team from Malaysia explored the usage and behaviour of elderly females with telecommunications to better design mobile services for them. From the start, this team showed a true commitment to learn about 'gendered design' and expand their understanding of what this means through intersectionality. From where they started, with little awareness about intersectional theory and how this could be applied to data analysis, to where they are now, with greater awareness of what it is and how it has been useful to their research, is important to recognise.

This team experimented with additional methods to complement an online interview. The team incorporated service design methods such as mobile walkthroughs, mobile-based diaries, and used a strength-based approach of utilising a familiar social media platform (WhatsApp) for further engagement with participants. Their ability to work through the problem (online and distant interviews for safety) and modify a set of methods used in design fields for user research that aided interaction and data collection that still enabled rich understandings.

The outcomes evidence that older women in Malaysia are proactive in using their smartphones for socializing, learning, supporting family and maintaining well-being. This is remarkable given the complexity of the digital landscape, together with the way services and devices that were never designed for them in the first place. This raises important questions around how senior women, proactively using their smartphones, can teach, encourage, and lead design teams towards exciting futures.

Learn more about the work of ID50.

7.1.1.3 The need to include the body of methods and thoughts linked to "Indigenous and traditional knowledge", another premise of the Program, emerged recurrently, and was confirmed, systematically

The localised ideas of gender made for different gender analysis tools: in the case of ID73 Improving the gendered design in housing and public spaces based on women's experiences in Rwanda, a more liberal idea of gender presided over the work "to identify how gender can be implemented in the design of spaces", which made for a more quantitative approach, whereas in ID88 "Technologies for another form of construction", worked from the experiences by women from popular movements, and with more qualitative methods.

Often, the projects were not trying to replace existing practices or create something new but build upon the indigenous and traditional knowledge to better support gendered dimensions.

> "*What is more fundamental is our indigenous knowledge. That the women in this Program in gender design have brought what would have been forgotten practices have been brought back.*" | Emmanuel Mutungi, Regional Expert Africa

Case study – ID79 | The power of validating Indigenous knowledge and leadership of women in nearby communities

The project from Tanzania examined modernizing the batik industry to improve income for women. The project team dynamics demonstrated strong female leadership, who were able to build upon existing relationships with the community during their research. The project team took traditional techniques and practices and developed these with the community and the women directly involved in the batik industry to create better designs, dyes, processes and ultimately products that would have greater successes at market. The local women were part of the design process from the start and the methodology is a clear demonstration of involvement of the end-user – the women in the batik industry.

Learn more about the work of ID79.

7.1.1.4 The peculiar juxtaposition of design and history as the core disciplines of the core team made for an original geometry of transdisciplinarity

In this configuration, the existence of common ways of thinking and working, of shared ethical practices, became increasingly apparent. This led to a need to make explicit what had brought us together in the first place, to see how much of this was disciplinary, how much was occasioned by the theme of gender, how was derived from our initial experience in drawing mutually beneficial Programs between Carleton University and countries of the LMICS and our willingness to further these, and how much might have come from peculiar ways each of us already had of working within our respective disciplines. This original contribution was recognised by a publication in a high-level publication in design research.

7.1.1.5 At the project level, some findings made notable intellectual contributions

The work of ID41 'Re/designing the University of Buenos Aires campus to be gender inclusive in Argentina', for instance, received very positive responses, because the issue of spatiality is not generally taken as a priority in institutional gender Programs and policies. This is among publics in universities of Argentina and around the world. The method developed by ID80 'Reimagining urban territories for women's autonomy in Colombia', became the object of a documentary produced as part of the project.

7.1.2 Changes in behaviour, capacities, actions, or relationships of researchers, networks, or research institutions

The program achieved its goal to "mobilize a strong collaboration between academics and communities in the Northern and Southern hemispheres", and to "promote the dissemination of Southern research results" in the following ways.

7.1.2.1 Many times, the relationships facilitated by this Program came with little or no prior knowledge between scholars who became partners within LMIC institutions, between LMIC institutions, and between Carleton and the project institutions. The material and managerial support of the Program sustained these relations for three years.

> *"We're taking people that didn't know each other and getting them to interact. And when you put large groups of people together, there can be new relationships and opportunities that get exposed...how do we facilitate that type of work, especially when we're talking about things that are cross-cultural?... Just like interdisciplinary, transdisciplinary work, when you put people from disparate places together, interesting things happen because they're looking at things from a different perspective."* | Adrian Chan, Sector Expert IDA and ID91

For some, this relationship will remain:

> *"More importantly, being part of the GDS Program enlarged my network, I got to meet different people from different fields which helped broaden my horizon. The shared knowledge and ideas went a long in enlarging my research skills."* | ID65, Africa, PI.

Others now wish that other initiatives help grow the network:

> *''Wouldn't it be great to pull all these folks together, in person, so that they could meet each other and exchange knowledge and learning...to create an ongoing network...to support and exchange and be in touch with whatever happens next from these projects."* | Jill Wigle, Sector Expert ID61 and ID80

7.1.2.2 In LMIC institutions, the Program procured legitimacy to women scholars as researchers, managers of research teams, and trainers of emerging women scholars, in front of colleagues

Through the awarding of the grant, female project leaders were empowered to select their project team. This built upon the existing knowledge of the female researchers but also supported the development of other female researchers in the field sharing their expertise. The female leaders had autonomy with the direction of their research and made decisions in response to challenges and their understanding of what gendered design could mean and impact their project, enhancing the place of gender as a legitimate topic of inquiry within a STEM unit in universities and between STEM and SSH units contributed to this movement.

> *"Personally, the lessons learned are immeasurable. As a woman, as a researcher, as a professional, as a teacher, this process meant the reaffirmation of political and ethical convictions of the role of education in the creation of conditions for a more humane, loving, respectful and peaceful world with social justice."* | ID80, Latin America, PI

The recognition of parallel ways of working further reinforced women scholars' legitimacy:

Case study – ID41 and ID73 | Similarities of research focus but in different contexts/countries/disciplines

Two projects, one in Argentina and the other in Rwanda, one lead by a physicist the other by a social scientist, looked at the gendered perspectives of the built environment for educational and public places and housing respectively. The inclusive needs of women in these environments spanning two different continents were uncovered through ethnographic data collection. Both projects implemented data collection through surveys to uncover learning on perceptions and understandings of gendered washroom requirements and lactation rooms for example. The researchers in both countries impacted public policy and architectural planning through the GDS Program.

Learn more about the work of ID41 and ID73.

For many, the three years of networking have had the permanent effect of increasing capacity. For instance, Raquel Noronha, Regional Expert for Latin America, is in early stage of planning with project partners from Brazil, Argentina, Mexico, and Colombia to create a space for future discussions on gender and design.

7.1.2.3 In LMIC institutions, the Program procured legitimacy and strength to women scholars' leadership in front of nearby communities

Growth of leadership was also seen with the relationships developed with the local communities that were key contributors to - and beneficiaries of - the research taking place. Building and exercising community relationship skills and working with stakeholders both within and outside their department and even with external local bodies and authorities, grounded opportunities for continuing their work and future opportunities. Running ID37, 'Exploring urban care infrastructures to support women's autonomy in Argentina', for instance created a strong connection to Red Pueblo Alberdi, a powerful neighbourhood network that includes neighbourhoods' centres, academic areas, and groups of the National University of Córdoba (UNC). At times, a project made for the strengthening of community organizations amongst themselves, as in the instance of the development of a "Feminzine" (Feminine + zine) by residents of the Belén neighbourhood to communicate the project's goals, philosophy, and progress accompanied by the project of ID80.

7.1.2.4 At Carleton, the University's role was to manage the grant and contractual agreements with the awarded projects, a new type of responsibility not normally seen in the University system which elevated our transdisciplinary capacity

The Program achieved its goal to 'create opportunities for researchers across the Carleton campus to work together with a common goal and do interdisciplinary work' in durable ways.

> *"I would love to have a Carleton Gendered Design group...More conversations between the STEMS and the STEAMS which I think is lacking at Carleton..."* | Katie Bonier, Sector Expert ID37 and ID41

> *"...we're talking about gender design through very participatory, interdisciplinary methods, moving from STEM to STEAM..."* | Jill Wigle, Sector Expert ID61 and ID80

7.1.2.5 The Program had a direct impact on Carleton's teaching in ways that seem to have taken roots

The connections and the materials of the Program had direct outputs on teaching at Carleton: First, a Master course on 'Gender and Design' for design, architecture and history students (see 5.2.2) relied, for half of its content, on materials created by four experts, connected with the GDS Program, 12 students explored ways of

designing structures and processes. Second, feminist theories in design to counter-act modernist and positivist approaches informing current socio-cultural and environmental issues were central to the 'My gender assumptions' project led by Chiara Del Gaudio with students from Carleton University. Third, critical thinking about the relationship between gender and making was promoted through the new course syllabus on 'Science, Technology, Engineering and Mathematics (STEM) in the History of Canadian Society and Policy' (see 6.1.3) where students acquired knowledge about the history of STEM in Canada and practiced working collaboratively and bringing together the transnational nature of knowledge production.

Interviews conducted by Dominique Marshall with the Sector Experts highlighted more general outcomes in pedagogical practices. Participation in the Program has led faculty members of Carleton University to consider the importance of instilling concepts of gendered design and of merging social sciences with STEM fields in teaching, towards a more inclusive pedagogical practice.

> *"One of the things I learnt from this project is that this concept of a gendered design has to be implemented into our engineering curricula in the undergraduate school from the first day...this is the time to bring in these aspects of social sciences more into our engineering undergraduate Programmes so that our graduates will be trained with this sort of understanding and with this point of view."* | Fred Afagh, Sector Expert ID65 and ID71

The internal network of 20 graduate Research Assistants acted as a linchpin between many sites of the program, and as a training ground in gendered practices, transnational research management, research assessment, production of knowledge mobilisation materials, event organisations, digital humanities, the ethics of decolonised North South relations.

7.1.2.6 Project teams who were already well versed in some aspects of gendered design advanced their respective ways of working by strengthening other aspects of their work

This happened especially around the activities of the LabTwo sessions where key concepts underpinning the GDS Program were learned, explored, and constructed collaboratively: key concepts around design practice, participatory design, the local community, and end-users, as well as the conditions placed on participants. It encouraged new ways of thinking amongst the project teams about what factors affect the outcomes of the process of their research.

In this case, a team experienced in inclusive design learned to deal better with gender work:

> *"GDS project has opened a research path for me on gendered design in the perspective of mobile services and applications, especially for elderly females. I have a strong interest in inclusive design, and the current GDS project has given me opportunities to research on gendered design for inclusivity..."* | ID50, Asia, PI

In this case, a team experienced in design for all realized how deeply engineering practices and teaching could change to address gender inequality meaningfully:

> *"...during the various Lab Workshops training I discovered that most product designs are male biased, which is unfavourable to most female who are also end users of the product, therefore, product designs ought to be gender inclusive...I have come to understand that there ought to be gender equality in design of industrial products to break the stereotypical fallacies that encourages bias of designs towards men."* | ID65, Africa, PI

In this case a team who had designed a project specifically for this Program came to see how a gendered approach would enrich other projects of theirs:

> *"...the most significant impact of the project is actually on the awareness of gender centred inclusion in the subsequent projects that I have embarked on. I am naturally inclined to incorporate gender perspective to my work. This awareness has culminated in strengthening of our research group to do further awareness work of Gender centred design in our locality even after the conclusion of the project."* | ID65, Africa, Co-PI

In this case, a team convinced of the necessity of questioning universal homogenous approaches, received material, intellectual and collegial support to carry on a long-awaited project:

> *"thanks to the support of the GDS Program and Network, we could contribute to our main goal: to challenge the neutral approach of urban planning, as well as the relevance to include women in their diversities from a feminist approach."* | ID37, Latin America, PI

7.1.3 Changes in capacities, actions, or relationships of research users or those affected by the research process or findings

From the start, the involvement of Carleton University was intended to be not only for the management of grants and contractual agreements with the awarded projects, but for the creation of opportunities to share expertise and experiences, and for engaging directly with - and supporting - projects.

By including projects in design systems, the Program created spaces that were conducive for the project teams and across the GDS network to explore what gendered design means and test and develop design and methods. These were safe spaces, for iterative thinking, where there was no 'right or wrong' answer. Supported the uncertainty.

The unique intellectual contribution of Carleton University in managing the GDS Program built upon - and went beyond - the institution's administrative responsibilities. The Program has generated the creation of - and experimentation with - new channels for knowledge exchange and network building, such as the GDS Bulletin, and new ways of working and exchanging across disciplines, for example through the Labs. It also provided scholars of different experiences and backgrounds with an opportunity for sharing, growing, and mobilizing. The resulting framework encouraging these new synergies was developed and honed during the Program.

7.1.4 Policy influence (e.g., expanded policy capacities of researchers; broadening policy horizons of policymakers; and affecting policy regimes)

The Program represented a way to pilot the potential of design thinking in questions pertaining to women in STEM for IDRC, and potentially for the policy makers in IDRC's audience. The Program also aimed at piloting one way to work with a university by giving a team of scholars the authority to distribute grants in LMICs to see how much an approach could be fostered, appropriated, and inscribed in new academic relationships. In both cases, we took full advantage of the freedom we were granted to map the extent and the limits of what was possible, and to make things happen in these spaces. We think that the experiment was successful in both counts, and that the discrete lessons listed in this report will make their way back to this audience.

The Program's also acted as an observatory of ways of influencing policies at many different scales, from neighborhood to a university campus or a national government. At the project level, some teams, such as ID71

'Developing small wind turbines with local women for domestic use in Mauritius' aimed directly at making policy recommendations. Some represented a means to address a failed public policy with new means, with the hypothesis the absence of systematic gender consideration had been responsible for the problem, such as ID40 'Assessing the impact of solar panels to improve energy access for solar panels in Ghana'. Processes of influencing policies were also designed with an open mind. In a more indirect way, ID74, 'Improving transportation systems for women in Rwanda' prepared direct materials to "raise awareness among stakeholders and policymakers in the transport sector that address the needs of gender design for vulnerable populations such as pregnant women, elderly citizens, children, and people with disabilities." ID37, 'Exploring urban care infrastructures to support women's autonomy in Argentina' has already exerted "policy influence at various scales, from local conventions with municipal government, national interest in a critical perspective on the Federal Map of Care, to international influence with work with both UN habitat and UN Women". ID71 was able to include fact-based gender considerations in a Position Paper from proposed by a team including the Principal Investigator, which made recommendations towards achieving 60% renewable energy in power generation by 2030. ID40 will return to the communities to reflect on the causes of the phenomena they observed before making recommendations.

7.1.5 Technology development, adoption, and adaptation

The 10 projects of the second stream were directly committed to prototype a technology. At the end of the Program, they had generated artifacts at various stages of adoption and adaptation. The Program's website now acts as a repository of these gendered informed artifacts available for further reflection, emulation, demonstration, and adaptation. One contribution of ID61 'Developing innovative urban design strategies to combat gender violence in Mexico', for instance, is a series of "designs combatting gendered violence in Ciudad Juárez in various forms (including sexism in the workplace or among peers, danger to women on public transportation or in the street" exhibited on the GDS portal.

The potential for future work is already apparent to Carleton's sector expert in transportation:

> *"I'd be very interested in working with [the projects] on future travel surveys or travel studies, future analysis of the data that they've collected...I think that would be excellent."* | Adam Weiss, Sector Expert, ID17 and ID74

At the project level, in some cases, such as ID57 'Developing a hybrid fish dryer to improve processing for small-scale female processors in Lagos, Nigeria', a wider adoption seems imminent, pending only in an ability to produce and market the prototype, given local acceptance and interest: "Based on sensory evaluation, fish processors exhibited willingness to try briquettes as alternative biomass source to firewood. The briquette-smoked fish was indistinguishable from charcoal and firewood, which was a major factor in breaking the cultural barrier to using alternative biomass sources."

In others, the artifacts are already produced and disseminated, such as the "'Pana', a feminist technological tool, containing instructions on the ancestral technologies that have been central to the territories where these women inhabit", produced by ID88, 'Technologies for another form of construction: experiences by women from popular movements'.

Several projects of the first stream of case studies have succeeded in making available new knowledge to support the production of gendered informed products. Such is the case of ID53 'A case study of clothing design considerations of low-income, menopausal women in Brazil' whose finding about the relations menopausal

women have with their clothes, await uses by clothes makers.

7.1.6 Changes in the state of economic, social, health, political, or environmental conditions

The Program was host to several projects that aimed at a direct and durable gendered informed intervention in a specific space and welcomed the time and resources offered by GDS to figure out the shape these interventions would take. The team of ID80 'Reimagining urban territories for women's autonomy in Colombia' ended up equipping the Belén neighbourhood with a community kitchen and a community garden for use by residents. The exhibition, booklets, and photography workshops of ID91 'Studying the use of artifacts to rebuild self-image and identity among female breast cancer survivors in Brazil' have already allowed "women to explore strategies to rebuild their self-image and break taboos related to breasts and breast cancer." There, as in several other cases, the intervention contributed directly to the goal of the Program to "increase the visibility of local communities studied by these scholars". Indirectly, a sustainable way of reinforcing women's autonomy was born.

Case study – ID80 | Community autonomy and collaboration

The research team in Colombia set to explore reimagining urban territories for women's autonomy. From the start the project team collaborate with members of the local women's community group. Their involvement was pivotal from the beginning. The collaborative workshops included input from the community and academics from the university. The team also utilized social media to showcase the project and the kitchen build, which was driven by the knowledge and expertise of the community members.

"[We must] see the kitchen not as something about and for women, but rather as a stage upon which care takes forms as a human value that can be practised by persons of every gender." ID80 | Latin America, PI

Learn more about the work of ID80.

7.2 Learning about approaches or broad design elements for conducting research, building capacity, or influencing policy or practice in the field and circumstances of the project. Problems arising, and changes in orientation. Aspects of project design particularly important to the degree of success of the project.

A reminder about the nature of the GDS Program: "Approaches or broad design elements for conducting research, building capacity or influencing … practice" represented the very focus of the GDS Program. Therefore, this question pertains to the entirety of the Program.

7.2.1 The iterative method was an 'aspect of project design particularly important to the degree of success of the project'

We cannot speak of "Changes of orientation" resulting from "arising problems" as isolated events. This dynamic was at the very core of our way of working. It permeated all what we did. In this way, the question is answered across the report's outcomes section.

Because of the complexity of coordinating the work of 20 projects from as many universities and articulating their distinct endeavors with the work of eight colleagues, 20 graduate students, because of the faith IDRC colleagues placed from the start in the potential for participatory design methods, the Program was based, from the beginning, on a process of constant assessment of what was at stake and designing and redesigning accordingly. This iterative approach, which takes "changes" for granted, goes against the very idea of calling the next situation a

"problem", and the next transformation a "change".

Existing and acquired iterative habits might have helped the Program adapt to the new conditions of Covid-19 and to support the projects in doing the same.

7.2.2 A small scale and a congenial structure fostered and maintained relations of proximity

At first, the small scale of the Program was dictated by the importance of having the chance to involve researchers who had never, or rarely, done this before. With hindsight, we see that personalized, responsive, and informed relationships between the core team and the 20 projects remained desirable long after the Program was on its way. Yoko Akama, for instance, timed her virtual visits to the project teams of the Asian region differently, especially because of the varied nature of their respective engagements with the notion of gender which appeared in their periodic reports. Many project leaders spontaneously provided positive comments about this proximity at many stages of the Program. We think that it went a long way to ensure the productive and imaginative nature of all outcomes discussed in this section.

At the stage of the Expressions of Interest, reward came from offering people who expressed an interest time and resources to flesh out their project. And, further on, to make space for redesigning aspects the initial project. LabOne's activities were fundamental in developing theoretical and critical thinking around research and design processes and the integration of gendered design for the awarded research projects. For some projects, the knowledge sharing, and workshop activities created an opportunity for the projects to reflect on their initial proposals and adjust improve the research, design, or gender dimensions for their research. Some of the feedback received after LabOne showed that for some researchers the activities lead them to review their research proposal and look for ways to enhance the gender aspect of their research project.

Case study – ID38 | Taking the time to deeply include design methods

"We find that a shift to moving away from a tangible prototype to focus on an intangible design process was immensely useful for our team to not just understand design but also move away from thinking of objects of 'use'." | ID38, Asia, PI

The research team from Pakistan sought to understand the potentiality of technology to support women with gaining equitable access to employment opportunities and safe spaces. One of the most significant undertakings of this project is the way their participatory design methodology evolved through critical reflexivity and being sensitive to women's precarious conditions and experiences. Recognition should be given to the way they have designed ways of engagement by lowering barriers to access, for example, places of trust, safety, and comfort away from work or home for conversations that used methods that enabled non-verbal expressions and sensitivity to intangible emotions. This is clearly demonstrated in the creation of the cards to act as visual cues during the conversation, influenced by one of the team members child's games, to use with the women to help discover their issues, solutions, barriers, and goals.

Learn more about the work of ID38.

7.2.3 The nimbleness of the Program's architecture freed researchers to do their work

The readiness ("stubbornness" might be a better word) to overcome an extraordinary amount of financial and organizational barriers between countries and universities to make these projects possible and lighten the work of the researchers themselves on the administrative side to allow them to do just that, research. The unique

intellectual contribution and role of Carleton University in managing the GDS Program extended the reach of activities and discoveries beyond the institution's administrative responsibilities. The management and successful delivery of the GDS Program is an outcome itself, demonstrating the importance of transdisciplinary collaboration and what gendered design can mean in different fields and different locations. This was discussed in detail in the paper written and presented at the DRS conference (see sections 5.3.10 and 5.4.1). The role of the Program Coordinator was crucial for the running, maintenance, and delivery of the GDS Program. Having a dedicated role, with a unique job description, to maintain communication with the project teams to keep them informed on Program activities and developments, be a central point of contact for any queries and create and adapt frameworks and tools that did not previously exist, allowed the GDS Program to move forward and keep momentum. The project management style needed to be flexible, creative, and intuitive to meet the needs of the GDS Program as it itself went through transformations

7.2.4 An open definition of gender

Crucial to the interest of the teams was the decision to leave the definitions of "gender" open and to design the Program as a process of collective discovery of - and experimentation with - many ways to approach the notion, and to delineate the social questions that it pertains to describe. The Program engaged STEM researchers otherwise suspicious of the notion of gender, or some who had not thought that they could legitimately make it their own, to experiment with the heuristic potential of gendered work.

> *"Challenging in the sense that it's a really new area of research...one thing we realised immediately is that this 'gendered design' is something that we didn't know what it was...We knew there was something like that, but we didn't know what were its implications, what were the dimensions, what were the challenges..."* | Fred Afagh, Sector Expert ID65 and ID71

Opportunities to work with the notion of gender coming from watching others, calling for the advice of the regional expert, receiving feedback at many moments of the project, or participating in workshops, made methods, potential results, and advantages, readily available.

> *"Prior to GDS Program before LabOne, we did not have much [of an] idea on gender studies and also [learnt to] focus our design research on gendered design."* | Asia, Project team member

For some, the gain seems to have left a permanent imprint:

> *"It was and still an amazing experience working on this project. It is my first experience on a main gendered project, my confidence in introducing gender into subsequent approach of design has improved tremendously; I am more gender responsive in my research and other ventures such as outreaches, teachings among others. It was a good time with women from different walk of life and areas showing the same resilience through similar challenges. It was intriguing seeing them embrace the initiative and contributing to the success of the project. We gained different and balanced perspectives while working on the project than we set out with."* |ID57, Africa, Co-PI

7.2.5 An open definition of prototyping

Working with an open definition of the process of prototyping enables explorations of its full potentials LabTwo | Session Two was an opportunity for project teams to reflect, adjust, learn, and share critical ways of thinking about prototyping, and about the place and nature of prototyping in the generation of knowledge. Human-centered

approaches and engaging with local communities were key themes of this session; these aspects of prototyping, also described as "interventions", involve ask communities directly to try things out, to see not only how they worked technologically, but also how human nature and cultural and social norms colour the use of a technology. They are a crucial dimension of iterative and participatory design. In this case, the realization occurred that intangible steps of the research process could be prototyped:

> *"A redefinition of prototyping to include other than physical prototypes was highly relevant both as an innovative approach but also to integrate Gender issues in the design process."* | ID71, Africa, PI

In this case, the realization occurred that many dimension of social life could be encompassed in prototyping process:

> *"I got to learn that prototyping goes beyond construction but that it also includes physical interaction with people, in this context, the end users and/or stakeholders."* | ID65, Africa, PI

In this case, the realization occurred that the inclusion of a community could occur at many stages of the prototyping process in research which pertains to be responsive to the community it is meant to serve and about whom knowledge is deficient:

> *"One of the key learning that I personally discovered that had impact on the design and prototyping phases of the project was given attention to the feedbacks from the female folks. These feedbacks would normally not have been taken into consideration in most of the phases of the project."* | ID65, Africa, Co-PI

In this case, a systematic inclusion of women of the community was planned from the start in the prototyping:

Case study – ID57 | Prototyping as a comprehensive and constant approach

"One important learning was the engagement of the end users in the construction of the prototype drum oven and in the smoking of fish with biomass briquettes compared to charcoal and fuel wood in which they were involved. These were the game changers and helped concretize the results and outcomes." | ID57, Africa, PI

The team from Nigeria researched ways to develop improved fish-drying processes. Fish drying in Nigeria is an occupation mostly held by rural women. In this project women were consulted in the field and their input influenced the understanding of the human centred issues were a priority to the engineering and scientific phases of the work. The project reinforced the local women's opinions and knowledge of the fish drying process and how the quality of the taste of the fish cannot be a secondary issue. The researchers used their scientific and engineering approaches together with these insights to prioritize outcomes important to the local communities. The prototyping process was important in engaging with the communities through the ability to create new types of renewable energy briquets and new cleaner burning fish drying ovens. Prototypes of the fish dryers were built and tested by the fish dryers to make sure that the final product is acceptable in terms of the factors important to them, such as renewable energy sources, less smoky production and a product that tastes as good as the original products produced. The project demonstrated the importance of buy-in and contribution from the local community and how prototyping can help. Learn more about the work of ID57.

7.2.6 Experimenting with reporting and documenting tools

Identifying, creating, encouraging, and supporting research tools that allow a variety of forms of investigating, reporting, and communicating enabled varied explorations of the potential of gendered design.

The presence in the Program of anthropologists and historians, established and emergent, brought a wealth of possible approaches and methods of documenting to the reflection about possible ways to collect and organise the generated by the projects. These experimentations about documenting led to a large series of digital stories and shaped the peculiar way to organise the final science portal.

As a result, the legacy of the Program and projects is made of a mixed bag of forms, from traditional academic papers to products of knowledge mobilization, durable social institutions, traces of co-produced designs, and a curated repository of experiences in LMICs, a combination that pays justice to their overall approach. Few of the final outputs were predetermined, and their usefulness became apparent from the facts and needs of the Program.

> *"One consideration is how a format like a 'report' may inadvertently hinder communicating key insights and learning. In other words, the conformity of the report writing (in English), formatting, requirements etc., can be a barrier for some...It is something I think about often, to question what dominant structures (from funders and universities) are often placed upon researchers to report and legitimate findings? In turn, such 'norms' of reports invites a particular 'reading' of work that emphasises rational, logical argumentation (suited to western thinking), over other important aspects (such as emotion ('sentipensar'), intangible phenomena, more-than-human conditions etc.). I assume these latter aspects feature strongly in many of the teams' work."* | Yoko Akama, RE for Asia

7.2.7 Providing state of the art means to disseminate and access data

Throughout the GDS Program, actions were taken to increase the visibility of the research conducted by the scholars in the South and the local communities involved in their work. We promoted the dissemination of the research results through various channels of communication that offered increased accessibility. These disseminations supported, and enhanced the Southern and Indigenous academic voices, approaches, and cultures that formed the GDS Program. These products could also be shared by the projects with their respective institutions, and they led to greater credibility, reach, and impact. They validated early on gendered work and leadership that needed support. Besides, they were an integral part of the wider system of regular and responsive support described below. Implementing processes of knowledge mobilization and open access was key to the GDS present and future successes.

The award announcement and GDS Bulletin were the first main activities that promoted and raised the profile of the GDS Program, the research teams, and their affiliated institutes. Thereafter, the Bulletin - and related social media activity - quickly became a vital means of promoting and covering the work of the projects as it developed. Collectively, their news raised awareness around gendered design.

> *"Reading the bulletins, also opened our minds and we got to know what other groups are working on and what kind of challenges they accounted for and how they tackled them."* |ID73, Africa, PI

Later, the closing event of the GDS Program was the occasion to launch highly effective communication tools to disseminate the outcomes of the project teams, including a short video and poster for each. The launch of a collective GDS portal and repository, to host these tools and other archives of the adventure, together with the she social media campaign accompanying the closing event, provided a final and comprehensive way to highlight the amazing work achieved across the 20 projects. Creating an individual project page for each of the 20 teams was a key project decision to ensure that all research partners had representation and that the traces of their projects and findings would have a sustainable digital presence going forward.

The core team has ensured that access to the knowledge produced by the GDS Program will continue after the Program completion. The GDS website will be sustainably supported as a Carleton University hosted webpage. The website includes a Resource Library where the GDS Bulletins are available together with other resources. Similarly, the Bulletins were uploaded in the open access journal platform OJS to promote easy and widespread availability.

As part of the partners in the GDS initiative, Carleton's History Department, which includes the Carleton Centre for Public History (CCPH) as well as the first cohorts of Public History PhDs in Canada, is committed to working to ensure that the insightful findings of the 20 projects will be findable and accessible for academic researchers, community investigators, and a range of publics. These aspects are paramount to knowledge mobilization and are key aspects of meaningful digital sustainability. At the time of writing, the GDS team is still investigating was to upload additional materials from the GDS Program (project teams final reports, Miro boards describing research processes and interview materials) to the GDS website.

7.3 Contributions to these outcomes and lessons drawn from the experience ("derived learning")

7.3.1 Piloting collaborative and gender sensitive approaches amongst researchers in Ottawa and abroad mirrored what the Project were doing with communities. This was a mutually reinforcing process.

For instance, the core team learned lessons on the management and running of virtual events that were later applied to Lab activities. This included working in smaller group settings, creating opportunities for cross-regional collaboration, language barriers, and time zone challenges. In turn, several projects readily adopted the digital platform Miro used by the core team to organize the Lab activities to work with their respective communities when collections of data and designing exercises in social imagination.

7.3.2 The appetite for gendered design in STEAM is large & programs to address it should function at a small scale.

The Program has signaled the remarkable demand in universities of LMICs for support of projects to "improve women's lives" which STEM researchers want and are ready to imagine. But the scale of the demand does not seem to call for a heavy/massive Program in the future. Given the care it took to accompany the projects in their inception and early stages, answering and supporting this demand/readiness with impersonal, generalized, homogenous formulas would discourage the very kind of ventures which gendered approach demands. This tension should also inform any attempt to grow existing projects in ways that respect the fragile and complex nature of the kind of interdisciplinary/community/transnational relations involved in the Program.

8. Overall assessment and recommendations

Introduction

For three years, the GDS program was able to gather and keep together a considerable number of scholars in 24 institutions of higher education, most of them in LMICs, to work at one common goal: discovering the potential of gendered design for STEM disciplines. That we/they did so without any major problem represents a considerable achievement. There were too many variables at play to determine why this happened, but we can safely say that the initial notion, brought to us by IDRC workers Claire Thompson and Luc Mougeot, and informed by their own long-lasting practices, has so far been confirmed by the program's attainments.

From the start, the notion of gender would have attracted scholars, women, and men, committed to study aspects of society linked to the maintenance and the reproduction of life, activities often of an informal and sustained nature. Besides, the notion of design in its "participatory" versions, would have attracted people already open to the prospect of working with the communities they serve, and ready to reflect critically on the mechanics of inclusion. Finally, the geographical plan of IDRC, to put a northern university in relation with LMICs universities, and to foster in relations between all in equitable fashion, would have met the determination of scholars wishing to collaborate along these axis and directions. Amongst the original aspects of the program were other ideas developed with IDRC employees: to confer to the same team the autonomy to manage the funds and to design the program, within large and exploratory parameters; to place design, history, anthropology, and institutional management at the centre of a multiform structure; to plan for a relatively small and short-lived experiment; to associate the program's activities, wherever they were, with teaching graduate students.

What follows is a modest attempt to reflect on features of this combination of skills, professional practices, and ethos, resolve and mutual respect, likely to have helped the GDS program to be productive. It follows that the suggestions for further work which conclude this technical report will be tentative: in more ways than one, the recommendations can be seen as ways to further and grow relations described in this FTR which have, so far, served "development" well.

Comments on the usefulness in achieving the project's objectives through any partnerships with Canadian or other researchers, with Canadian or other capacity or policy-oriented organizations, and with other donors

For Carleton University and the IDRC, this program represented an experiment with a new way of working together that went beyond the typical funding relationship scenario afforded to universities. The university's role and obligations went well beyond its traditional functions to coordinate 20 international partners, their own projects, and teams, both at local universities and on the ground, in their own communities. Carleton had to create, promote, and support this international network, both within and outside of its own organization, while reporting to IDRC along the way. Building the network included finding the right Regional Experts outside of Carleton, Sector Experts within Carleton, and seeking the support of Research Assistants from across campus. This involvement went beyond a typical multi-disciplinary and inter-disciplinary approach, as we have articulated in detail in our paper presented at the 2022 DRS Conference: it contributed to the knowledge of doing complex transdisciplinary research across STEAM fields and disciplines. We now have much momentum, and new ways of working.

Contributions of the program to development

We see the GDS Program as an effort to achieve a more decolonized approach towards sustainable development through transdisciplinary collaboration between researchers in developed and LMIC countries. From that viewpoint it is useful to reflect on the usefulness of this collaboration through the lens of the United Nations 17 Sustainable Development Goals (SDG) that form an "urgent call for action by all countries - developed and developing - in a global partnership". The GDS Program demonstrates a new and productive approach that promotes and fosters human centered innovation in STEAM Fields as outlined in Goal #9 "Industry, Innovation and Infrastructure", while also empowering and supporting women researchers and local organizations using the RtD approach by contributing to Goal #5 "Gender Equality". The 20 projects themselves addressed these goals with real life scenarios while addressing a multitude of other SDG's, including Goal #3 "Good Health and Well-Being", Goal #7 "Affordable Clean Energy", Goal #11 "Sustainable Cities and Communities" and Goal #14 "Life Below Water", as illustrated in the Outcomes and Activities sections of this report.

What GDS would do differently as a result of this experience, and what general and useful lessons can be derived for improving future projects

In terms of logistical scope, this project was demanding and would not have been possible without the aid of our fulltime Project Coordinator. It included formulating an international Call for Proposals, evaluating and shortlisting and ultimately awarding the proposals, followed by the management of Contracts with the awarded Projects, including sending payments and collecting reports at scheduled intervals. This work was also complicated by different time zones spanning 14 hours and language barriers and of course ultimately the Covid 19 Pandemic, and the initial design approach helped program and projects to reimagine their work.

Value and importance of the project relative to the investment of time, effort, and funding

It should be noted that the University as an institutional system is not optimized to do this work and a lot of learning and capacity for doing this type of work has increased at Carleton and probably at the partnering institutions as well over the 3-year period. Future work would benefit from an increase in staffing support for departments on campus, including Research Accounting and Procurement, which are not set up to support this level of complexity and as such needed extra work on behalf of all those involved to make things go smoothly, and free researchers to research. The not so straightforward situations that arose in sending money to other universities internationally added stress on university staff, at Carleton and across the program, as did the Covid-19 Pandemic. It should be noted that departments of financial support at universities are already stretched in terms of the amount of work they do, and the high turnover of their employees.

The Principal Investigators and researchers also contributed in-kind time more than by orders of magnitude of what was initially expected in the Agreement with IDRC. We conclude that overall, the level of material and personal support that was necessary was greatly underestimated at the start of the program and needs to be re-evaluated in case such a role would be undertaken by the university in the future.

Other recommendations to IDRC

We find ourselves at the end of the road financially with IDRC. There is no obvious form of funding available to us that would directly support the continuation of the program through other tri-council funding. The program is too unique and simply does not fit the funding parameters of either SSHRC or NSERC. One might argue that the

point of this program is to allow the independent projects to build capacity and obtain funding on their own, but that is not necessarily a reasonable expectation in their countries, nor does it acknowledge that the program and network in itself has value and promotes a new approach to STEM research in general. Academics rely on funding from agencies to conduct research and as such silo-oriented STEM funding leaves little room for our broader communal and gendered involvement, opting instead for laboratory approaches. This in fact becomes a conundrum and paradox for sustainable development work and so whereas we contribute towards the UN SDG's, the program itself is ultimately not sustainable.

In the very short term, aware of this challenge, we have created standalone artefacts such as the website, Program Bulletins, and paper at the DRS conference, that will survive and hopefully make available ways of working, case studies and data that can be used by researchers in the future. It does not fully replace or substitute the value that lies in the program. Maintaining and collaborating requires support and as such this is the best we can do.

In the middle term, and for this reason, we are conducting a final activity on GDS futures, that goes beyond the scope of this report, to understand this problem from the point of view of the funded Projects, as well as from the point of view of our Carleton researchers, Regional Experts. Ideally, the result might assist IDRC in making the overall approach more sustainable. This is because we suspect that, in the longer term, some ways or working piloted by GDS might have much to contribute.

Epilogue: a note on 'Development Diplomacy'[13]

Current efforts by international agencies to address climate and biodiversity emergencies are seriously compromised by many factors, including the following: the agencies are driven by Western and Northern countries, which quickly loses them the support of many Southern countries; these agencies' assessments of the problems of climate change and depleting ecosystems are based on Western science, which costs them legitimacy amongst Southern publics and leaders; the solutions these international agencies envisage are biased in favour of Northern countries (even when they are not unduly influenced by Northern economic self-interests and secret lobbies) which weakens their claims to universality. In parallel, boards of experts working for these agencies (International Panel on Climate Change (IPCC), Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)) are overwhelmingly composed of men, white people, and STEM experts. The relationship between these structures and the problems listed above are many.

When genuine efforts to overcome these injustices are attempted, other difficulties appears: Indigenous knowledges, women's knowledges, and their bearers, are often localised and therefore hard to put in conversation with international experts and knowledge; in the other direction, efforts to communicate the knowledge international climate and biodiversity experts use to support their urgent calls to action are not sufficient; finding ways out of these blockages seems to take too much time for what these experts estimate it will take to avoid catastrophes.

If avenues to resolve these blockages involve putting in conversation localised and universal ways of speaking and working, Indigenous and western knowledges, communities and large-scale public institutions, then women in STEM and SSH scholars, from Northern and LMIC countries alike, might have a joint role to play: as attentive,

[13] This reflection and its title are informed by the work of historian Ruth Morgan on the history of the IPCC: "Climate Diplomacy and its Histories: Inside the IPCC", paper given at the Shannon Lectures in History 2023, Carleton University, February 6, 2023. Director of the Centre for Environmental History at the Australian National University, Morgan was a Lead Author on the Water chapter in Working Group II of the Intergovernmental Panel on Climate Change's Assessment Report 6, released in August 2021.

nimble, respectful and trusted builders of bridges; keepers and fixers of channels; tracers of facts and ideas; translators, compilers and exhibitors of knowledge; keepers of pace and time. Furthermore, for these processes to work among teams of experts small and large, for "inclusion" to become more than an afterthought, partnerships have to involve many generations of scholars; and some people have to devote their full and constant attention to the processes themselves. Existing institutions of higher education, with their anchor in their respective places, their commitment to multiple disciplines, their acknowledged role in the transmission knowledge between generations of experts, their ambition to participate in transnational networks of knowledge-making, might be well placed to make space for such partnerships, help clear existing routes to better international efforts, and invent new ones.

Annexes

Annex A – Original program schedule in proposal

Annex B – Proposed program schedule revisions

Annex C – Announcement information on awarded projects

Annex D – LabOne Information pack

Annex E – LabOne Workshop activities

Annex F – Project update report

Annex G – LabTwo | Session One information pack

Annex H – Budget change request form template

Annex I – GDS Interview with project leads guide

Annex J – LabTwo | Session Two information pack

Annex K – Final report template for awarded project teams

Annex L – Project poster template example

Annex M – GDS Program poster

Annex N – GDS Program closing event invitation and schedule

Annex O – Closing event campaign on Instagram

Annex P – Proposal for using remaining funds

Annex Q – My gender assumptions tool

Annex A– Original program schedule in proposal

Phase 1: Proposal and terms of call formally agreed upon

- December 20, 2018: Concept note/ proposal drafted by Carleton University personnel and submitted to the IDRC for review.
- January 18, 2019: Terms of project confirmed and agreed upon by Carleton University and IDRC.
- April 1, 2019: IDRC grant awarded to Carleton University administrators for the development, writing and dissemination of the calls.

Phase 2: Gathering support and expertise / formulating the call

- April 1 - April 30, 2019: Project website designed by RAs in consultation with Co-PIs and PC, outlining the goals of the project and to be updated as project develops.
- May 4, 2019: Project website officially launched.
- May / June 2019: Inception workshop at Carleton University to gather potential experts who could provide support for the program. Experts from the University of Ottawa, the Canada Science and Technology Museum will be invited, alongside those associated with current hubs of expertise such as GenderInSite and Stanford's ongoing project dedicated to "Gendered Innovations", either in person or via teleconference. In addition, any existing/ potential Southern partners and collaborators will also be invited to attend via teleconference. The idea of "gendered innovations" will be presented by Londa Schiebinger and other international experts ideally, as well as the Co-PI's Bjarki Hallgrimsson and Dominique Marshall, the PC (Beth Robertson), Chiara Del Gaudio, Carleton International and IDRC. Questions and feedback on the project will be received at this time and implemented wherever possible, meaning that some of the deadlines and terms of the project may need to be revised.
- July 2 - August 30, 2019: Ongoing conversation with potential contributors at Carleton, and other Southern partners, of which a finalized list of experts committed to the project to be confirmed by August 30. Throughout this time, the wording of two, dual calls to be drawn up, revised and finalized, in consultation with internal Carleton and other Canadian experts, Gender and Regional Advisors and other Southern partners and the IDRC, as well as a template for each.

Phase 3: Call dissemination

- August 1, 2019: Two calls are disseminated through not only Carleton's and IDRC's established international networks, but also by reaching out to other established networks, including GenderInSITE, the networks our Regional Experts are involved in, such as the Africa Design Network, Design Indaba, the Royal Academy of Engineering, the Institute of Electrical and Electronic Engineers (IEEE), UNESCO's Women in Science ongoing project and others, including the Gendered Innovations network through Stanford University, requesting an expression of interest (described in no more than 1000 words) from institutions of higher learning and/or others operating in LMICs, with a potential accompanying webinar to more fully explain the project to those who may be interested:
    - Call No. 1: One call will request potential applicants to propose case studies and/or narratives (only) of past/ historical experiences that have the potential to contribute to a deeper understanding of past successes and failures in regards to 'gendered innovation' in order to provide meaningful guidance for contemporary designers, while also positively encouraging women to engage in gendered innovations.
    - Call No. 2: Another call will request applicants to propose a combined case study and prototype design project. In this situation, the case study will serve to provide the necessary research before developing a specific prototype design that will help address a specific challenge, issue, technical or knowledge gap for a given community in LMICs. After the design process, applicants will also

be required to complete their case study, by meaningfully reflecting upon the process of innovation and the results obtained.

- September 27, 2019: Deadline for all expressions of interest to be received by Carleton University administrators.

Phase 4: Expressions of interest and proposal reviews

- September 30 - October 25, 2019: Expressions of interest reviewed by program committee (including IDRC) in strategic consultation with sector experts from Carleton and possibly other partnering Canadian institutions, Gender and Regional Advisors, in addition to other external Southern partners with relevant expertise. Letters to potential applicants chosen to move forward are drawn up.
- October 28, 2019: Letters sent out asking for formal proposal from LMIC applicants selected (up to 30). Selected LMIC applicants also to receive relevant proposal templates for case-studies (only) and case-studies/ prototype design projects.
- December 6, 2019: Deadline to receive all formal proposals. Proposals to be reviewed and organized by program committee (including IDRC) according to field of expertise, which are then disseminated to relevant experts who have agreed to review and vet proposals. These experts are allotted funds to pay for a temporary graduate research assistant to help them with this process (with international students prioritized).
- January 24, 2020: Review process completed and letters to applicants drawn up.
- January 27, 2020: Chosen applicants notified and money is allocated - amount depending on the funds necessary. Partnerships are formed between applicants and Carleton faculty and graduate research assistants who initially reviewed the project and possibly others, ideally combining both experts in STEM and Humanities/Social Sciences fields, to carry out the given case study (only) or case study/ design project.
- May 4 - 15, 2020: A series of webinars and virtual teleconferences between representative(s) of teams selected from LMIC countries for either case study or case study/ design project, and faculty and graduate students from Carleton, partnering Canadian Institutions and Gender and Regional Advisors, to receive gender training, share insights, guidance and feedback, as well as (virtually) meet with fellow applicants involved with the project to discuss and workshop their ideas.
- November 27, 2020: Deadline for the completion of case studies and case studies/design projects, and resulting report, including production of a prototype per project/design.

Phase 5: Workshop and finalization of case studies

- December 9 - 11, 2020: Regional workshops organized to gather LMIC representatives to showcase and discuss case studies (only) and case studies/designs, while brainstorming how case studies associated with design project to be finalized that includes relevant insights and results pertaining to gendered innovation.
- April 2, 2021: Deadline for the finalization of case studies that includes meaningful reflection on the design challenge and resulting new product or process created by the applicants involved.
- May 7, 2021: Case studies/narratives and designs to be showcased in an exhibition / galleria to take place in Ottawa (or another location) alongside the launch of a public science portal of virtual exhibits for the purpose of further research dissemination, which are to be designed by LMIC applicants in collaboration with selected graduate student researchers and/or postgraduates of the MA in Public History program and or Ph.D. in History program of Carleton University.
- May 10 - December 17, 2021: Following the exhibition of projects, applicants can opt to receive (virtual) coaching on writing, and submit their case studies/narratives and design process to be ideally published in a special issue of an appropriate academic journal that is open access and with an international reach.

- December 17, 2021 - March 31, 2022: The completion date of the project when a collaboratively-written synthesis paper between Carleton and other Canadian sector experts, graduate students, Gender and Regional Advisors and LMIC applicants, detailing the process of the project, lessons learned, insights gained and future directions, to be submitted to the IDRC and potentially incorporated within the public science portal of virtual exhibitions. During this phase the final technical and financial reports will also be produced.
- Research expenses will cease from end of March 2022, and the project final technical and financial reports will be due by 30 April 2022.

Annex B – Proposed program schedule revisions

April 2020 onwards (Year 1)

MAY 2020

Final decision making on program awards

MAY-JUNE 2020

Gender & Design seminar course

JUNE 2020

Applicant informed about decision on awarding

AUGUST 2020

Contracts start date

OCTOBER 2020

Lab One hosted remotely

NOVEMBER 2020

Research projects and fieldwork starts

NOVEMBER 2020

Website/portal launched

MAY 2021

Lab Two hosted remotely

NOVEMBER 2021

Projects completed

DECEMBER 2021

Lab Three hosted locally

MAY 2022

Lab Four hosted at Carleton University & presentation of final projects

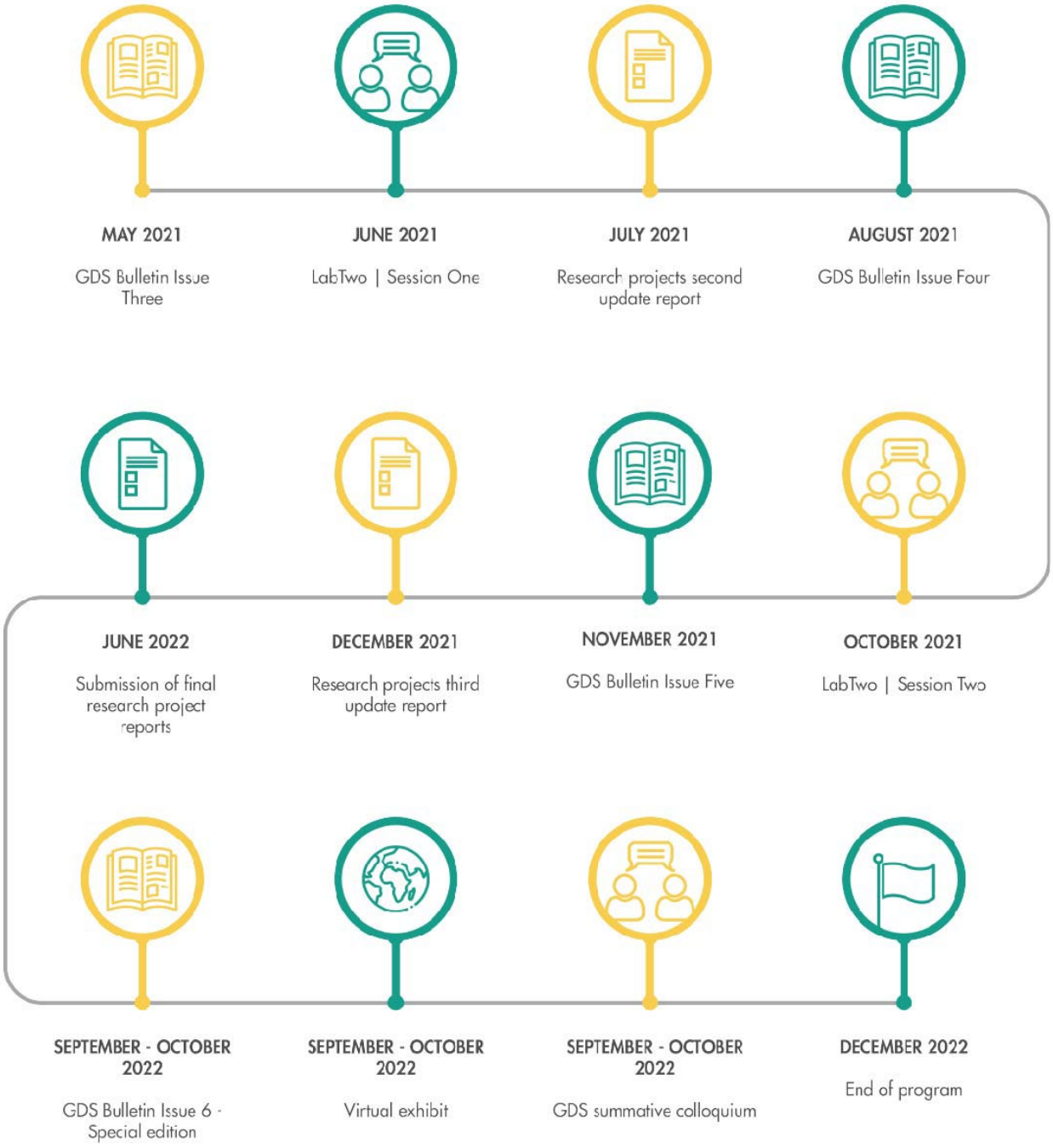
MAY 2022

Launch of virtual exhibition

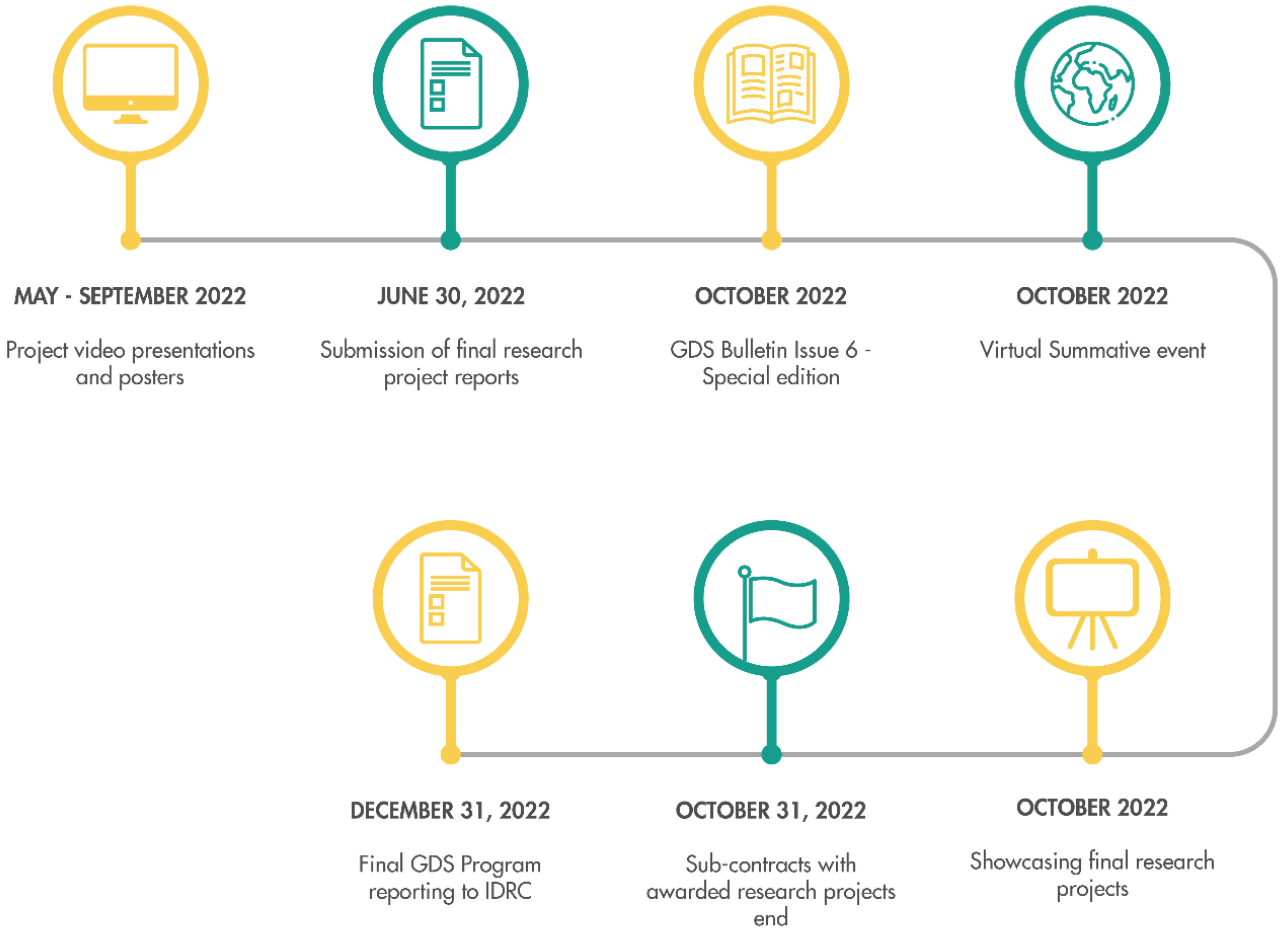
JUNE 2022

End of the program

Proposed schedule of activities, April 2021 to December 2022 (Year 2)



Proposed schedule of activities, April 2022 to December 2022 (Year 3)



Annex C – Announcement information on awarded projects

Carleton UNIVERSITY

GENDERED DESIGN IN STEAM

Gendered Design in STEAM (GDS) in Lower- and Middle-income Countries (LMIC)

Science, Technology, Engineering, Arts and Mathematics

IDRC | CRDI

International Development Research Centre
Centre de recherches pour le développement international

Canada

The overall objective of the GDS program is:

GENDERED DESIGN IN STEAM

To build capacity for research, design and dissemination of gendered innovations in Science, Technology, Engineering, the Arts and Mathematics (STEAM), addressing challenges predominantly faced by women in low- and middle-income countries (LMICs).

Responding to gaps in gendered design and innovation research, the GDS program aims to:

- connect, expand and enhance the community of experts and innovators in gendered design, particularly in LMICs;
- support LMIC researchers in conducting research case studies on current and past gendered innovations, and in designing gendered projects, driven by local interests ; and
- make gender challenges in the design of technologies and processes more visible to researchers, designers and innovators, particularly in LMICs.

Gendered design as a growing field of knowledge seeks to:

GENDERED DESIGN IN STEAM

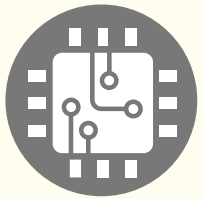
- identify and overcome gender bias from the knowledge base of a broad spectrum of fields that practice design processes;
- identify, support and promote socially and culturally aware approaches to design and development that can foster more equitable relationships, interactions and dynamics;
- ensure new products and processes are effective and inclusive, from their research phases to their initial applications, and onward.

Gendered design processes bring diverse perspectives, which reshapes how we identify design challenges, the solutions to these challenges, as well as the reach of their benefits.

STEAM

Science is a knowledge discipline that uses experiential observations as a method for evaluating the validity of the information. Different branches of science include chemistry, physics and biology.

Mathematics is an area of study that uses deductive reasoning, abstraction, and logic in a quantifiable manner to understand the world. It can range from statistics to geometry.



Technology is a crosscutting area where development of tools through specific techniques, practices and processes occur. Technology may be applied to various sectors, including medicine, where biotechnology such as vaccines are used. Other examples include wind turbines in the renewable energy sector.

The **Art** domain is concentrated on expressions of creativity found in human cultures and societies through skills and imagination in order to produce objects, environments, and experiences. Major constituents of the arts include visual arts, literature, and performing arts.

Engineering is a discipline focused on the design and construction of machines, buildings, and other structures, and can include, for example, bridges, tunnels, and vehicles.

GENDERED DESIGN IN STEAM

Infrastructure is the physical systems of a business, region, or nation. For instance, transportation systems, communication networks, sewage, water, and electric systems are all examples of infrastructure.

Built environment & housing encompasses places and spaces created or modified by people to serve their needs for accommodation, organisation and representation. It covers architecture, landscaping, housing, public space and access to resources, such as a proximity to grocery stores.

Renewable energy sector is focused on deriving energy from natural processes that are replenished at a rate that is equal to, or faster than, the rate at which they are consumed. There are various forms of renewable energy, including wind energy, solar, and hydropower.

Manufacturing sector engages in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. It is most commonly applied to industrial design, in which raw materials are transformed into finished goods on a large scale. Examples of manufactured goods include aircraft parts, household appliances and handicrafts.

Transport & mobility deals with the movement of people and products locally as well as internationally. It links people to jobs, delivers products to consumers, and connects regions and communities to each other and to international markets. It serves and attracts domestic and international trade. Examples include railroads, shipping and public transport.

Accessibility refers to the design of products, services, and/or environments so it is usable and accessible for people with disabilities and those who face, for example, financial or class barriers. Examples can include assistive technologies on websites, street design for wheelchair users and improving access to services that are usually unattainable in current systems.

GENDERED
DESIGN IN
STEAM

Carleton University awards 20 grants

The 20 selected GDS research teams come from Africa, Asia, and Latin America.

The teams work in a variety of fields that practice design processes, but they share a common goal:

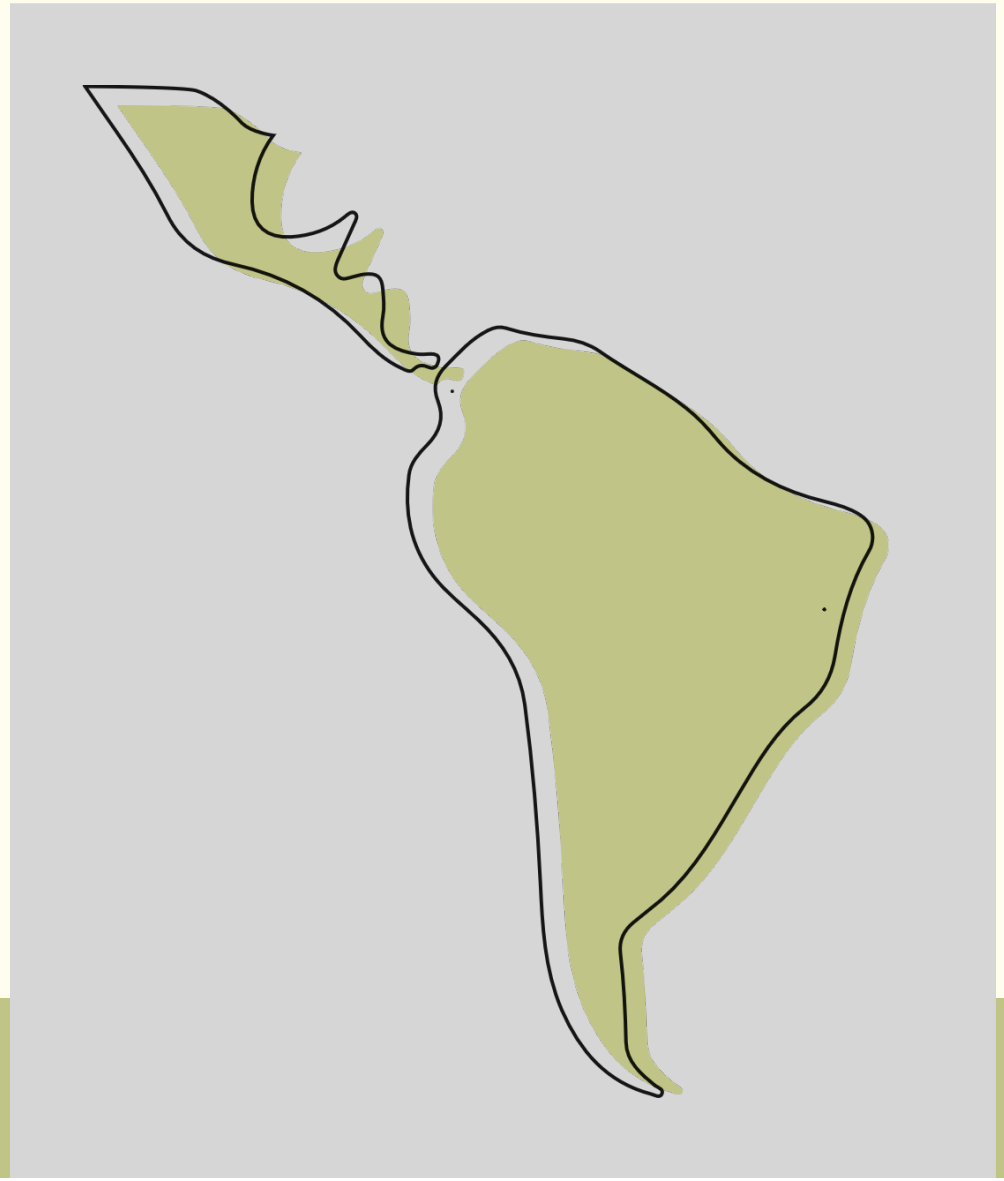
to identify and overcome gender bias and tackle issues especially affecting women in lower- and middle-income countries.

GENDERED DESIGN IN STEAM

The GDS Program is funded by the International Development Research Centre (IDRC)

IDRC | CRDI
International Development Research Centre
Centre de recherches pour le développement international

Canada



LATIN AMERICA

GENDERED DESIGN IN STEAM

- Centro de Intercambio y Servicios Para el Cono Sur Argentina (CISCSA) – Ciudad Feminista, **Argentina**
- Universidad de Buenos Aires (UBA), **Argentina**
- Universidade Estadual Paulista (UNESP), **Brazil**
- Universidad Autónoma de Ciudad Juárez (UACJ), **Mexico**
- Universidad de Bogotá Jorge Tadeo Lozano (UTADEO), **Colombia**
- Universidade Federal de Alagoas (FAU/UFAL), **Brazil**
- Universidade Federal de Pernambuco (FADE-UFPE), **Brazil**
- Universidade Federal de São Paulo (UNIFESP), **Brazil**

Exploring urban childcare infrastructures to support women's autonomy in Argentina

ID37

Using the public childcare systems of Córdoba as a case study, this project will highlight the omission of women in urban planning and how this influences their daily lives. The study will produce qualitative maps and new research in order to argue for a feminist approach to urban planning. Cartography will be a tool to bring new arguments to the debate, while focusing specifically on how low-income women experience the public childcare infrastructures of Córdoba, in Argentina.

Primary investigator:
Professor Ana Falú

Co-Primary investigator:
Mgt. Eva Lia Colombo

Institute:
Centro de Intercambio y Servicios Para el Cono Sur Argentina (CISCSA) – Ciudad Feminista
www.ciscsa.org.ar

Location:
Córdoba, Argentina

Grant stream:
One – case study

GENDERED DESIGN IN STEAM

Re/designing the University of Buenos Aires campus to be gender inclusive in Argentina

ID41

This case study aims to develop a guideline for designing and redesigning university spaces to be more gender inclusive. The guideline will be based on user-feedback gathered through in-depth interviews, focus groups, field observation and surveys on the University of Buenos Aires campus. This information will be available for other educational institutions interested in implementing the guideline in order to create university spaces that are more accessible and gender inclusive.

Primary investigator:
Dr. Carolina Spataro

Co-Primary investigator:
Professor Griselda Flesler

Institute:
Universidad de Buenos Aires (UBA)
www.uba.ar

Location:
Buenos Aires, Argentina

Grant stream:
One – case study

GENDERED DESIGN IN STEAM

A case study of ergonomic design considerations of low-income, menopausal women in Brazil

ID53

This case study aims to produce usability standards of clothing for low-income women going through the menopause in Brazil. The researchers will conduct interviews to better understand the bodily changes, behaviour, and emotions of menopausal women in order to develop clothing design guidelines that promote security and comfort.

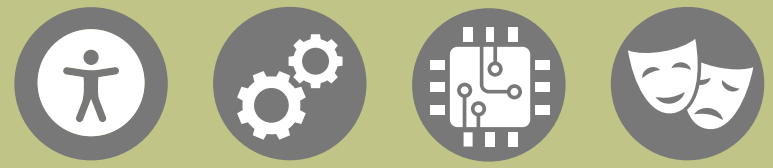
Primary investigator:
Érica Neves

Co-Primary investigator:
Titular Professor Luis Carlos Paschoarelli

Institute:
Universidade Estadual Paulista, (UNESP)
www2.unesp.br

Location:
São Paulo, Brazil

Grant stream:
One – case study



GENDERED DESIGN IN STEAM

Developing innovative urban design strategies to combat gender violence in Mexico

ID61

This research project will study the impact of urban design on gendered violence by adopting innovative, interdisciplinary strategies in urban public spaces in Ciudad Juárez in Mexico. Communication and collaboration between academics, key stakeholders in civil society, educational institutions, and government will allow for a more thorough understanding of gender-based violence in urban public spaces from a local perspective. A seminar involving an interdisciplinary group of collaborators will serve to contextualize how urban design has negatively impacted women and children in Ciudad Juárez. A prototype designed to help prevent gender violence will be created.

Primary investigator:
Dr. Erika Anastacia Rogel Villalba

Co-Primary investigators:
Dr. Leonardo Moreno
Dra. Lourdes Ampudia

Institute:
Universidad Autónoma de Ciudad Juárez (UACJ)
www.uacj.mx

Location:
Ciudad Juárez, Mexico

Grant stream:
Two – case study & prototype

GENDERED DESIGN IN STEAM

Reimagining urban territories for women's autonomy in Colombia

ID80

This research project aims to support an ongoing group of women in the neighborhood of Belén in Bogotá, by engaging them and other fellow residents in participatory and collaborative strategies. This will occur in four stages: building a community kitchen and expanding an existing community garden; critical mapping of Belén; identifying areas in the neighborhood for interventions like murals; and consolidating the findings to propose a conceptual framework for design as a field, taking into consideration women's empowerment and autonomy. This project builds on ongoing work in the neighborhood that seeks to establish ways of re-appropriating participants' community space and activities in the midst of gentrification and redevelopment efforts, from a gender perspective.

GENDERED DESIGN IN STEAM

Primary investigator:
Associate Professor Adriana María Botero Vélez

Co-Primary investigator:
Associate Professor Pablo Calderón Salazar

Institute:
Universidad de Bogotá Jorge Tadeo Lozano, (UTADEO)
www.utadeo.edu.co

Location:
Belén, Bogotá, Colombia

Grant stream:
Two – case study & prototype

Developing new construction techniques based on the work of women in Brazil

ID88

The research project is based on a housing movement called “Mutirao” which emerged at the end of the 1980s, where residents construct residential areas on the outskirts of populated cities in Brazil. This collective activity is usually led by women (around 80%), and they organize, coordinate and work on-site and in management. The project aims to work on the organizational design of construction sites, materials, tools and/or protective pieces of equipment, in order to support women working in the construction of their homes. Experimental research will be carried out in laboratories and through prototyping. The aim of the study is to create manuals and equipment for construction sites led by women, reduce the risk of accidents, search for techniques that are less harmful to builders’ health, and collectivize and de-hierarchize the knowledge of construction.

GENDERED DESIGN IN STEAM

Primary investigator:
Professor Diana Helene Ramos

Co-Primary investigator:
Amanda Azevedo Nunes

Institute:
Universidade Federal de Alagoas (FAU/UFAL)
www.ufal.br

Location:
Maceió, Brazil

Grant stream:
Two – case study & prototype

Studying the use of artifacts to rebuild self-image and identity among female breast cancer survivors in Brazil

ID91

This case study qualitatively analyzes the individual and social well-being of female breast cancer survivors who underwent mastectomies in Pernambuco, Brazil. The project will include workshops, interviews and exhibitions. Workshops using different techniques, such as clay, photography and other mediums will help to understand how artifacts are used as a strategy to rebuild self-image and identity during and after cancer treatment. The findings will be shared across academic and non-academic circles in order to raise awareness of, and support for, post-surgery female breast cancer survivors.

GENDERED DESIGN IN STEAM

Primary investigator:
Ma. Débora Ferro

Co-Primary investigator:
Dr. Kátia Medeiros de Araújo
Dr. Rosiane Pereira Alves

Institute:
Fundação de Apoio ao Desenvolvimento da Universidade Federal de Pernambuco (FADE-UFPE)
www.ufpe.br

Location:
Pernambuco, Brazil

Grant stream:
One – case study

3D-printed prostheses to support female survivors of domestic violence, accidents or cancer treatment in Brazil

This research project examines the effects of providing visually and/or mechanically enhancing prostheses to low-income women with visible disabilities caused by domestic violence, accidents or cancer treatment. A first round of prostheses provided to the women improved their quality of life in many ways, including their social inclusion, self-worth, confidence, and independence. Supported by the experiences from the first round, this project will make modifications to a second round of 3D-printed prostheses, including the nose, ear, breast and upper lip, to further improve the outcome for the women. Rehabilitation and psychological support for the women have been integrated into the project design.

GENDERED DESIGN IN STEAM

IDA

Primary investigator:
Dr. Maria Elizete Kunkel

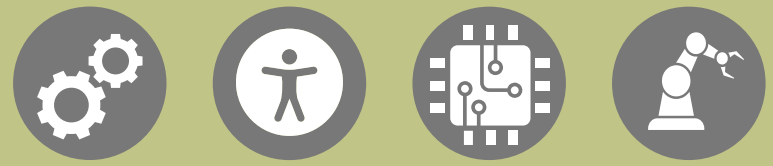
Co-Primary investigators:
Professor Luciana Ferreira
Professor Felipe Moura (UEL)

Institutes:
Universidade Federal de São Paulo (UNIFESP) www.unifesp.br

Universidade Estadual de Londrina (UEL) www.uel.br

Location:
Brazil

Grant stream:
Two – case study & prototype



ASIA

GENDERED DESIGN IN STEAM

- Middle East Technical University, **Turkey**
- Lahore University of Management Sciences (LUMS), **Pakistan**
- Multimedia University (MMU), **Malaysia**

Improving the design of public transport based on women's experiences in Turkey

ID17

This project seeks to explore the connections between transportation design and gender in Ankara, Turkey by examining women's experiences. This research project intends to generate more equitable guidelines and inclusive design ideas to improve transportation for women in Ankara. Through semi-structured interviews and a workshop, involving student proposals from METU's school of design, proposed improvements for transportation systems will be explored with women commuters.

Primary investigator:
Dr. Pinar Kaygan

Co-Primary investigator:
Dr Asuman Özgür Keysan

Institute:
Middle East Technical University (METU)
www.metu.edu.tr

Location:
Ankara, Turkey

Grant stream:
One – case study

GENDERED DESIGN IN STEAM

Designing support services for women experiencing workplace harassment in Pakistan

ID38

This project aims to develop guidelines to create technologies for low-literate factory women who work in oppressive circumstances. Women's experiences will directly support the development. It also seeks to develop a prototype application that would give women access to a safe, private and anonymous network to share experiences of workplace violence to find support.

Primary investigator:
Dr. Maryam Mustafa

Co-Primary investigator:
Dr. Hadia Majid

Institute:
Lahore University of Management Sciences (LUMS)
www.lums.edu.pk

Location:
Lahore, Pakistan

Grant stream:
Two – case study & prototype

GENDERED DESIGN IN STEAM

Designing mobile services for ageing women in Malaysia

ID50

This case study will look at gender and age differences in mobile use preferences and behaviour patterns. Data will be collected through focus groups and surveys to understand mobile use. The findings will inform the design of mobile apps to increase smartphone ownership use among ageing women in Malaysia.

Primary investigator:
Dr. Chui Yin Wong

Co-Primary investigators:
Associate Prof. Dr KOO Ah Choo (MMU)
Dr Yvonne LEE (MMU)
Dr LAI Wan Teng (USM)
Hazwan Mat Din (UPM)

Institute:
Multimedia University (MMU)
www.mmu.edu.my
Universiti Sains Malaysia (USM)
Universiti Putra Malaysia (UPM)

Location:
Cyberjaya, Malaysia

Grant stream:
One – case study

GENDERED DESIGN IN STEAM

AFRICA

GENDERED DESIGN IN STEAM

- Addis Ababa University, **Ethiopia**
- University of Energy and Natural Resources, **Ghana**
- University of Uyo, **Nigeria**
- Lagos State University, **Nigeria**
- Edo State Polytechnic Usen, **Nigeria**
- University of Mauritius, **Mauritius**
- University of Rwanda, **Rwanda**
- University of Rwanda, **Rwanda**
- University of Dar es Salaam, **Tanzania**

Improving access to financial services for women in Ethiopia

ID33

This project aims to provide financial services to women in Ethiopia through a mobile app. The researchers aim to conduct a survey in order to develop a prototype that addresses the needs and concerns of women in Ethiopia.

Primary investigator:
Dr. Getachew Mengesha

Co-Primary investigator:
Dr. Elefelious Getachew
Dr. Moges Ayele

Institute:
Addis Ababa University
www.aau.edu.et

Location:
Addis Ababa, Ethiopia

Grant stream:
Two – case study & prototype

GENDERED DESIGN IN STEAM

Assessing the impact of solar panels to improve energy access for women in rural Ghana

ID40

The government of Ghana aims to provide energy access to communities with populations of 500 and above, but isolated communities (rural or island) have no access to electricity. In order to provide electricity access to these communities, many solar systems have been implemented. This case study will explore the factors enhancing women's empowerment through energy access, investigate productive uses of energy in informal food preparation and processing sectors owned by women and vulnerable populations. It will assess the impact on energy access and gender and the political economy of the energy sector in these communities and enhance the role of the private sector in scaling up energy access for all.

GENDERED DESIGN IN STEAM

Primary investigator:
Dr. Samuel Gyamfi

Co-Primary investigators:
Dr. Danielle Sedegah
Dr. Eric Ofosu Antwi

Institute:
University of Energy and Natural Resources (UENR)
www.uenr.edu.gh

Location:
Volta Region, Ghana

Grant stream:
One – case study

Improving the design of upland fish drying technology for female fish vendors in Nigeria

ID47

The case study targets fish drying and processing facilities that are primarily used by female workers. As it currently stands, female fish dryers experience excessive strain as a result of substandard technology and working conditions. The research outcomes seeks to alleviate some of the physical strain and increase overall industry value. Methods include obtaining demographic information, identifying desirable and gender-conscious improvements in fish drying technology and/or facilities, and investigating some knowledge gaps. The research will investigate the needs of local communities to create detailed plans for improved drying and processing facilities.

Primary investigator:
Dr. Uduakobong Aniebiat Okon

Co-Primary investigator:
Mrs. Otu Ebeten Bassey

Institute:
University of Uyo
www.uniuyo.edu.ng

Location:
Akwa Ibom State, Nigeria

Grant stream:
Two – case study & prototype

GENDERED DESIGN IN STEAM

Developing a hybrid fish dryer to improve processing for small-scale female processors in Nigeria

ID57

The research project involves the development and integration of a solar and biomass-powered fish dryer in Lagos State in Nigeria. Local methods of fish drying and preservation are inefficient and negatively impact on health and well-being. The research plans to co-produce a hybrid solar/biomass fish dryer with local end-users, primarily a female labour force, to reduce the negative effects of the fish preservation process. Problems such as energy intermittency and inefficiency or waste in the process will be targeted as well as identifying requirements that are unique to the female labour force.

Primary investigator:
Dr. Kafayat Adetoun Fakoya

Co-Primary investigators:
Ms. Ayojesutomi O. Abiodun-Solanke
Prof. Adenike Omotunde Boyo
Prof. Shehu Latunji Akintola
Dr. Kafayat Oluwakemi Ajelara

Institute:
Lagos State University
www.lasu.edu.ng/home

Location:
Lagos, Nigeria

Grant stream:
Two – case study & prototype

GENDERED DESIGN IN STEAM

Constructing an eco-friendly generator for low-income female artisans in Nigeria

ID65

This research project aims to design and construct a fuel-less generator, capable of producing a sustainable, accessible and environmentally friendly electrical power machine to support female artisans operating in small and medium scale business ventures in Nigeria. The project aims to construct a generator that improves gender equality by developing cheap and robust methods that incorporate the cognitive, emotional and cultural needs of female artisans.

Primary investigator:
Mrs. Ese Esther Oriarewo

Co-Primary investigator:
Dr. Obokhai Kess Asikhia

Institute:
Edo State Polytechnic Usen
www.edopoly.edu.ng

Location:
Edo State, Nigeria

Grant stream:
Two – case study & prototype

GENDERED DESIGN IN STEAM

Developing small wind turbines with local women for domestic use in Mauritius

ID71

This research project aims to design and develop a prototype model and a system for a small-scale vertical-axis wind turbine which can later be scaled-up for domestic use in Mauritius. The prototype model and system design will involve local resources as much as possible, engaging women in particular in the design process. The prototype will be simulated for different income-groups with different energy demand profiles in rural, urban and coastal areas.

Primary investigator:
Dr. Mohammad Khalil Elahee

Co-Primary investigator:
Dr. Abdel Khoodaruth

Institute:
University of Mauritius
www.uom.ac.mu

Location:
Reduit, Republic of Mauritius

Grant stream:
Two – case study & prototype

GENDERED DESIGN IN STEAM

Improving the design process for housing and public spaces based on women's experiences in Rwanda

ID73

This case study will identify gender issues in the design of housing, built environments and public spaces in Rwanda. It will consider the impact of the built environment on women that is usually designed without their involvement. Data collection will include surveys and face-to-face interviews. The findings will be used to create guidelines and a framework to use when designing housing and public spaces to support greater equal access regardless of gender.

Primary investigator:
Dr. Marie Chantal Cyulinyana

Co-Primary investigator:
Mrs. Roselyne Ishimwe

Institute:
University of Rwanda
www.ur.ac.rw

Rwandan Association for Women in Science and Engineering (RAWISE)

Location:
Kigali City, Rwanda

Grant stream:
One – case study

GENDERED DESIGN IN STEAM

Improving transportation systems for women in Rwanda

ID74

This case study seeks to develop a framework of guidelines for safer transportation for vulnerable populations in Kigali City, Rwanda. The proposal defines vulnerable as including women, people with disabilities, the elderly, and children. Through structured and semi-structured interviews, focus groups, and surveys this project seeks to understand how transit user groups, with a focus on women, utilize the transportation systems. The results will provide a framework to create more responsive systems that take these experiences into consideration. The data collected includes number and length of trips, what participants travel with, and whether participants travel accompanied.

Primary investigator:
Dr. Didacienne Mukanyiligira

Co-Primary investigator:
Mrs. Marie Grace Umumararungu

Institute:
University of Rwanda
www.ur.ac.rw

Location:
Kigali City, Rwanda

Grant stream:
One – case study

GENDERED DESIGN IN STEAM

Modernizing the batik industry to improve income for women in Tanzania

ID79

This research project aims to modernize the batik production process in Tanzania to assist women in becoming the primary batik producers. This modernization will provide women in Tanzania a higher and more sustainable income towards alleviating poverty. The first phase of the project will focus on establishing techniques for local producers to create higher quality batik, and the second phase will work with artists to develop new motif designs and patterns for batik.

Primary investigator:
Dr. Pendo Bigambo

Co-Primary investigators:
Dr. Mbonea Mrango
Ms. Safina Kimbokota

Institute:
University of Dar es Salaam
www.udsm.ac.tz

Location:
Dar es Salaam, Tanzania

Grant stream:
Two – case study & prototype

GENDERED DESIGN IN STEAM

The GDS program is supported by an interdisciplinary collection of experts based at Carleton, in collaboration with regional experts:

GENDERED DESIGN IN STEAM

Project Implementation Team - Carleton University

Bjarki Hallgrimsson
Co-Primary Investigator

Dominique Marshall
Co-Primary Investigator

Chiara Del Gaudio
Investigator

Kerry Grace
Program Coordinator

Sector Experts from Carleton University

Adrian D. C. Chan
Amir Hakami
Burak Gunay
Catherine Bonier
Fred Afagh
Jill Wigle
Mika Westerlund
Owen Rowland
Ozayr Saloojee
Tracey Lauriault
Vivian Nguyen

Regional Experts

Emmanuel Mutungi – Africa

Raquel Noronha – Latin America

Yoko Akama – Asia

Gender Expert

Amina Mire

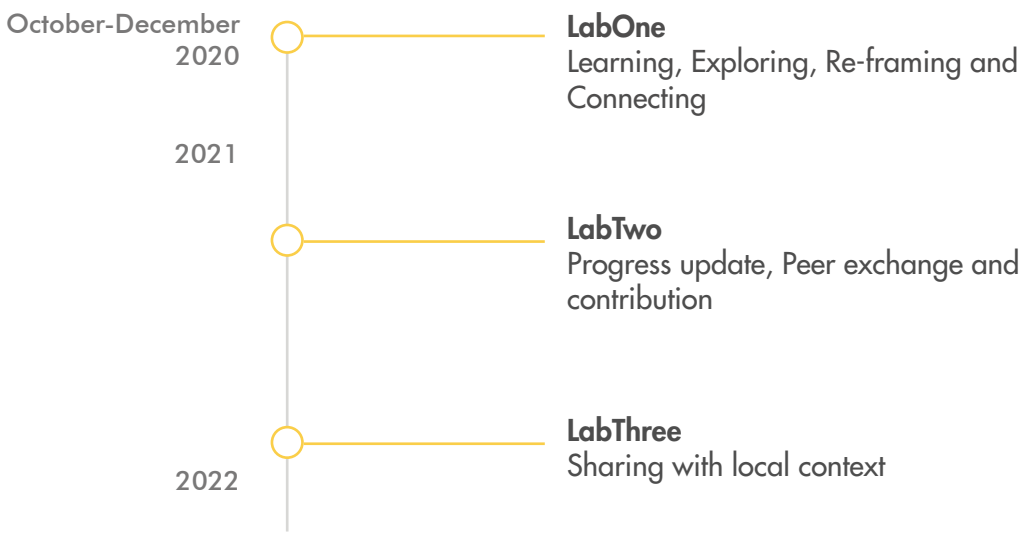
Graduate Research Assistants: Alicia Gal - Andrew Howarth - Fiki Falola - Lucia Vargas - Madiha Rehman - Victoria Asi - Yagmur Babaoglu

Research Coordinators: Maya Chopra - Najeeba Ahmed - Ona Bantjes-Rafols

Annex D – LabOne Information pack

GDS
LabOne

October-December, 2020
Carleton University



GDS HUB

Welcome to the GDS program!
The GDS program acts through the GDS HUB, which is a platform for the exploration and advancement of Gendered Design knowledge and practice. It acts through facilitating:

- the convergence, the connection and articulation of different expertise and contributions on, and towards, Gendered Design;
- the emergence of new research and network possibilities;
- the emergence of a collective form of intelligence and knowledge building processes on Gendered Design.

As connections are made, and knowledge is produced, the seeds for future activities and opportunities for, and on, Gendered Design research and practice will emerge and be shared with other areas.
The GDS HUB acts through different kinds of activities, one of them being the Labs.

Labs

The GDS Labs are regular events that gather the participants and experts of the GDS program for the collective exploration, knowledge building and advancement on Gendered Design. They consist of activities for collectively producing knowledge on Gendered Design through the discussion and exchange of current understandings, research activities and theoretical perspectives on the topic. During them, researchers' ideas are enriched and evolved due to the contribution of each participant's and expert's experience and expertise. A collective form of intelligence is the core of GDS Labs activities. Three Labs have been envisioned.

LabOne

The first lab, LabOne, is designed to address and support:

1) the advancement of Stream 1 (S1) and Stream 2 (S2) awarded projects in terms of research question, structure of their research proposals, and methodological choices;

2) the advancement of S2 awarded projects approach in innovating the design process and rethinking design approaches in order to contribute to Gendered Design;

3) the convergence, sharing and exchange of participant's and experts' knowledge, expertise and experience in advancing Gendered Design and in defining 20 specific design and methodological approaches able to innovate from this perspective.

Day 1 - Networking and Learning

October 21, 2020 | 9am-12pm Eastern Time

Day 2 - Framing and Exchanging

November 4, 2020 | 9am-1:30pm Eastern Time

Day 3 - Reflecting and Adapting

November 18, 2020 | 9am-1:30pm Eastern Time

Day 4 - Sharing

December 2, 2020 | 9am-12pm Eastern Time

Lab Infrastructure

For GDS LabOne we are using a mix of online platforms in a configuration that takes advantage of asynchronous and synchronous activities. All platforms will be carefully moderated and monitored by the implementation team.

This video conferencing platform will be our real-time meeting space. Through this platform participants can attend lectures, workshop activities, and presentations. You can download the app here: https://zoom.us/download
You can find the links and passwords to access the different events in this document on each day page.

GDS HUB has a YouTube channel where you can find:
1) pre-recorded short videos with awardeed team introductions and projects presentations. You can watch them and familiarize with the members of this network. They will be availble starting from Day 1.
2) some recorded LabOne activities: lectures, conversations and presentations. They will be made available after each day (Day 1 and Day 4)
You can access the video repository at: https://www.youtube.com/playlist?list=PLkavYUIgT2sMLhS5Buajlty-4PKv87amS
Video presentations will be available in English.

We will use MIRO online visual collaborative platform for the workshop activities. Boards with pre-designed frameworks for interaction and prompting reflection will be provided to each awardeed team by email after Day 1. Besides during Day 2 and Day 3, those boards will be used by the awardees for preparatory activities before Day 2, Day 3 and Day 4. You can create your own account here: https://miro.com/app but is not necessary for participating.

Etiquette

We aim to foster a productive, collaborative and respectful experience for all.
This will only be possible if participants work together to create that experience.

Principles for engagement in Zoom:

- Be kind, be respectful, be mindful of cultural differences and technical constraints;
- Mute your microphone during the sessions;
- Enter the space planning to listen actively, and participate with respect; do not interrupt others;
- In the Zoom meetings ask your questions in the the chat. Your questions will be read out and addressed, time permitting. We will collect all the questions and gather responses should we not be able to cover them during the zoom call.

The actions listed below, in particular, will not be tolerated. We ask all participants to look out for each other in creating environments for respectful debate without harmful language or actions. Please avoid:

- Screen-recording at any point of the event without the expressed permission from speakers;
- Spam in chat windows, including reposting the same word/content repeatedly in order to disrupt the conversation;
- Harassment or bullying, including negative comments about or in relation to race/ethnicity, gender identity, sexual orientation, (dis)ability, age, religion, physical appearance, language, accent, citizenship, or other categories through which people have been, or are, marginalized or oppressed;
- Intimidation or threats;
- Misusing screen-sharing capabilities;
- Sharing images, especially to threaten or sexually harass;
- Unwelcomed sexual attention;
- Threatening or other endangerment of minors;
- Any activity meant to convey or cultivate hostility;
- Insults against a person, rather than disagreements with an argument they are making, or other attacks;
- Encouraging the above behaviour.

Please consider calling out any of these behaviors if you not only experience but witness this happening during the event. In Zoom you can send a private message to the host of the event. If you prefer, you can report instances of inappropriate conduct after the event has finished.
The organizers retain the right to remove anyone from a session/chat/room and anyone removed for actions listed above will not be permitted to rejoin. We aspire to moderate with care and responsibility, and in the spirit of the project.

Day 1 - Networking and Learning

Wednesday October 21, 2020
9am-12pm Eastern Time

Day of lectures and conversations on crucial topics for Gendered Design research and practice.
Guest speakers: Amina Mire, Emmanuel Mutungi, Raquel Noronha, Pascale Saint-Denis
Participants: GDS Core Team, Stream 1 and Stream 2 awardees, Sector Experts

zoom https://us02web.zoom.us/j/85141312479?pwd=M0J1OGMrVzkzWS9BQ1RCRUZBd3prZz09
PASSWORD: 879106

YouTube https://www.youtube.com/playlist?list=PLkavYUIgT2sMLhS5Buajlty-4PKv87amS

No.	Item	Time
1.	**Introduction** - welcome from the implementation team at Carleton University - overview of the day	9:05 to 9:15
2.	**Gender Expert - Amina Mire** - lecture on the implications of a gender inclusive perspectives for the research project and the design process (20 mins) - Q&A (10 mins)	9:15 to 9:50
10 minute break 9:50 to 10:00 am		
3.	**Sector Expert Africa - Emmanuel Mutungi** - conversation between Bjarki Halgrimsson and Emmanuel Mutungi (15 mins) - Q&A (5 mins)	10:00 to 10:20
10 minute break 10:20 to 10:30 am		
4.	**Sector Expert Latin America – Raquel Noronha** - conversation between Chiara Del Gaudio and Raquel Noronha (15 mins) - Q&A (5 mins)	10:30 to 10:50
10 minute break 10:50 to 11:00 am		
5.	**Gendered Design in STEAM – Pascale Saint-Denis** - conversation between Dominique Marshall and Pascale Saint-Denis(15 mins) - Q&A (questions gathered as Pascale will not be attending live) (5 mins)	11:00 to 11:20
6.	**Closing and next steps**	11:20 to 11:30

AT THE END OF DAY 1:

1) **Please complete this survey**
2) **Please complete the Miro boards, you will receive a link by email.**

Day 2 - Framing and Exchanging

Wednesday November 4, 2020
9am-1:30pm Eastern Time

Workshop activities aiming at exploring together the characteristics of research and knowledge production on Gendered Design, and the relevance of situated knowledge and local perspective.

Participants:

- Stream 1 awardees from 9 am to 11 am
- Stream 2 awardees from 11:30 am to 1:30 pm

Facilitators: Regional experts, Gender Expert and Research Assistants.

https://us02web.zoom.us/j/86349828650?pwd=YVJvZ3RENFZyRitHR2pnNHlQbmxjUT09
PASSWORD: 847340

https://www.youtube.com/playlist?list=PLkavYUIgT2sMLhS5BuajIty-4PKv87amS

No.	Item	Time
	Introduction	
1.	**Stream 1 Workshop activities "Framing and Exchanging"** **Latin America IDs: 37, 42, 53, 91** **Africa IDs: 40, 47, 73, 74** **Asia IDs: 17, 50** - Introduction (5 to 10 minutes) - Breakout room workshop	9 to 11
30 minute break 11 to 11:30 am		
2.	**Stream 2 Workshop activities "Framing and Exchanging"** **Latin America IDs: 61, 80, 88, A** **Africa IDs: 33, 57, 65, 71, 79** **Asia IDs: 38** - Introduction (5 to 10 minutes) - Breakout room workshop	11:30 to 1:30

AT THE END OF DAY 2:

1) **Please complete this survey**
2) **Please complete the Miro boards, you will receive a link by email.**

Day 3 - Reflecting and Adapting

Wednesday November 18, 2020
9am-1:30pm Eastern Time

Workshop activities aiming at: 1) discussing the methodological and research choices made (for Stream 1), and the design process envisioned (for Stream 2), 2) and exploring together new possibilities.

Participants:

- Stream 1 awardees from 9 am to 11 am
- Stream 2 awardees from 11:30 am to 1:30 pm

Facilitators: Regional experts, Gender Expert and Research Assistants.

zoom https://us02web.zoom.us/j/89475466864?pwd=Vnk4TkdwWWs0V3VBUmhpSFVTb29Kdz09
PASSWORD: 007199

YouTube https://www.youtube.com/playlist?list=PLkavYUIgT2sMLhS5BuajIty-4PKv87amS

No.	Item	Time
1.	**Stream 2 Workshop activities "Reflecting and Adapting"** **Latin America IDs: 61, 80, 88, A** **Africa IDs: 33, 57, 65, 71, 79** **Asia IDs: 38** - Introduction (5 to 10 minutes) - Breakout room workshop	9 to 11
30 minute break 11 to 11:30 am		
2.	**Stream 1 Workshop activities "Reflecting and Adapting"** **Latin America IDs: 37, 42, 53, 91** **Africa IDs: 40, 47, 73, 74** **Asia IDs: 17, 50** - Introduction (5 to 10 minutes) - Breakout room workshop	11:30 to 1:30

AT THE END OF DAY 3:

1) **Please complete this survey**
2) **Work on the presentation for Day 4 with your team.**

Day 4 - Sharing

Wednesday December 2, 2020
9am-12pm Eastern Time

Day for sharing reflections about the workshop activities and related achievements and for meeting some of the Sector Experts.
Participants: S1 and S2 awardees as presenters; GDS implementation team, Regional Experts and Gender Experts as audience; Sector Experts as guests.

https://us02web.zoom.us/j/88527391304?pwd=VTYwQWs2anI2NTRoUGdIZUdtbm9CZz09
PASSWORD: 270499

https://www.youtube.com/playlist?list=PLkavYUIgT2sMLhS5Buajlty-4PKv87amS

No.	Item	Time
1.	**Introduction** - welcome from the implementation team at Carleton University - overview of the day	9:05 to 9:10
2.	**Presentations** - S1 projects' presentations of the results of the workshop activities (10 minutes for each regional group) - Q&A (10 minutes)	9:10 to 9:50
10 minute break 9:50 to 10:00 am		
3.	**Presentations** - S2 projects' presentations of the results of the workshop activities (10 minutes for each regional group) - Q&A (10 minutes)	10:00 to 10:40
10 minute break 10:40 to 10:50 am		
4.	**Introduction of Regional Experts and converations in the break-out rooms**	10:50 to 11:30
10 minute break 11:30 to 11:40 am		
5.	**Closing and next steps** - Q&A	11:40 to 12

AT THE END OF DAY 4:

1) Please complete this survey

Annex E – LabOne Workshop activities

GDS
LabOne

Workshop Activities Handbook

October - December 2020
Carleton University

Introduction

This handbook provides information about GDS LabOne Workshop Activities and the role of the Regional Experts (RE), Gender Expert (GE), Research Assistant Coordinators (RACs), and Research Assistants (RAs).

Day 2, Day 3 and Day 4 are here described in detail.

The workshop activities will be supported by the following infrastructure:

- Zoom for synchronous activities.
- Miro Boards for synchronous and asynchronous activities.

Each RE and related RAC will have a Miro Board link with the activities designed. The RAs will also have their own separate link:

- RE Latin America: https://miro.com/app/board/o9J_khEz-XU=/
- RE Africa: https://miro.com/app/board/o9J_khE_008=/
- RE Asia: https://miro.com/app/board/o9J_khE_3SA=/
- RAs: https://miro.com/app/board/o9J_khE8CEo=/

Each project team have been provided their own Miro Boards.

List of Miro Boards mention in this document:
Board 1 – Organizing and presenting
Board 2 – Exploring and detailing: what to/by who
Board 3/3a – Exploring and detailing: how/with who (research principles) – Stream 1 / 2
Board 3b – Exploring and detailing: how/with who (design principles) – Stream 2 only
Board 4 – Theoretical mind-map
Board 5 – Instructions for Boards 6, 7, 8 & 9
Board 6 – What is Gendered Design?
Board 7 – What kind of contribution is expected by research on Gendered Design?
Board 8 – What are the methodological principles for research on Gendered Design?
Board 9 – How can research choices (theoretical and methodological) represent the local context?
Board 10 – Reflecting and reframing
Board 11a – Current and updated research process (Stream 1 ONLY)
Board 11b – Current and updated design process (Stream 2 ONLY)

If you have additional questions please contact us at GenDesignSTEAM@cunet.carleton.ca.

Contents

Day 2 - Framing and Exchanging

Wednesday November 4, 2020
9am-1:30pm Eastern Time

Zoom: https://us02web.zoom.us/j/86349828650?pwd=YVJvZ3RENFZyRitHR2pnNHlQbmxjUT09 (code 847340)
Day 2 will consist of two, 2-hour workshop activities split by region and Stream:

No.	Item	Time
	Introduction	
1.	Stream 1 – Workshop activities "Framing and Exchanging" - Introduction and overview from Core Team (5 minutes) - Breakout room workshop Latin America IDs: 37, 41, 53, 91 Africa IDs: 40, 47, 73, 74 Asia IDs: 17, 50	9 to 11
30 minutes break 11 to 11:30 am		
2.	Stream 2 – Workshop activities "Framing and Exchanging" - Introduction and overview from Core Team (5 minutes) - Breakout room workshop Latin America IDs: 61, 80, 88, A Africa IDs: 33, 57, 65, 71, 79 Asia IDs: 38	11:30 to 1:30

GDS Team and participants

Day 2 workshop sessions will be coordinated and led by the REs. They will lead the activity designed by the GDS Core Team and they will be supported in this by the RACs, who will support in logistic tasks. Each RAC will support the RE of the region assigned to them. Each RA will participate in the group with the highest amount of the projects they support. The distribution of RAs should be balanced between the different groups.

Each RE will work with the awardees of their region – there will be therefore three groups of workshop activities (one for Latin America, one for Africa and one for Asia) happening concurrently. At least one member from each awarded project will participate in the activities. There might be more than one. We suggest a maximum of 15 participants for each workshop group. The GE will participate and support the activities when and how required by the REs.

RACs will help their RE in identifying who is going to participate in order to respect the maximum number (15 participants). RACs will also support in defining the distribution of the RAs across the three regional groups. They will also communicate to the participants that they will be asked to present their project in 5 minutes using Board 1.

Activities overview and aim

On Day 2, the first day of workshop activities, the awardees will present their projects and their research ideas and perspective, and they will reflect together on Gendered Design research. Specifically, they will reflect on:

1) What Gendered Design is and can be;
2) What is a research question on Gendered Design?
3) What contribution is expected by research on Gendered Design?
4) What local knowledge should be taken into consideration for their projects?

The aim of the activities is not to provide a specific answer but to provoke reflections on these topics. After Day 2, these reflections might support the awardees in analysing their proposal and redesign as necessary based on their new understandings. Regional Experts will invite the awardees in doing this.

Awardees' preparatory activities for Day 2

After Day 1, the awardees received some home assignments that will prepare them for Day 2. The home assignments will support them in: organizing and selecting relevant information about their proposals; further exploring and detailing research choices. Some of them will be used during Day 2 as support for awardees' presentations; others will support research redesign activities following Day 2.

The links to the Miro Boards with these activities were shared with the awardee through email, and the Regional Experts, Gender Expert, Research Assistant Coordinators, and Research Assistants were copied to the email so that they can support the awardees if necessary. Remember to not alter the Boards without the awardees' permission and to not share information contained there. It is confidential.

REs and RACs will support the awardees if required. REs might have a look at the awardees' Boards to prepare themselves for the workshop activities, as well as later to support the awardees throughout the research project implementation.

The following Boards have been designed as preparatory activities for Day 2:

- Board 1 - Organizing and presenting

- Board 2 - Exploring and detailing: what to/by who
- Board 3/3a - Exploring and detailing: how/with who (Stream 1 / 2)
- Board 3b - Exploring and detailing: how/with who (Stream 2 ONLY)
- Board 4 - Theoretical mind-map

Board 1 - Organizing and presenting

The aim of this Board is to support awardees in **selecting and organizing core information about their research project**. Several of the topics that they need to identify, and outline were not clearly expressed in their projects. The awardees will use this Board for their project presentation during Day 2.

Based on the Board template provided, the awardees should explain clearly:

1) WHAT their project is about;
2) WHO is going to participate in the project and who is affected by the issue/opportunity at the core of the project;
3) HOW they are going to address the issue/opportunity through the research and, for Stream 2, design process;
4) their RESEARCH QUESTION;
5) CHALLENGES AND LIMITATIONS to the project implementation;
6) the project CONTRIBUTION TO GENDERED DESIGN.

Instructions, an instructions template and a blank template are provided on the Miro Boards. The awardees need to read the instructions and fill in the blank template on the right. They need to fill in each section according to the instructions provided in the instructions template. The additional following suggestions are provided:

- When a description is required, keep it to 2-3 sentences max.
- In order to fill each section, overwrite the existing text.
- Use OpenSans typeface, 10 point size for the description text.
- The font size may be changed to an appropriate size to fit text if necessary.

Board 2 - Exploring and detailing: what to/by who

The aim of this Board is to promote further **reflections on the main issue/opportunity** addressed by each research project. Specifically, to outline and/or to identify related issues/opportunities, the factors behind them and who generated them. In this way, the Board will provide the researchers with a wide overview of interrelated phenomena and all the actors involved. The need to involve previously disregarded actors might emerge, for instance.

Board 2 will not be used during Day 2 activities, it has been designed to support long term and in-depth reflections and changes, as well as further familiarization and mastery of the research process by the awardees. The researchers are invited to start thinking/rethinking their projects based on the reflections that this, and the next two Boards, catalyze. However, awardees can share some of the reflections and understandings that emerge during Day 2, if they see it fit and/or if invited by the RE.

Based on the template for Board 2 provided, the awardees should identify and write:

1) the main issue/opportunity at the core of the research project in the grey rectangular field;
2) the issues/opportunities related to the main issue/opportunity of the research project in the first row (the green one). Write each issue on one white post-it. Add only one issue to each box.
3) who this issue/opportunity affects in the grey box located in the first row. Write each affected being/category on one white post-it;
4) what are the factors behind each issue/opportunity (identified in the first row) in the second row (the grey one). Write each factor on one white post-it. The structure provided is an example, you can add more post-its and arrows if necessary;
5) who generated the factors that are behind each issue/opportunity in the third row (the yellow one). Write each being/category on one white post-it. The structure given is an example, you can add more post-its and arrows if necessary.

Each addition should be made on one white post-it. The graphic structure provided is an example, the awardees can add more green-grey-yellow columns, post-its and arrows as needed. The additional following suggestions are provided:

- Add or delete columns if necessary;
- Use sticky notes to fill in each field, use as many sticky notes as needed;
- Change font size if necessary;
- Colours of sticky notes can be changed and used to connect ideas.

Board 3/3a - Exploring and detailing: how/with who (Stream 1 / 2)

This Board aims at promoting a reflection on the chosen research methodological principles and how (even if in certain cases) they will be applied with the project participants/who is affected by the issue/opportunity.

The research principles were listed in Board 1 (in "List the principles behind the research choices"). In regard to the participants and who is affected by the issue/opportunity, they were identified in Board 2 (in "Who does this issue/opportunity affect?").

Board 3/3a will not be used during Day 2 activities, it has been designed to support long term and in-depth reflections and changes, as well as further familiarization and mastery of the research process by the awardees. As you know, it might easily happen to a researcher to choose a specific methodological perspective and approach and not appropriately apply it throughout the different stages and activities of the research process. This Board will help identify when this happens, as well as when to eventually integrate different principles with certain actors. The visualization provided will support this thought process.

The researchers are invited to start thinking/rethinking their projects based on the reflections that Board 3/3a catalyzes. In regard to Day 2, awardees can share some of the reflections and understandings that emerge during Day 2, if they see it fit and/or if invited by the RE.

Based on the template for Board 3/3a provided, the awardees should identify and write:

1) In the first row (the dark green row), the main methodological principles;
2) In second row (grey row), the name of the "who" identified: they can be project participants, or affected categories not included so far in the project;
3) In the third row (yellow row), how that principle is applied with a specific participant or affected category.

Each addition should be made on one white post-it. The graphic structure provided is an example, the awardees can add more green-grey-yellow columns, post-its and arrows as needed. The additional following suggestions are provided:

- Add or delete columns if necessary;
- Use sticky notes to fill in each field, use as many sticky notes as needed;
- Change font size if necessary;
- Colours of sticky notes can be changed and used to connect ideas.

Board 3b - Exploring and detailing: how/with who (Stream 2 only)

It aims at promoting a reflection on the chosen **design methodological principles** and how (even if in certain cases) they will be applied with the project participants/who is affected by the issue/opportunity.

The design principles were listed in Board 1 (in "List the principles behind the design choices"). In regard to the participants and who is affected by the issue/opportunity, they were identified in Board 2 (in "Who does this issue/opportunity affect?").

Board 3b will not be used during Day 2 activities, it has been designed to support long term and in-depth reflections and changes, as well as a deeper further familiarization and mastery

of the research process by the awardees. As you know, it might easily happen to a designer/ researcher in design to choose a specific methodological perspective and approach and not appropriately apply it throughout the different stages and activities of the design process. This Board will help identify when this happens, as well as when to eventually integrate different principles with certain actors. The visualization provided will support this thought process.

The researchers are invited to start thinking/rethinking their projects based on the reflections that this Board catalyzes. In regard to Day 2, awardees can share some of the reflections and understandings that emerge during Day 2, if they see it fit and/or if invited by the RE.

Based on the template for Board 3b provided, the awardees should identify and write:

1) In the first row (the dark green row), the main methodological principles;
2) In second row (grey row), the name of the "who" identified: they can be project participants, or affected categories not included so far in the project;
3) In the third row (yellow row), how that principle is applied with a specific participant or affected category.

Each addition should be made on one white post-it. The graphic structure provided is an example, the awardees can add more green-grey-yellow columns, post-its and arrows as needed. The additional following suggestions are provided:

- Add or delete columns if necessary;
- Use sticky notes to fill in each field, use as many sticky notes as needed;
- Change font size if necessary;
- Colours of sticky notes can be changed and used to connect ideas.

Board 4 - Theoretical mind-map

The aim of this Board is to support the awardees in mastering and exploring further the theoretical territory of the research. At the center of the diagram provided, there is the core topic of the research and the three main methods through which the core topic will be addressed. The awardees will be asked to identify at least three main theoretical topics whose convergence generate the central one, as well as the related topics. After doing this, they will point out the main scholars and related works that they are using in their research project. A completed example is provided in the Miro Boards.

Doing this will allow them to have a clear understanding of the theoretical position of their work, and to identify conflicts and gaps. In the long term, this will support the identification of references that might be more appropriate and closer to the project region and local context.

Based on the template for Board 4 provided, the awardees should identify and write:

1) the core research topic in the triangle at the center;
2) in the three boxes connected to the triangle, the methods/tools concerned with the core research topic and the theory;
3) three main theoretical topics that converge into the core research topic, in either the yellow, blue and orange circles;
4) the sub-topics that concern two main topics in the area between two main theoretical topics;
5) the scholars of reference for each theoretical topic and methodological approach in the grey circles;
6) the full reference in the smaller grey circles add.

Day 2 workshop activities

Each Day 2 session will consist of the following activities:

a) Project presentations;
b) Collective exploration, discussion and synthesis.

Project presentations

After gathering together the awardees of a specific region and stream in a Zoom Break out room, the first hour will be dedicated to project presentations.

Each project team will have 5 minutes to present their project, which will be followed by 5 minutes of Q&A/comments by the other participants. Board 1 will be used to support the presentation.

Collective exploration, discussion and synthesis

The second hour will be dedicated to exploring the following four questions:

1) What is Gendered Design?
2) What kind of contribution is expected by research on Gendered Design?
3) What are the methodological principles for research on Gendered Design?
4) How can research choices (theoretical and methodological) represent the local context?

Specifically, for each question there will be:

- 5 minutes brainstorming session;
- 10 minutes discussion and synthesis – emerging understandings and answers are going to be written by the participants;

Due to time limitations the RE and the participants may not discuss all the questions or, even, based on the RE's suggestions, they might focus only on some of the questions provided. This is left to the RE's decision and coordination.

An instructions Board (Board 5), one for each Stream, will be provided to the REs, GE, RACs and RAs before Day 2. As well as four other Boards (Boards 6, 7, 8 & 9), for each question.

Boards 6, 7, 8 and 9, consists of two parts: one part for brainstorming; and a second part for synthetizing the discussion, understanding and potentially answering (which can be plural) each question.

Each project team will have 5 minutes to present their project, which will be followed by 5 minutes of Q&A/comments by the other participants. Board 1 will be used to support the presentation.

At the end of Day 2, the REs will invite the workshop participants to record information and insights from the workshop and to complete the Boards for Day 3 that will be shared by the RACs in the subsequent days.

The REs or the RACs will also explain that during Day 3, each project will have 5 minutes to present the research (S1) or design (S2) process as per part (A) of Board 11a/b; as well as any relevant insight the awardees see fit.

After Day 2, the REs will share the five Boards used during the workshop with the awardees. To do this they will copy-paste the filled Boards in the awardee's Miro Board. They can be supported by the RACs or RAs in doing this.

Day 3 - Reflecting and Adapting

Wednesday November 18, 2020
9am-1:30pm Eastern Time

Zoom: https://us02web.zoom.us/j/89475466864?pwd=Vnk4TkdwWWs0V3VBUmhpSFVTb29Kdz09 (code 007199)
Day 3 will consist of two, 2-hour workshop activities split by region and Stream:

No.	Item	Time
1.	Stream 2 – Workshop activities "Reflecting and Adapting" - Introduction and overview from Core Team (5 minutes) - Breakout room workshop Latin America IDs: 61, 80, 88, A Africa IDs: 33, 57, 65, 71, 79 Asia IDs: 38	9 to 11
30 minutes break 11 to 11:30 am		
2.	Stream 1 – Workshop activities "Reflecting and Adapting" - Introduction and overview from Core Team (5 minutes) - Breakout room workshop Latin America IDs: 37, 41, 53, 91 Africa IDs: 40, 47, 73, 74 Asia IDs: 17, 50	11:30 to 1:30

GDS Team and participants

Day 3 workshop sessions will be coordinated and led by the REs. They will lead the activity designed by the GDS Core Team and they will be supported in this by the RACs, who will support in logistic tasks. Each RAC will support the RE of the region assigned to them. RAs will participate in the same group of Day 2. The distribution of RAs has to be balanced between the different groups.

Each RE will work with the awardees of their region – there will be therefore three groups of workshop activities (one for Latin America, one for Africa and one for Asia) happening concurrently. At least one member from each awarded project will participate in the activities. There might be more than one. We suggest a maximum of 15 participants for each workshop group. The GE will participate and support the activities when and how required by the REs.

RACs will help their RE in identifying who is going to participate in order to respect the maximum number (15 participants). They will also communicate, at the end of Day 2, to the awardees that they will be asked to present their research (S1) or design (S2) process in 5 minutes by using part (A) of Board 11a/b during Day 3.

Activities overview and aim

Day 3, is the second day of workshop activities, where each awardee will present, discuss and update:

1) the research and methodological choices in the case of Stream 1 projects;
2) the design approach in the case of Stream 2 projects.

It will consist of activities that will guide the awarded researchers in outlining their current proposals, exploring and discussing them from a gender inclusive perspective, and eventually identifying additional/new possibilities. The outcome will be either a draft of a new research/design process and contribution, or a series of insights to be reflected upon after LabOne.

After Day 3, the participants (organized in the workshop groups) will summarize the main advancements and understandings that emerged through the Lab activities in a 10 minute presentation to be shown during Day 4. This activity can be led by the REs, or self-coordinated by the awardees based on the instructions provided by the RE.

Awardees' preparatory activities to Day 3

After Day 2, the awardees will receive some home assignments so they are prepared for Day 3. The home assignments will support them in: organizing and selecting relevant information about their research and design process, as well as, eventually, in starting envisioning alternatives to current choices. All of them will be used during Day 3 to support awardees' presentations, the discussions of their choices and their peers' contributions.

The Miro Boards with these activities will be copied to each project Miro Boards after Day 2 by the RACs. REs and RACs will support the awardees in case they need it.

REs might have a look at the awardees' Boards to prepare themselves for the workshop activities, as well as later to support the awardees throughout the research project implementation.

The following Boards have been designed as preparatory activities for Day 3:

- Board 10 – Reflecting and reframing

- Board 11a – Current and updated research process (Stream 1 ONLY)
- Board 11b – Current and updated design process (Stream 2 ONLY)

Board 10 - Organizing and presenting

The aim of this Board is to support awardees in **organizing insights and reflections** from Day 2 collective activities. In this Board the awardees will find fields in which they are invited to take notes of:

1) Reflections emerged during Day 2 activities;
2) Changes that they would like to implement in their project after all the activities performed;
3) The research question updated after Day 2;
4) The research contribution and, for S2, the design outcome updated after Day 2;
5) Local tools, techniques, processes, rituals, and behaviours that it might be relevant to include in their project.

Awardees will be also invited to update their theoretical mind-map by the RE at the end of Day 2, as well as through Board 10 instructions.

Board 10 will not be used during Day 3. It has been designed mainly to support awardees in recording ideas, insights and advancing their research reflections and projects. However, the awardees might decide to share some of its content during Day 3 presentation (i.e. the updated research question).

Instructions, an instructions template and a blank template are provided in the Miro Board. The awardees need to read the instructions and fill in the blank template on the right. They need to fill in each section according to the instructions provided in the instructions template. The additional following suggestions are provided:

- When a description is required, keep it to 2-3 sentences max.
- In order to fill each section, overwrite the existing text.
- Use OpenSans typeface, 10 point size for the description text.
- The font size may be changed to an appropriate size to fit text if necessary.

Board 11a – Current and updated research process (Stream 1 ONLY)

The aim of this Board is to support awardees in **organizing and selecting relevant information about their research process**, and in confirming current choices or envisioning alternatives to current ones when necessary. The Board consist of two parts, in which the awardee will:

A) outline the current research process and its features;
B) draft alternatives, when necessary, on the current research choices and process.

Part (A) will be filled *before* Day 3; while part (B) will be completed *during* Day 3.

In part (A), based on the template provided, the awardees should identify and write:

- the phases of the research process;
- who (participates of that phase), what (happens in that phase), how (the activities are implemented: tools, techniques, principles) and the main theoretical references for each phase.

Instructions, an instruction template and a blank template are provided in the Miro Board. The awardees need to read the instructions and fill in the blank template on the right. They need to fill in each section according to the instructions provided in the instruction template. The additional following suggestions are provided:

- When a description is required, keep it to 2-3 sentences max.
- In order to fill each section, overwrite the existing text.
- Use OpenSans typeface, 10 point size for the description text.
- The font size may be changed to an appropriate size to fit text if necessary.

Board 11b – Current and updated design process (Stream 2 ONLY)

The aim of this Board is to support awardees in **organizing and selecting relevant information about their design process**, and in confirming current choices or envisioning alternatives to current ones when necessary. The Board consist of two parts in which the awardee will:

A) outline the current design process and its features;
B) draft alternatives, when necessary, on the current design choices and process.

Part (A) will be filled *before* Day 3; while part (B) *during* Day 3.

In part (A), based on the template provided, the awardees should identify and write:

- the phases of the design process;
- who (participates of that phase), what (happens in that phase), how (the activities are implemented: tools, techniques, principles) and the main theoretical references for each phase.

Instructions, an instruction template and a blank template are provided in the Miro Board. The awardees need to read the instructions and fill in the blank template on the right. They need to fill in each section according to the instructions provided in the instruction template. The additional following suggestions are provided:

- When a description is required, keep it to 2-3 sentences max.
- In order to fill each section, overwrite the existing text.

- Use OpenSans typeface, 10 point size for the description text.
- The font size may be changed to an appropriate size to fit text if necessary.

Day 3 workshop activities

In the Day 3 session, each awarded project team/team member will have 20 minutes to present and discuss their research (S1) or design (S2) process. Specifically:

1) They will have 5 minutes to present and describe the current process by using part (A) of Board 11a or 11b;
2) 15 minutes to fill part (B) of Board 11a or 11b, by discussing their current choices and emerging reflections (from pre Day 2, Day 2, and post Day 2 activities) with their peers;
3) The participants will provide insights on/for improving the process based on their experience;
4) The RE will coordinate and facilitate the session with the support of the RACs.

Board 11a – Part (B) – Current and updated research process (Stream 1 ONLY)

In part (B), based on the template provided, the awardees should write:

- The three methodological principles chosen for the project.
- The updated choices for who (participates in each phase), what (happens in each phase), how (the activities are implemented: tools, techniques, principles) and the main theoretical references.
- If choices cannot be made, the participant will take note there of the insights from the discussion and will fill the table after Day 3 activities.

Instructions, an instruction template and a blank template are provided in the Miro Board. The awardees need to read the instructions and fill in the blank template on the right. They need to fill in each section according to the instructions provided in the instruction template. The additional following suggestions are provided:

- When a description is required, keep it to 2-3 sentences max.
- In order to fill each section, overwrite the existing text.
- Use OpenSans typeface, 10 point size for the description text.
- The font size may be changed to an appropriate size to fit text if necessary.

Due to time limitations the RE and the participants may not discuss all the phases or, even, based on the RE's suggestions, they might focus only on some of them. This is left to the RE's decision and coordination.

Board 11b – Part (B) – Current and updated design process (Stream 2 ONLY)

In part (B), based on the template provided, the awardees should write:

- The three methodological principles chosen for the project.
- The updated choices for who (participates in each phase), what (happens in each phase), how (the activities are implemented: tools, techniques, principles) and the main theoretical references.
- If choices cannot be made, the participant will take note there of the insights from the discussion and will fill the table after Day 3 activities.

Instructions, an instruction template and a blank template are provided in the Miro Board. The awardees need to read the instructions and fill in the blank template on the right. They need to fill in each section according to the instructions provided in the instruction template. The additional following suggestions are provided:

- When a description is required, keep it to 2-3 sentences max.
- In order to fill each section, overwrite the existing text.
- Use OpenSans typeface, 10 point size for the description text.
- The font size may be changed to an appropriate size to fit text if necessary.

Due to time limitations, the RE and the participants may not discuss all the phases or, even, based on the RE's suggestions, they might focus only on some of them. This is left to the RE's decision and coordination.

Day 4 – Sharing

Wednesday December 2, 2020
9am-12pm Eastern Time

Zoom: https://us02web.zoom.us/j/88527391304?pwd=VTYwQWs2anI2NTRoUGdIZUdtbm9CZz09 (code 270499)

No.	Item	Time
1.	Introduction - welcome from the implementation team at Carleton University - overview of the day	9:05 to 9:10
2.	Regional presentations (Stream 1) - S1 projects' presentations of the results of the workshop activities (10 minutes for each regional group) - Q&A (10 minutes)	9:10 to 9:50
10 minutes break 9:50 to 10:00 am		
3.	Regional presentations (Stream 2) - S2 projects' presentations of the results of the workshop activities (10 minutes for each regional group) - Q&A (10 minutes)	10:00 to 10:40
10 minutes break 10:40 to 10:50 am		
4.	Introduction of Sector Experts and conversations in the break-out rooms*	10:50 to 11:30
10 minutes break 11:30 to 11:40 am		
5.	Closing and next steps - Q&A	11:40 to 12

**The LabOne information package had an error and this item is with the Sector Experts, not the Regional Expert.*

Day 4 will consist of:

1. Group presentation by the awardees on the results of the workshop activities. Presentations will last 10 minutes each, plus 10 minutes for discussion at the end of the presentations.
2. Sector Experts 5 minutes presentations and/or 15 minutes break out rooms meeting for networking between the Sector Experts and their awardees. Sector Experts are invited to participate, but it will not be mandatory. Presentations and conversations will happen with the ones that are there.

Summary of preparatory activities, Boards and workshops

Ahead of Day 2

Complete **Board 1** (to present on Day 2)

Complete **Boards 2, 3/3a, & 4,** plus **3b** for S2, to assist with discussions during Day 2, other workshop activities and ongoing project development

Day 2 (Nov 4th)

Project presentation – Board 1 (can draw on any reflections from Boards 2, 3/3a, 3b)

5 mins plus 5 mins for Q&A

Collective exploration, discussion and synthesis – Boards 6, 7, 8 & 9 completed during session and shared after (**Board 5** is the instructions)

1 hour

Ahead of Day 3

Complete **Board 10** (update Board 4 if needed)

Stream 1Complete **Board 11a / Part (A)** – to present on Day 3

Stream 2 Complete **Board 11b / Part (A)** – to present on Day 3

Day 3 (Nov 18th)

Present: **Board 11a – Part (A)** – Stream 1

5 mins/project

Complete: **Board 11a – Part (B)** – Stream 1

15 mins/project

Present: **Board 11b – Part (A)** – Stream 2

5 mins/project

Complete: **Board 11b – Part (B)** – Stream 2

15 mins/project

Ahead of Day 4

Prepare Regional presentation

Day 4 (Dec 2nd)

Regional presentations:

Stream 1- *10 mins each regional group, plus 10 mins Q&A at the end*

Stream 2 – *10 mins each regional group, plus 10 mins Q&A at the end*

Breakout with Sector Experts

Close

Post Day 4 - Consolidating

After Day 4, the RAs will have a month to produce a collective report on LabOne. The activities will be coordinated by the RACs.

The report will contain:

- A description of what the GDS HUB is, what the Labs are and what LabOne was about.
- Structure of LabOne.
- Detailed description of each day: what happened and by who, the main discussion and topics that emerged.
- Detailed description of the workshop day process, activities and results.
- Outcomes (based on Day 4 presentations).
- Overview of the Survey's feedback.
- Appendix A: detailed description of the workshop activities, plus copy of the original Boards (this document plus the Miro Boards).
- Appendix B: list of references provided throughout the four days of LabOne.
- Appendix C: list of participants – team ones included.
- Appendix D: links to individual project teams introductory video, plus picture and brief bio of the team.

A report template will be provided.

Research Assistances' task during Day 2 and 3

During Day 2 and 3 the RAs besides supporting the REs, they will take notes of:

- Day 2: the collateral topics of discussion in the second part of Day 2, besides the topic suggested by the question.
- Day 2: the main challenges identified for the implementation of the projects.
- Day 3: the main changes implemented by the awardees and why they decided to implement them.
- Day 2 and 3: easiness or challenges experienced by the participants in undertaking the activities.

A specific file to take note will be provided before the events.

Annex F – Project update report

Gendered Design in STEAM in LMICs - Project update report

Purpose of this report

The GDS Program aims to bring together key developments and understanding in gender-aware design processes, outcomes, practices and research. One way to do this is by learning directly from your expertise and experiences. Furthermore, by sharing your experience, we can understand the existing gaps and challenges in undertaking research in Gendered Design, particularly in LMICs, and how to support researchers in overcoming them. This report was designed to gather this information, and to support reviewing your project progression and deliverables.

While you can contact your Regional Expert, Research Assistant Coordinator and the GDS Program Coordinator at any time, the update form will also help us maintain communication with you during your project. We hope you will find it to be a helpful tool for reflecting on your project throughout its duration.

How we will use this information

From the information you share, we can design activities to facilitate discussions and knowledge share across the GDS Program. It will tell us if your project requires more or different support in order to meet program objectives. The information will also be used for the GDS' exploratory research on the characteristics of current research in Gendered Design in LMICs and how scholars interested in researching Gendered Design in LMICs can be supported in undertaking this kind of research (further information on the exploratory research forthcoming).

How to use the update report

We ask that we receive an update report as per the dates below. We would also encourage you to use it to focus discussions you have with your Regional Expert. As this is an official GDS Program tool, the report must be submitted in English.

Each update report submitted will include a summary of the work completed, upcoming key milestones, any challenges, gendered design contributions, knowledge mobilization and networks, and a financial summary. Further information and questions to consider is provided in the guidance form below. Some elements are only needed in your first project update report. You will also need to submit your invoices on these dates for review in order to release the next installment of funds. A separate financial tracking template is provided to assist with this.

When to submit the update report

The schedule for a project update report is shown in the table below. This is also detailed in your contract. The Regional Experts will work with you to complete the update form and send these to us. The Research Assistant Coordinator for your region will also assist with this process. Completed reports are to be sent to GenDesignSteam@cunet.carleton.ca.

Date to submit update	Period covered in the update
Monday 15 March 2021	September, October, November, December, January (2021), February
Friday 16 July 2021	March, April, May, June
Monday 13 December 2021	July, August, September, October, November, December

You will need to submit a financial report along with each project update report, as per your contract, in order for the next installment to be paid once your financial report has been reviewed.

Gendered Design in STEAM in LMICs

Project update report - GUIDANCE

This is a guide with questions to consider in each section with examples.

Update period: Sept '20 to Feb '21 ☐		Mar to Jun '21 ☐	Jul to Dec '21 ☐
Proposal information			
ID:	Stream:	Region:	Country:
PI name:			

Overall project update

A review on the key activities and areas of progress made during the update period. This may relate to tangible milestones in your fieldwork (if so, please identify them), or theoretical thinking.

- Milestone on the completion of a literature review on the concept of…
- Design of the following research instruments:
- Update of the theoretical references:

Forward look – key next steps

An outline of the key milestones of the project that are coming up in the next period (what and how).

- Recruitment of participants will be completed and fieldwork will begin (specifically, pre-project workshop organized together with the partner organization…)
- Materials will arrive for the prototype
- Strengthening the gender dimension of the project together with the Gender Expert

Key challenges (& solutions)

1. A description of the issues faced during the research, due to external and internal factors, and how, if at all, were they overcome. If they were not, what would help you to address them?
   - Difficulties in getting in contact with the target community due to… The team addressed the situation by….
   - Lack of legitimization of the research activities by local partners. Unsolved.
   - The theoretical references do not provide enough support in thinking and addressing gender issues in the local context because…
2. Any risks or challenges that you can see on the horizon? Will your overall timeline be impacted, and how? What mitigating steps have you/can you take?
3. Do you require further guidance or advice?

Gendered design contribution *(please be detailed)*

1. How are you ensuring a focus on gender in this stage of the research process?
2. How are you ensuring a focus on gender in this stage of the design process? *(Stream 2 only)*
3. How has the focus of gender influenced your way to approach research in design? Please be detailed. *First update only.*
4. How has the focus of gender influenced your way to approach design processes? *(Stream 2 only)* Please be detailed. *First update only.*
5. What has been the main development in knowledge of gendered design that is local? (i.e. theoretical and practical references). *First update only.*

Learning, knowledge mobilization, networks and opportunities

1. What are the main learnings achieved so far through GDS activities and your research activities? How did they happen?
2. What information about your project, or potential information, has been shared, with who, how and why?
3. Describe new or expanded connections made in support of your project and why.
4. Have new opportunities to work with others developed through the project, how and why?
5. Describe how you have maintained communication with your team and Carleton University with the 'network enabling fee'.

Financial spending summary – Invoice no.

This is a summary of the total spend for this period. Please also submit a financial summary report with supporting invoices and receipts (the GDS Program Coordinator will share a template).

Closing thoughts from the Regional Expert (RE)

Any further thoughts or key observations from the RE. This could also be used to design additional GDS activities.

Thoughts from the Gender Expert (GE)

Any thoughts or key observations from the GE. This could also be used to design additional GDS activities.

Thoughts from the Sector Expert (SE)

Any thoughts or key observations from the SE. This could also be used to design additional GDS activities.

Other notes

Gendered Design in STEAM in LMICs

Project update report – TO BE SUBMITTED

Update period: Sept '20 to Feb '21 ☐		Mar to Jun '21 ☐	Jul to Dec '21 ☐
Proposal information			
ID:	Stream:	Region:	Country:
PI name:			
Overall project update			
Forward look – key next steps			
Key challenges (& solutions)			
Gendered design contribution			
Learning, knowledge mobilization, networks and opportunities			
Financial spending summary – Invoice no.			
Total spent (local currency): Total spent (CAD): *Remember to submit a financial summary report and supporting invoices and receipts.*			
Closing thoughts from the Regional Expert (RE)			

Thoughts from the Gender Expert (GE)
Thoughts from the Sector Expert (SE)
Other notes

Annex G – LabTwo | Session One information pack

Carleton UNIVERSITY

GENDERED DESIGN IN STEAM

Presentation

Gendered Design in STEAM (GDS) in Lower-and Middle-Income Countries (LMICs)

LabTwo – Session One

The role of power in GD

by Chiara Del Gaudio and Raquel Noronha

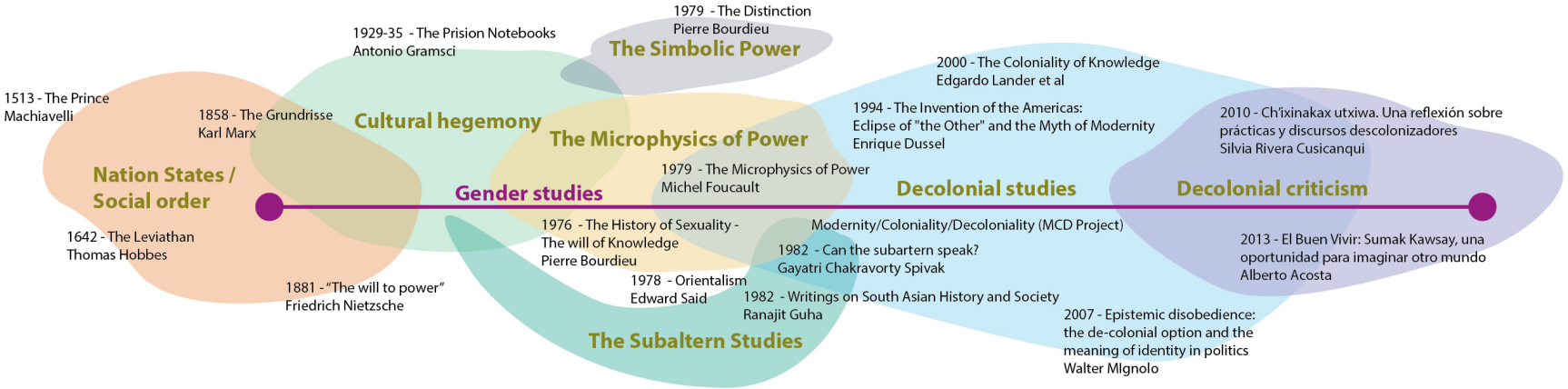
Canada

IDRC | CRDI
International Development Research Centre
Centre de recherches pour le développement international

The role of power in GD

- The design process consists of, and is the result of, the interweaving and interaction of several voices and perspectives, which can be clearly known and expressed, but also subjacent and hidden.
- Cultural specificities contribute to informing these perspectives and voices.
- They underlie design practices and play a role in the power dynamics that define the design process.
- This comprehension enables a better understanding of why gender issues and opportunities are embedded in the design process.

Power studies timeline (work in progress…)



Four concepts

- **DISCURSIVE FORMATIONS and DISPERSIONS:** refers to losing the sense of the origin of discourses. The naturalization and alienated reproduction of the practices that operationalize the discourse. Within the scope of gendered design, the use of methods, techniques, and tools can be co-opted by discourses engendered in norms, values, and standards that, potentially, will then be understood as truth.

    - **What type of tool(s) did you choose? How did you choose them?**
    - **Do they reveal a way of thinking and acting on gender issues? What are these?**

- **CONDITIONED PARTICIPATION:** when we think about design practice (and research in design) and even more about participatory design, we need to reflect on the conditions placed on the possibility of participating:
    - **Who is allowed to participate?**
    - **What role can someone play?**
    - **What activities can be attributed to those who decide to join the process?**

  All of this has a strong influence on the possibilities of each person's contribution and how this will actually be considered and made tangible. This produces conditioned inclusions and participations.

Four concepts

- **TIME CONTROL:** With this concept, we refer to the relationship between the timing of the design (and research process) and the timing of participants' lives. Specifically, how the design process we propose defines the time for participation, and informs future timings according to the criteria aligned with design processes and societal norms.
  - How does this consider the lives, commitments, rituals, and timing of the ones that participate? And how does that differ for different genders?
  - How do they adjust and adapt their lives to the design process and outcomes?

- **ENGAGEMENT IN MAKING:** Here we reflect on how the outcomes answer social gender norms and where we create, or not, the space for different understanding, shapes, and use, in terms of design outcomes.
  - How do we inform outcome use and properties?
  - What are the differences between gendered products and non-gendered ones (if even possible)?

Session Dynamic

8h-8h20 - Brief introduction

8h20 – 10h20 Individual presentations: 15 minutes for each participant + Q&A and comments (suggestions, similar experiences, etc.)

10h20 – 10h30 Break

10h30 – 10h50 Collective Discussion: What is emerging? What are we noticing? What can be the path forward?

10h50 – 11h Closing remarks (next steps)

Carleton UNIVERSITY

GENDERED DESIGN IN STEAM

Activity instructions

Gendered Design in STEAM (GDS) in Lower- and Middle-Income Countries (LMIC)

LabTwo – Session One

The role of power in GD

by Chiara del Gaudio and Raquel Noronha

Canada

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Introduction

The role of power in GD

The design process consists of, and is the result of, the interweaving and interaction of several voices and perspectives, which can be clearly known and expressed, but also subjacent and hidden. Cultural specificities contribute to informing these perspectives and voices. Therefore, they underlie design practices and play a role in the power dynamics that define the design process.

This comprehension enables a better understanding of why gender issues and opportunities are embedded in the design process.

In this session, we will explore together the interconnection between power, design, and gender, drawing from post-modern and decolonial perspectives. Specifically, drawing from Michel Foucault's and Silvia Rivera Cusicanqui's work, we have identified some key concepts to analyze, and think about a design practice that embraces gender issues and opportunities.

Open and collaborative conversation based on research and design experiences, theoretical reflections, and speculations will characterize the meeting. At the beginning of the session, we will provide an overview of the concepts that we identified. Then, we will focus on one of them for an in-depth group discussion about it.

The concepts that we will explore together is **discursive remission** and **conditioned participation**. These concepts will be discussed by exploring your design (and research) practice.

References:

Foucault, M. (2002) **The Archaeology of Knowledge.** London and New York: Routledge.

Raffestin, C. (1980) **Por uma geografia do poder.** São Paulo: Editora Ática.

Rivera Cusicanqui, S. (2010) **Ch'ixinakax utxiwa:** Una reflexión sobre prácticas y discursos descolonizadores. Buenos Aires: Tinta Limón.

Instructions

What to do for Session One.

To participate, and before the session, we ask you to read and reflect on the concepts we are proposing for this exploratory session. Then, think about situations from your GDS design project to exemplify the concepts. If no example can be found from your GDS project, think about one from your professional history. Then, please answer the questions we raise in the concept descriptions on **discursive remission** and **conditioned participation** that follow in the coming slides.

You will present these examples and answers during the session. Bring **two examples, one for each concept**. You will have 15 minutes for presenting your reflections and examples.

Finally, we are providing a template for the presentation (the slides that follow the concept descriptions). Use it to prepare your presentation. Use one slide for each example. In each slide, insert an image, a brief explanation (what that example is about and what it represents), and other theoretical references that you use to think about the identified issue. Your reflections will feed the discussion.

Discursive remission

Concept one

Drawing on Foucault's work, discursive remission refers to losing the sense of the origin of discourses. When a discourse and its practices are assumed as something given, the origin of the discourse gets lost. The naturalization and alienated reproduction of the practices that operationalize the discourses occur. Among these practices, we highlight the very act of designing and the understanding of gender issues. Within the scope of gendered design, the use of methods, techniques, and tools can be co-opted by discourses engendered in norms, values , and standards that, potentially, will then be understood as truth. We, as designers, are not always aware of all this.

According to Raffestin, power can be characterized in two ways: by its striking presence or by its invisibility. In the first way, characterized by the use of the capital letter, Power is present in the way the State manifests itself, through its institutions and its laws. Although authoritative and regulatory, it is something familiar because we are used to it. In the other case, power (with the lowercase letter) spreads everywhere. This does not mean that it is in everything, says Foucault. However, it emanates from everywhere. From this point of view, the author invites us to look at relationships. It is through the relationships that this power is exercised. For Foucault, resistance to the power's impositions does not exist outside the relationship. Power and resistance are intrinsic to each other.

In the context of material culture, forms of co-optation by dominant discourse are perceived as normal when power relations are more active than those of resistance; and to the extent to which we do not notice them. For example, Rivera-Cusicanqui alerts us from the traps of the decolonial discourse that if on the one hand, reminds us of emancipatory discourses, on the other hand, reinforces the legitimacy of hegemonic powers since the discourse on autonomy overlaps its practices.

Discursive remission (cont.)

Concept one

We invite you to discuss the level of discursive co-optation that is intrinsic to our design practices, through the creativity tools we choose, how we organize the design flow, through to the software and applications selected, etc.

- What type of tool(s) did you choose? How did you choose them?
- Do they reveal a way of thinking and acting on gender issues? What are these?
- Are you aware of this?
- What is the relationship with gender issues and the relative established orders and power dynamics that the ones you have chosen bring with them?

Considered as normal, the tool is necessary for the standardization process. The standardization process eliminates gender differences and (establishes) and reproduces a standard to be achieved:

- What happened in your case?
- How do such choices impose themselves almost invisible, as "normal" ways of practicing design? Can you look at your process critically and highlight it?

Conditioned participation

Concept two

The concept of conditioned participation that we want to discuss here emerges from Foucault's studies on disciplinary dispositive.

In Foucault, a dispositive is a network of relationships between heterogeneous elements (for example institutions, regulations, discourses, laws, scientific statements, etc.) that is constituted according to a specific strategic purpose (in the case of disciplinary dispositive, this is the production of politically docile and economically profitable individuals).

Therefore, disciplinary devices are present and active in any sphere of human life and activity, and inform and discipline our participation in different societal spheres. Without us noticing it, they define what can be done, how it can be done, and allow it to happen. They define the society in that we live, the objects we produce, and that which constitutes it, as well as any processes of knowledge production. They influence us and who produces them, since we overlook their influence and accept the social and knowledge norms and the order they are established and promoted.

- What does this have to do with design?
- And with a design practice that aims to have a more critical and inclusive stance about gender issues?

It shows us that when we think about design practice (and research in design) and even more about participatory design, we need to reflect on the conditions placed on the possibility of participating:

- Who is allowed to participate?
- What role can someone play?
- What activities can be attributed to those who decide to join the process?
- What activities are only for the designers or for some specific actors? And why?
- At what stage of the process are people invited to participate? What are they allowed to say (according to the time they are allowed to participate, and how often they take part in the activity)?

Conditioned participation (cont.)

Concept two

Or even:

- How to open the process to different voices and embrace different standpoints in a design process that seeks to embrace differences?
- How is someone invited to join the process?
- What are the social dynamics and rituals that constitute the action and social interaction in the context? How do they influence and define someone's participation?
- How does your gendered design approach address participation?
- How do these questions apply to the practice of gendered design? What emerges?

All of this has a strong influence on the possibilities of each person's contribution and how this will actually be considered and made tangible. This produces conditioned inclusions and conditioned participations. Have you ever stopped to think about it? By sticking to what is proposed by social and disciplinary norms, conditioned inclusions are produced and exclusions of content and people from the production of knowledge, which in the design process takes the form of the (tangible and intangible) outcomes of the process.

If we do not reflect on this, the simple inclusion of minorities in the design process will not contribute to redefine the balance of power. It becomes essential to reflect on the conditions we establish for someone's participation.

Example 1: Discursive remission

Title:

Subtitle: maybe short description

Provide a brief explanation to describe where the concept fits in with your GDS project, or your previous professional experience (what that example is about and what it represents). Use any images or photos as you like. Detail any other theoretical references that you used to think about the issue below.

References:

If it´s possible, present us local references on power and gender.

Example 1: Discursive remission (cont.)

Title:

Subtitle: maybe short description

Continue here you example linked to the concept, discursive remission, if needed

References:

If it´s possible, present us local references on power and gender.

Example 2: Conditioned participation

Title:

Subtitle: maybe short description

Provide a brief explanation to describe where the concept fits in with your GDS project, or your previous professional experience (what that example is about and what it represents). Use any images or photos as you like. Detail any other theoretical references that you used to think about the issue below.

References:

If it´s possible, present us local references on power and gender.

Example 2: Conditioned participation (cont.)

Title:

Subtitle: maybe short description

Continue here you example linked to the concept, conditioned participation, if needed

References:
If it´s possible, present us local references on power and gender.

Annex H – Budget change request form template

Gendered Design in STEAM in LMICs - Budget change request

Use this form if you would like to propose changes to your budget allocation and/or forecast. For example, if you would like to move allocation of funds between different budget categories. Please keep in mind any conditions of the grant award as explained in Appendix 3 of your contract.

GENDERED DESIGN IN STEAM

Project information			
ID:	Country:	PI name:	Date of request:

Budget category	Original budget	New budget	Reason for change
All faculty/lecturers/staff			
External			
Student stipends & RA scholarships			
Research permits and clearances			
Fieldwork costs			
Local travel & subsistence expenses			
Services and fees			
Equipment & materials			
Research dissemination			
Technology to enable communication			
Network enabling fee			
Total (CAD)			

Only fill in the line of budget that you wish to amend. Budget should be completed in CAD.

Further information
PI signature:

Change confirmed (Carleton)	
Name:	Date:
Notes:	
Signature:	

Annex I – GDS Interview with project leads guide

Reuse of this interview in any way must include the following citation: Marshall, D. & Del Gaudio, C. (2021) Gendered Design in STEAM Program, Carleton University

August 18, 2021
Authors: Dominique Marshall and Chiara Del Gaudio
This guideline has been designed and will be used within the parameters of ethical approval for the research of the GDS program by Carleton University. The ethic clearance #115041 was granted on February 18, 2021.

The leader of each project will be interviewed with a semi-structured interview based on an oral history approach.
Interviews will be recorded on Zoom and transcribed.
Interviews with Portuguese and Spanish native speakers will be held in Spanish and Portuguese, then transcribed and translated.

SCRIPT

The interview will be conducted according to the following script.

Part A

The interview will start by saying: Tell us the story of your project…
After that, they will allow the interviewee to speak freely without interruption.

When the interviewee stops, the interviewer will try to address the following themes if they had not been addressed previously.

Specifically, the interviewer should try to address the following themes when they have not (or little) been mentioned from the interviewee's very words in their first answer.

It is important to allow the interviewees to use their vocabulary and not to force the use of specific words such as design, gender, STEAM. Therefore, the interviewer should try to address only the topics that have not been mentioned in any way/with any (even alternative) word. This might even lead to an interview without the words design, gender, STEAM in it.

Part is divided into A1 and A2:

- A1 is about the project in general.
- A2 about the program in particular.

A1

Note: in yellow we highlighted the key themes addressed in part A1.

- The connection between their life and professional experience and the idea at the base of their research project.
- The relevance of the research project for the local community/context;

Furthermore, in this regard, see if they explain/mention and try to address is if they do not:

  - which community they are talking about*
  - if they do not mention local, do it and see how they define it

- their former idea of community engagement/participation

Note: notice the language used in relations with communities (if necessary) and how does this colour their understandings of the notions of gender, design, and STEAM

**see which community they mention without forcing any region/country/continent category on them.*

- The relevance of the research project for the discipline;
  In this regard, see if they explain/mention and try to address is if they do not:
  - their former understanding of questions of relations between disciplines
  - different types of STEM knowledge (ITK, not scientific)
- The process to make their research/design process gender-inclusive;
  In this regard, see if they explain/mention and try to address is if they do not:
  - their former understanding of questions of women, men/family/roles/ gender**
  - class (***rich and poor)/generations (***young and old; children and aged..)
    **use all three words in order to force the word "gender" on them
    ***use both words in order to not force one of them on them
  - their former understanding of questions of design
  - their understanding of the place of making in the project****
    ***use "making" first if they don't use "design"
- Challenges to gendered design practice and research posed by COVID-19 and how they have addressed them;

Important: make sure that they have spoken of before and during (what took shape during the project) the project.

A2

Note: A2 is a part of the interview that should be secondary unless the initial answer to A1 question makes it bigger.

- The program's influence
  - Role of the meetings with regional experts.
  - Role of the regional grouping.
  - Role of the meetings with sector experts.
  - Role of sector grouping.
  - Role of other meta-activities:
    - LabOne and LabTwo, and project advancement.
    - Bulletin.
    - Expectation regarding the forthcoming exhibit.
    - Others.

Part B

The interviewer will ask:

- How do you see the sequels to this adventure? What would help? What might be possible?
- If we think about the sustainability of this research and practice over time, what would you say/think…
- Any dreams for the future? (more general)

Annex J – LabTwo | Session Two information

The first activity was to produce a summary of the projects' prototype(s) background and consider these questions for each prototype activity identified:

- Prototype description:
  - What is the description of the prototype?
  - How will the prototype be implemented?
  - Is the prototype physical, digital, or other? Describe.
- Purpose and objectives of the prototype:
  - Why is a prototype needed?
  - What was the prototype's intended purpose?
  - What does the prototype aim to achieve?
  - What are the objectives?
- Gendered lens:
  - What are the gendered considerations in regards to the prototype?
  - How does the prototype address gender implications?

The second activity was to create a timeline of all the prototyping activities, including:

- Description of the prototyping activity.
- When did the activity take place?
- What did it do?
- Who did it involve?
- What were some of the challenges or limitations?
- What were some of the key learnings or insights from the process?
- How did the next iteration change?

Research Assistants and project presentations

Wednesday 20 October

Maya Chopra:

ID57 - Developing a hybrid fish dryer to improve processing for small-scale female processors in Nigeria

Victoria Asi:

ID65 - Constructing an eco-friendly generator for low-income female artisans in Nigeria

ID71 - Developing small wind turbines with local women for domestic use in Mauritius

Dina Al Rubaye:

ID79 - Modernizing the batik industry to improve income for women in Tanzania

Alicia Gal:

IDA - 3D-printed prostheses to support low-income female survivors of domestic violence, accidents or cancer treatment in Brazil

Friday 22 October

Rezwana Afrose:

ID33 - Improving access to financial services for women in Ethiopia

ID38 - Designing support services for women experiencing workplace harassment in Pakistan

Andrea McIntosh:

ID47 - Improving the design of upland fish drying technology for female fish vendors in Nigeria

ID88 - Developing new construction techniques based on the work of women in Brazil

Ona Bantjes-Rafols:

ID80 - Reimagining urban territories for women's autonomy in Colombia

Annex K – Final report template for awarded project teams

This is the content framework for you to follow for your final report. Along with a front cover, the main sections to include are numbered,

- with any sub-sections shown in bullets.

The blue text (grey here) provides some guidance on what to write about and the type of information to include within the different sections.

There are also questions and useful prompts in the blue text to help formulate this information and support your report write-up.

Within Section 5 (Outcomes) there are two sub-sections on 'Gendered design contribution' and 'Learning, knowledge mobilization, networks and opportunities' – these have specific questions that will need answering (the questions will be familiar to you as they were in the update report).

You are free to use your own style, format and branding for the report.

Inclusion of any visuals is welcomed.

Use an Appendix and/or Annexe as needed. (An appendix contains data that cannot be placed

in the main document and has references in the original copy or file. An annex is usually a standalone document that offers additional information than contained in the main document.)

There is no maximum word count (apart from for the Abstract). However, each section (excluding 1 & 2) should have a minimum 500 – 800 words. You can, and of course will need to, write more for some of the substantive sections where each sub-section should have a minimum 500 words.

To support your final financial reporting, a table with instructions will be sent to you shortly.

Submit your final report as a PDF document.

Front cover

Please include the following information:

- Title
- Country, region
- Name of Principal Investigator
- Name of Co-Principal Investigator
- Institution
- Date submitted

1. Project overview

- Title
- Abstract (max 300 words)
- Keywords

2. Contents

List of Tables (if needed)
List of Figures (if needed)

3. Introduction

- Background information
  The purpose of the study, contextualization of the study, and its relevance within the research field/existing scholarship.
- Research problem
  The basic rationale for the project and the research problem or problems that were addressed. Has the understanding of the problem(s) evolved since the initial project proposal? Describe this evolution and the reasons behind it.
- Research objective
  The general goal and specific objectives of the project.

4. Methodology

- Research processes and methods
  Provide an overview of the research processes and describe the methods and analytical techniques used and any problems that arose. Research instruments such as questionnaires, interview guides, and any other documentation useful to the project should also be described or included.

  Indicate and explain any changes in direction that may have occurred since the project was designed.
- Activities
  Describe in detail the research process in terms of activities. What happened? What was done with available resources? Describe the activities supported under the project and their timelines.

  Include a timeline of the main activities undertaken in a visual format where possible. (Stream 2 projects can use their Miro boards created from LabTwo).
- Project management and implementation
  Has there been any learning about the implementation and management of the project's activities? Were certain aspects of project management and implementation particularly important to the success of the project?

  Provide a summary of your research expenditure and overall costs for the project. Include the table (that will be sent to you with further instructions) based on your actual costs.

5. Outcomes

Project outcomes include changes in behaviours, attitudes, practices, capacities, policies, relationships, technologies, etc. that promote sustainable and equitable development and reduce discrimination. They may result from the research process or the application of the research findings.

It is important to consider both tangible achievements (outputs – in a separate section, 6, below) and resulting consequences (outcomes), together with derived learning. The analysis of outcomes should take into account social, gender, and environmental dimensions wherever appropriate and possible.

What were the main outcomes of the project? How did the project contribute to:

- Scientific, research, or knowledge innovations?
- Changes in behaviour, capacities, actions, or relationships of researchers, networks, or research institutions?
- Changes in behaviour, capacities, actions, or relationships of research users or those affected by the research process or findings?
- Policy influence (e.g., expanded policy capacities of researchers; broadening policy horizons of policymakers; and affecting policy regimes)
- Technology development, adoption, and adaptation
- Changes in the state of economic, social, health, political, or environmental conditions

What contributed to these outcomes and what lessons did you draw from the experience? What was learned

about approaches or broad design elements for conducting research, building capacity or influencing policy or practice in the field and circumstances of the project?

- Research processes and methodology

  Indicate any particular learning and qualities of different methods used for addressing your research problem and generating desired outputs and outcomes.

  What problems arose, and what changes in orientation occurred? What caused these changes? Were certain aspects of project design particularly important to the degree of success of the project?

  How did the activities of the GDS Program contribute, if at all, to your research project design and approach?

- Gendered design contribution

  Please address each of these questions and include any other relevant discussions beyond these questions as needed to fully demonstrate the gendered design contribution:
  - How did you ensure a focus on gender in your research process?
  - How did you ensure a focus on gender in the design process for your prototype? (Stream 2 only)
  - How did the focus on gender influence your way to approach research in design?
  - How did the focus on gender influence your way to approach design processes for your prototype? (Stream 2 only)
  - What has been the main development in the knowledge of gendered design in your local context? (i.e. theoretical and practical references).

- Learning, knowledge mobilization, networks and opportunities

  Please address each of these questions and include any other relevant discussions beyond these questions as needed:
  - What were the main learnings achieved through GDS activities and your research activities? How did they happen?
  - What information about your project, or potential information, has been shared, with who, how and why?
  - Describe new or expanded connections made in support of your project and why.
  - What new opportunities to work with others developed through the project, how and why?
  - Describe how you have maintained communication with your team and Carleton University with the 'network enabling fee'.

6. Outputs and capacity

Outputs are the directly achievable products of a project's completed activities. For example, policy briefs, journal articles, research papers, trained people, etc. Project outputs are any and all research-related outputs and results of the project and publications and reports produced in relation to the project.

What were the main specific achievements in terms of research, capacity building (training and education), and policy/practice influence? What was learned about the production or realization of research, capacity, and policy or practice outputs – for example, problems that arose, or changes in orientation that occurred? What contributed to these outputs and what lessons did you draw from the experience?

Highlight any unique or innovative outputs.

If appropriate, explain why outputs were not completed or were of poor quality.

- Dissemination

  What were the main outputs of the project? Provide a list of all project outputs, including complete citations. Identify any outputs that were planned, but which have yet to materialize. Specify when these outputs will be completed, including plans for any future publications and/or dissemination of the research.

- Research
  - Research reports

- Technologies (broadly defined, including social processes)
- Milestones achieved in knowledge-building and networking

- Capacity building
  - Numbers of individuals who have completed training or other (mentoring etc.) capacity-development activities – in research, capacity development (e.g., training of trainers), and policy (e.g., training/informing/involving of policymakers, stakeholders, and opinion shapers)
  - Milestones in capacity development of teams, institutions, networks, and partnerships, etc. (may include both human and other, equipment or infrastructure support, outputs)
  - Comment on the sustainability of increased institutional capacities, and on particular contributions to capacity building of women or marginalized social groups
  - Achievement in individual and organizational capacity (e.g., are researchers in the organization writing better proposals, obtaining successful funding from other donors, displaying leadership, better able to do research, better able to conceptualize and ask research questions, better able to draw conclusions and synthesize, more effective in making linkages with other stakeholders, making effective interventions in global debates, and participating in South-South and North-South dialogues?).

- Policy and practice
  - Policy analysis, recommendations, and documents
  - Other milestones in terms of policy/practice stakeholders and processes, such as the involvement of research users or ultimate beneficiaries

7. Overall assessment and recommendation

What contributions did the activities of the GDS Program (e.g. Labs, the Bulletin, network support, etc.) make to the development of your research? What did you find particularly useful?

What would you do differently as a result of this experience, and what general and useful lessons can be derived for improving future projects?

Describe one thing that happened during your research project that you were not expecting that supported its development.

Describe any recommendations that you would like to make to Carleton University about the overall experience with being part of the GDS Program. However, any sensitive or confidential information should be addressed through a direct exchange with the program coordinator, and documented and filed separately.

8. Conclusion

A discussion of whether or not the objectives were met. If the objectives were not met, outline the reasons why and the subsequent impact on the project. Objectives may have also evolved, and the reasons and learning involved should be described. The degree of fulfillment of any new objectives should also be assessed.

Bibliography/References

As needed by the project

Appendix

As needed by the project

Annex

As needed by the project

Annex L – Project poster templates example

GENDERED DESIGN IN STEAM

Para,
Rio de Janeiro,
Brazil

Team

Maria Gamifia Muller
Principal Investigator
PhD in Fashion Design

Jorge Ofsou Shu
Principal Investigator
PhD in Anthropology

Diana Silva Anku
Principal Investigator
PhD in Biology

Xi Kumbawai Lopes
Principal Investigator
PhD in Psychology

Juan Peing Cudjoe
Principal Investigator
PhD in Civil Engineering

Institution

University of the State of Sao Paulo

> *"Gender design quote tion acinia, tincidunt duinec, setincidunt nou leopardo Integer egestas."*
>
> — *Maria Pinheiros*

ID55 Developing a lorem ipsum fish dryer to improve for processing of female low income ipsum

TECHNOLOGY

ART

ACCESIBILITY

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Outcomes

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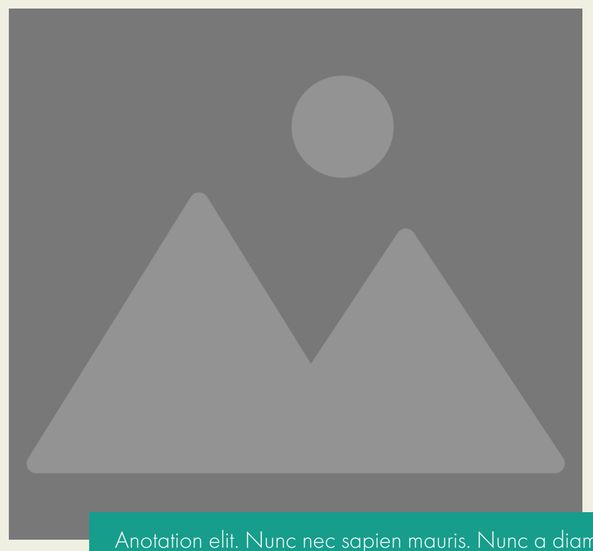

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Methods

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Lessons & Future Directions

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Learn more

www.carleton.ca/gendesignsteam/

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@GenDesignSTEAM

GenderedDesign STEAM

A partnership between

IDRC · CRDI
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Rio de Janeiro,
Brazil

ID55 Developing a lorem ipsum fish dryer to improve for processing of female low income ipsum

TECHNOLOGY

ART

ACCESIBILITY

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc nec sapien mauris. Nunc a diam convallis, feugiat est vel, commodo mi. Nulla mollis nisi vel nisl pretium, sit amet dictum nunc fermentum. Vivamus sit amet ullamcorper justo, id lacinia felis. In risus nulla, tristique sit amet odio sed, consectetur condimentum tellus. Maecenas non lorem nisi. Fusce in ullamcorper lorem. Tistique sit amet odio sed, consectetur condimentum tellus. Nulla mollis nisi vel nisl pretium, sit amet dictum nunc vivamus sit amet ullamcorper justo.

Feugiat estival de ete bariloche com fogos de artificio lorem ipsum.

Team

Maria Gamifia Muller
Principal Investigator
PhD in Fashion Design

Jorge Ofsou Shu
Principal Investigator
PhD in Anthropology

Diana Silva Anku
Principal Investigator
PhD in Biology

Xi Kumbawai Lopes
Principal Investigator
PhD in Psychology

Juan Peing Cudjoe
Principal Investigator
PhD in Civil Engineering

Institution

University of the State of Sao Paulo

Outcomes

- Nullam maximus semper consectetur. Aliquam erat vounc tempor. Cras fermentum lacinia arcu ut sodales efficitur tempor. Aliquam sapien velit, in dictumeget velit semper.
- Vivamus molestie consectetur felis at lobortis. Proin sit amet quam vel augue. Donec sodales 80% efficitur tempor. Aliquam sapien velit, rhoncus in massa vitae, dictum semper dolor malesuada maximus. Donec a aliquet neque, ornare vulputate lectutankamons.
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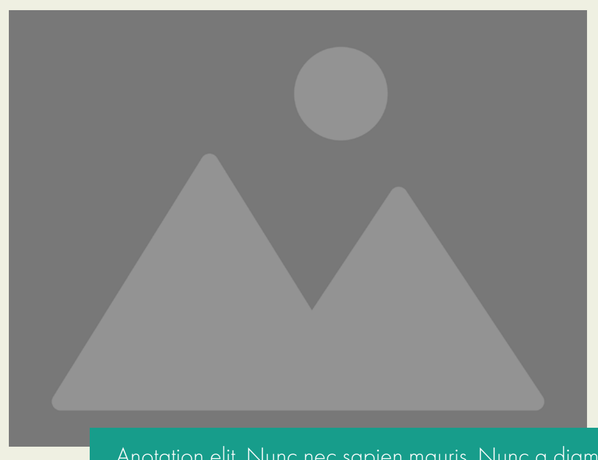

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> *"Gender design quote acinia, tincidunt duinec, setincidunt nou leo. Integer egestas, at lacusis mollis aliquet tempor, semi nunca vulputate porto vino notte inteira come pasta de manha enquanto. O design ele tem que servir a sociedade e nao so quem tem poder aquisitivo"*
>
> — *Maria Pinheiros*

Methods

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Lessons & Future Directions

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Learn more

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GENDERED DESIGN IN STEAM

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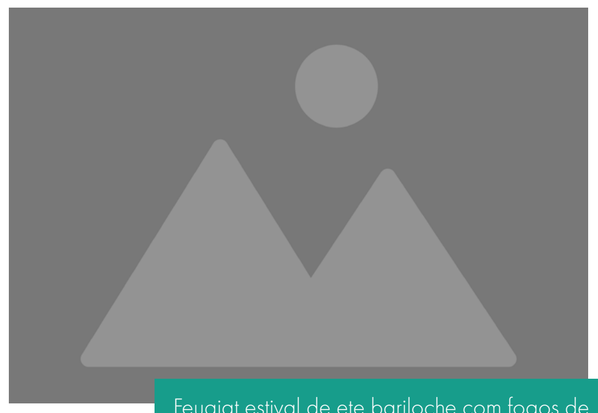

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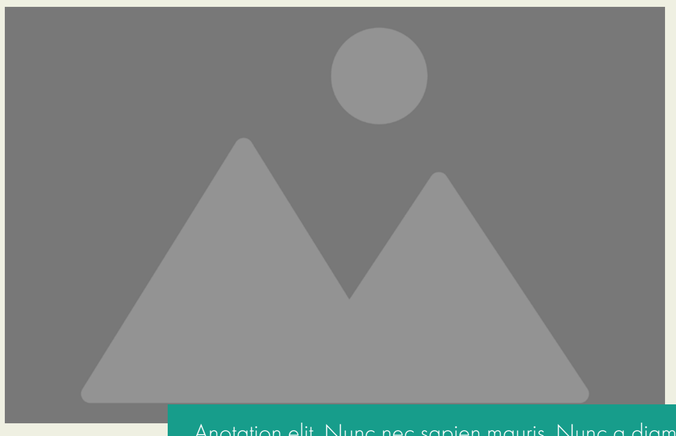

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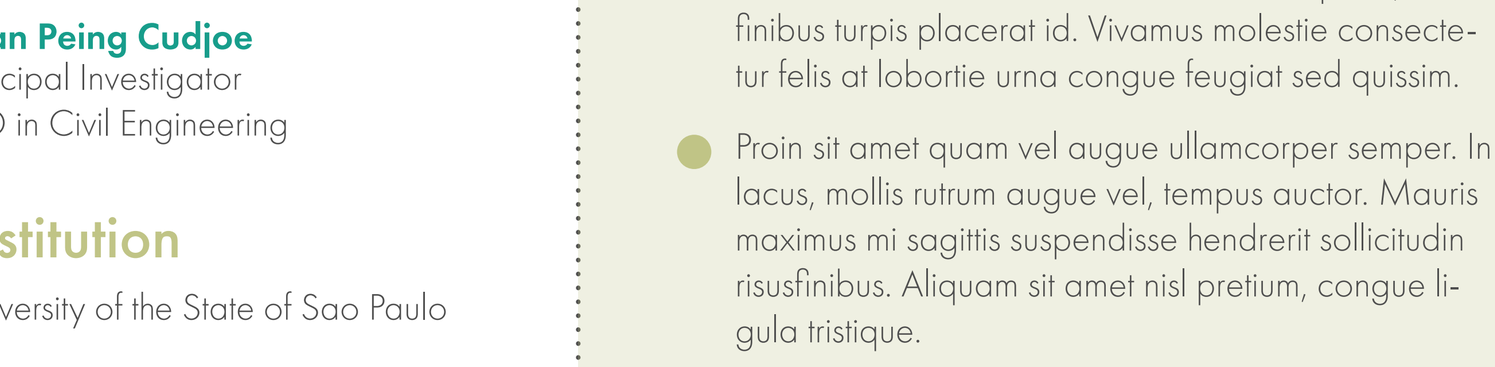

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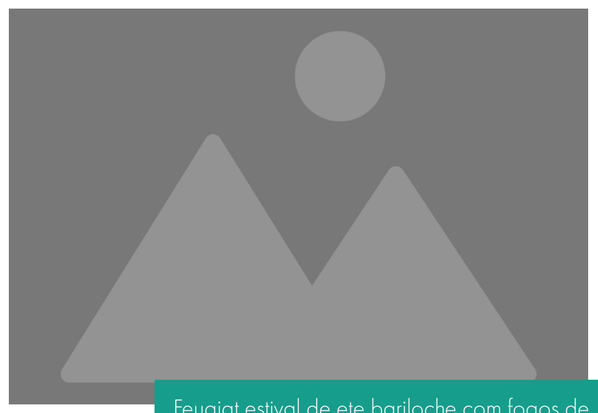

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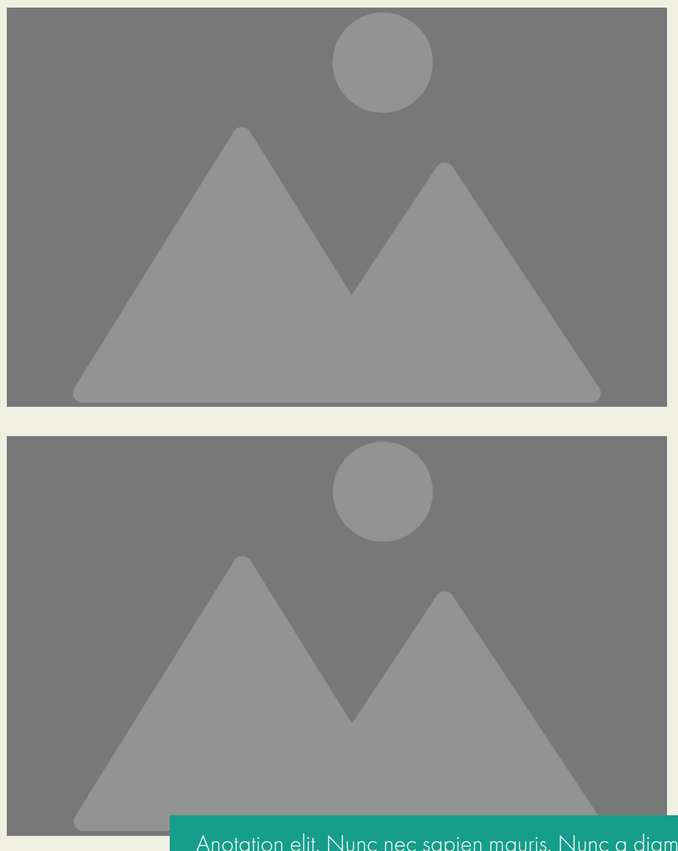

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Lessons & Future Directions

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Learn more

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Annex M – GDS Program poster

Gendered Design in STEAM

From April 2019 to October 2022, the GDS Program has been investigating and advancing gendered design through 20 grant-awarded projects with scholars at institutions across the global souths. The Program aimed to contribute to more inclusive technological designs in science, technology, engineering, the arts and math by building capacity in gendered design and innovations to address challenges and biased perceptions predominantly faced by women in low- and middle-income countries (LMICs). The gendered design approach brings diverse and critical perspectives to the design process to reshape how we identify design challenges, the process to address them, the solutions to these challenges, as well as the reach of their benefits.

Team

core - Carleton University

Bjarki Hallgrimsson
Co-Principal Investigator, GDS Program
Director, School of Industrial Design

Dominique Marshall
Co-Principal Investigator, GDS Program
Professor, Department of History

Chiara Del Gaudio
Investigator, GDS Program
Assistant Professor, Graduate Program
Coordinator, School of Industrial Design

Kerry Grace
Program Coordinator, GDS Program

Research Assistant Coordinators
Ona Bantjes-Ràfols, Maya Chopra, Amie Wright

regional

Emmanuel Mutungi
Regional Expert for Africa, GDS Program
Dean, School of Art and Industrial Design, Kyambogo University

Raquel Noronha
Regional Expert for Latin America, GDS Program
Adjunct Professor and Director of Design and Technology, Head of Graduate Program in Design, Federal University of Maranhão

Yoko Akama
Regional Expert for Asia, GDS Program
Associate Professor, Communication Design, School of Design, Royal Melbourne Institute of Technology University, Australia

gender

Amina Mire
Gender Expert, GDS Program
Associate Professor, Sociology, Undergraduate Program Coordinator, Carleton University

"The enthusiasm shown by our colleagues in Africa, Latin America and Asia is clearly indicative of how important community-oriented STEAM work with a focus on Gender is."

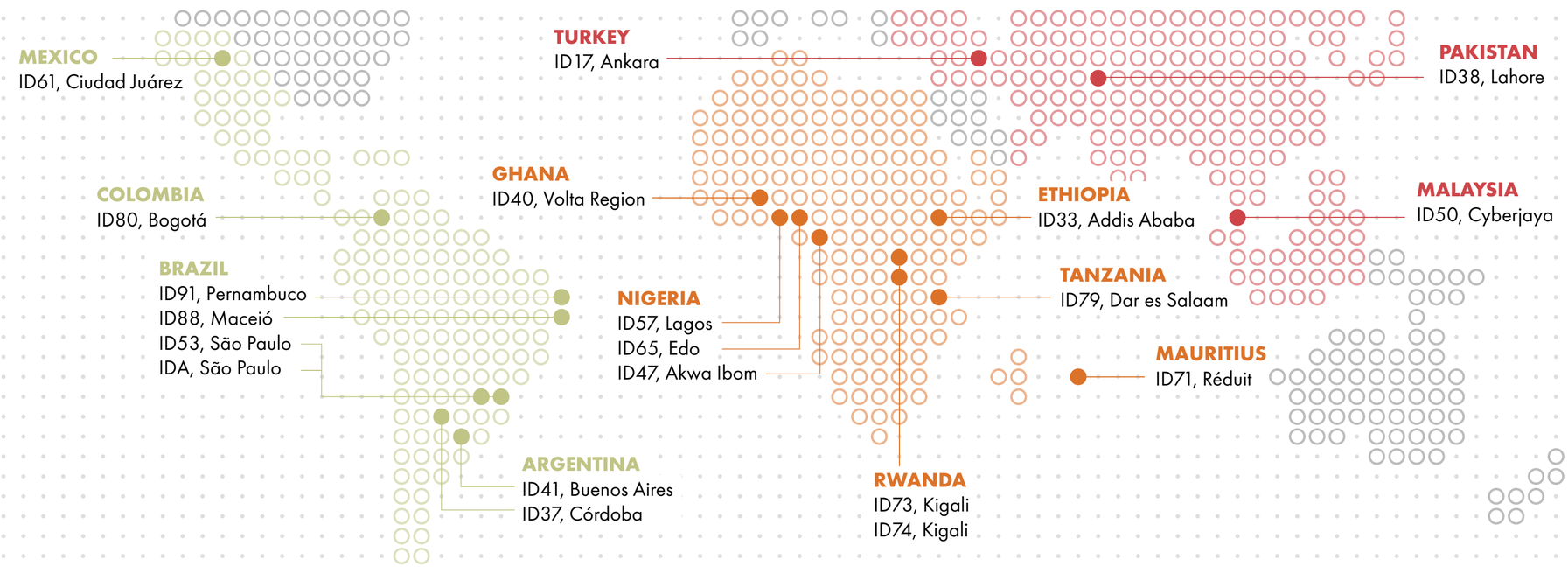
Bjarki and Dominique

What is STEAM?

To support STEM researchers to be more socially focused, we adjusted our terminology from STEM to STEAM. To fully affirm the relevance of this approach for the desired socio-technical transformation, we included the arts and social sciences as full partners in the program.

$1.6 Million Grants
13 Countries
20 Academic Research Teams
11 Prototype Intensive Research Projects
9 Research Case Studies
16 Carleton Research Assistants

Projects



Sector Experts

Adam Weiss
Transportation Engineering

Adrian Chan
Systems & Computer Engineering, READi

Burak Gunay
Civil & Environmental Engineering

Chiara Del Gaudio
Industrial Design

Fred Afagh
Mechanical & Aerospace Engineering

Jill Wigle
Geography & Environmental Studies

Katie Bonier
Architecture & Urbanism

Mika Westerlund
SPROTT School of Business

Tracey Lauriault
Journalism & Communication

Vivian Nguyen
Environmental & Interdisciplinary Science

Methods and Tools

- Transdisciplinary designed-based approach to the research: – iterative, abductive, strategic, and open processes
- 'Research-through-design' approach from a Participatory Design perspective: where knowledge is built from practical experimentation with design processes
- Activities and workshops that encouraged networking and collaborative knowledge building on gendered design
- Ad-hoc designed knowledge mobilization tools e.g., GDS Bulletin publication

Outcomes

- Developed definitions of gendered design built upon local context and knowledge
- Mobilized a strong collaboration between academics and communities in the Northern and Southern hemispheres
- Supported and enhanced Southern and Indigenous academic voices, approaches, and cultures
- Increased the visibility of local communities studied by these scholars
- Promoted the dissemination of Southern research results
- Created opportunities for researchers across the Carleton campus to work together with a common goal and do interdisciplinary work
- Design Research Society paper acceptance and presentation

Timeline

April 2019 — IDRC grant awarded
May 2019 — Inception workshop
July 26, 2019 — Launch of the call for EOI
Dec. 2019 — Notification selected EOI
Jan. 2020 — SE & RAs established
Jan. - Aug. 2020 — Full proposal submission, review & assessment
Sep. 2020 — Award decision and public announcement
May - June 2020 — GD course at CU
Oct. 2020 — Sub-award contracts finalized
Oct. - Dec. 2020 — LabOne | Sessions One to Four
Jan. 2021 — GDS Bulletin Issue One
March 2021 — GDS Bulletin Issue Two
March 2021 — Project update report no.1
April 2021 — Project network meetings
May 2021 — GDS Bulletin Issue Three
June 2021 — LabTwo | Session One - The role of power in GD
July 2021 — Project update report no.2
July 2021 — GDS Bulletin Issue Four
Sep. - Dec. 2021 — Interviews with PIs/SEs
Oct. 2021 — LabTwo | Session Two – Prototyping
Nov. 2021 — GDS Bulletin Issue Five
Dec. 2021 — Project update report no.3
Dec. 2021 - March 2022 — Design Research Society paper acceptance and presentation
June 2022 — Submission of final project research reports
Oct. 2022 — Virtual closing event & GDS website launch
Oct. 2022 — GDS Bulletin Issue Six

Learn more
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Annex N – GDS Program closing event invitation and schedule

Register in advance: https://carleton-ca.zoom.us/meeting/register/tJMtdOCrpzgsHdVgm0GkiebGWEEVSuUY68Bb

SCIENCE
TECHNOLOGY
ENGINEERING
ART
MATH

Tuesday 4 October 2022
9am to 11:20am (EST)
Zoom | Carleton AP450, SID Gallery

GDS Program – Closing event

A celebration of the achievements of the awarded research partners

During the event we will ask you to watch videos on our GDS YouTube channel. This is to help reduce issues with streaming videos through a shared screen. If possible, we suggest that you have one internet tab open for the Zoom event and another open to watch the videos on YouTube.

Bookmark this page for later: https://www.youtube.com/playlist?list=PLkavYUIgT2sMsLU2RKeRUHyWZCen1wbn5

We will not wait for everyone to re-join back on the Zoom event before proceeding to the next item. All links to the videos will be provided in the chat during the event. The timings are approximate. The event will be recorded and later shared with you.

We hope you enjoy the show.

Introductions | 9am to 9:15am

Welcome | Bjarki Hallgrimsson & Dominique Marshall | PIs GDS Program

Timeline | Chiara Del Gaudio | Investigator GDS Program

Video premiere | 9:15am to 11am

Approx. start time:

9:15am | Group 1 – Introductions by Yoko Akama | Regional expert for Asia

9:35am | Group 2 – Introductions by Bjarki Hallgrimsson | Co-PI of GDS Program

9:55am | Group 3 – Introductions by Raquel Noronha | Regional expert for Latin America

10:15am | Group 4 – Introductions by Emmanuel Mutungi | Regional expert for Africa

10:35am | Group 5 – Introductions by Dominique Marshall | Co-PI of GDS Program

Closing remarks | 11:00am to 11:20am

Raquel Noronha | Regional expert for Latin America

Emmanuel Mutungi | Regional expert for Africa

Katie Bryant | IDRC, Program Officer for GDS

Bjarki Hallgrimsson & Dominique Marshall | PIs GDS Program

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Closing event agenda

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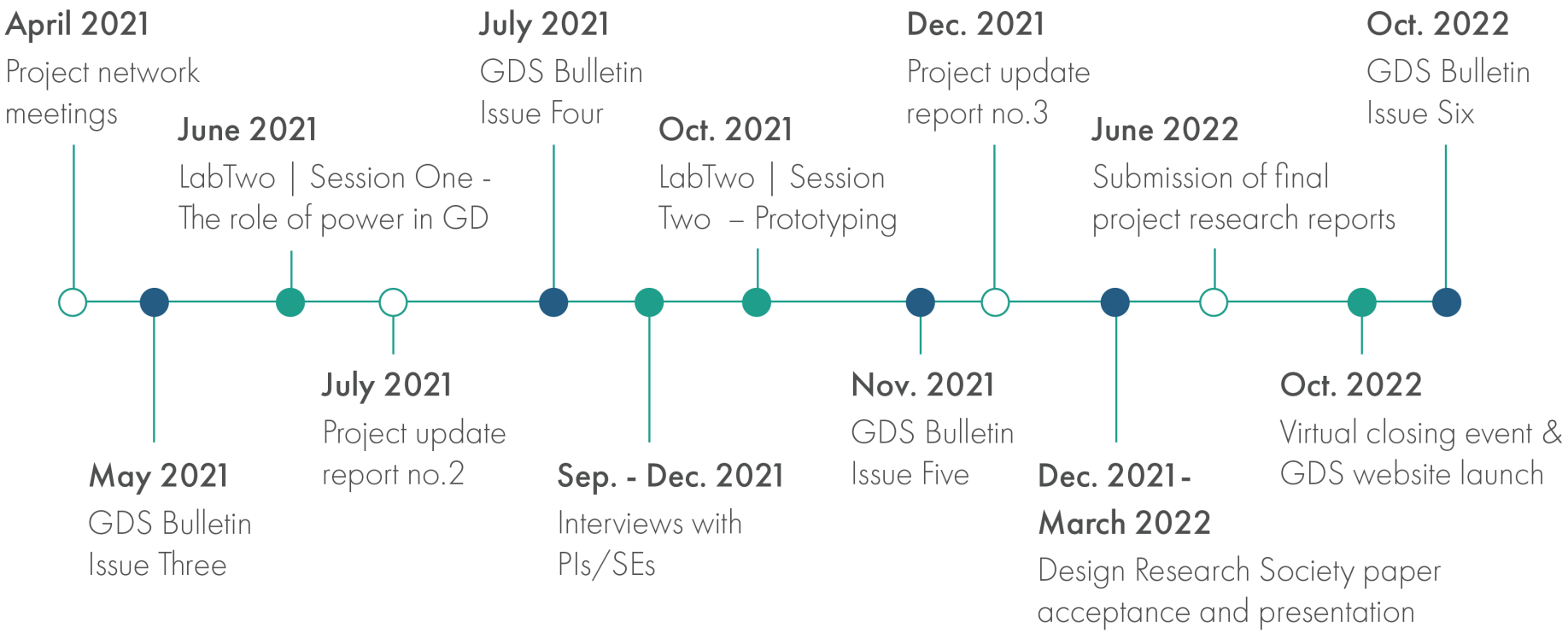
Emmanuel Mutungi | Regional expert for Africa

Katie Bryant | IDRC, Program Officer for GDS

Bjarki Hallgrimsson & Dominique Marshall | PIs GDS Program

GDS Program timeline – April 2019 to March 2021

GDS Program timeline – April 2021 to Oct 2022



9:15am | Group 1 – Introductions by Yoko Akama

ID17 Improving the design of public transport based on women's experiences in Turkey | PI Dr. Pinar Kaygan | video by Katherine Barrett

ID74 Improving transportation systems for women in Rwanda | PI Dr. Didacienne Mukanyiligira | video by Kavita Mistry

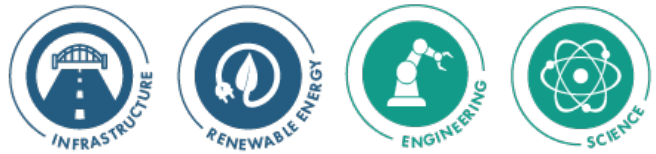
ID50 Designing mobile services for ageing women in Malaysia | PI Dr. KOO Ah Choo | video by Rezwana Afrose

ID38 Designing support services for women experiencing workplace harassment in Pakistan | PI Dr. Maryam Mustafa | video by Sarah Chin

9:35am | Group 2 – Introductions by Bjarki Hallgrimsson

ID47 Improving the design of upland fish drying technology for female fish vendors in Nigeria | PI Dr. Uduakobong Okon | video by Jessika Guay

ID57 Developing an alternative energy-sourced fish dryer to improve processing for small-scale female processors in Nigeria | PI Dr. Kafayat Fakoya | video by Jessika Guay



ID41 Re/designing the University of Buenos Aires campus to be gender inclusive in Argentina | PI Dr. Carolina Spataro | video by Ben Koskowich

ID73 Improving the design process for housing and public spaces based on women's experiences in Rwanda | PI Dr. Marie Chantal Cyulinyana | video by Katherine Barrett

9:55am | Group 3 – Introductions by Raquel Noronha

ID91

Studying the use of artifacts to rebuild self-image and identity among female breast cancer survivors in Brazil | PI Prof. Débora Tatiana Ferro Ramos | video by Alicia Gal

IDA

3D-printed prostheses to support low-income female survivors of domestic violence, accidents or cancer treatment in Brazil | PI Dr. Maria Elizete Kunkel | video by Alicia Gal

ID71

Developing small wind turbines with local women for domestic use in Mauritius | PI Dr. Khalil Elahee | video by Victoria Asi

ID53

A case study of clothing design considerations of low-income, menopausal women in Brazil | PI Érica das Neves | video by Fernanda Fontes

10:15am | Group 4 – Introductions by Emmanuel Mutungi

ID33 Improving access to financial services for women in Ethiopia | PI Dr. Getachew Mengesha | video by Kavita Mistry

ID79 Modernizing the batik industry to improve income for women in Tanzania | PI Dr. Pendo Bigambo | video by Kavita Mistry

ID37 Exploring urban childcare infrastructures to support women's autonomy in Argentina | PI Prof. Emerita Ana Maria Falú | video by Deanna Bogaski

ID88 Developing new construction techniques based on the work of women in Brazil | PI Prof. Diana Helene Ramos | video by Katherine Barrett

10:35am | Group 5 – Introductions by Dominique Marshall

ID40 Assessing the impact of solar panels to improve energy access for women in rural Ghana | PI Dr. Samuel Gyamfi | video by Maya Chopra

ID65 Constructing an eco-friendly generator for low-income female artisans in Nigeria | PI Ese Esther Oriarewo | video by Victoria Asi

ID80 Reimagining urban territories for women's autonomy in Colombia | PI Ass. Prof. Adriana María Botero Vélez | video by Ona Bantjes-Rafols

ID61 Developing innovative urban design strategies to combat gender violence in Mexico | PI Dra. Erika Anastacia Rogel Villalba | video by Ona Bantjes-Rafols

Closing remarks

Raquel Noronha | Regional expert for Latin America

Emmanuel Mutungi | Regional expert for Africa

Katie Bryant | IDRC, Program Officer for GDS

Bjarki Hallgrimsson & Dominique Marshall | PIs GDS Program

Find out more

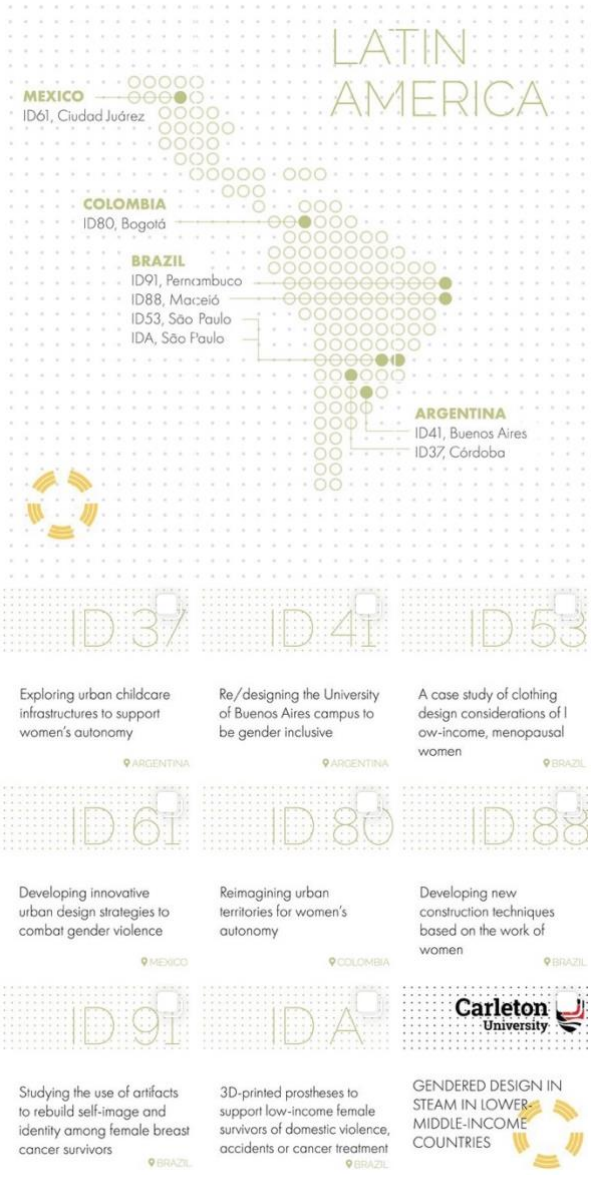
GDS website: https://carleton.ca/gendesignsteam/

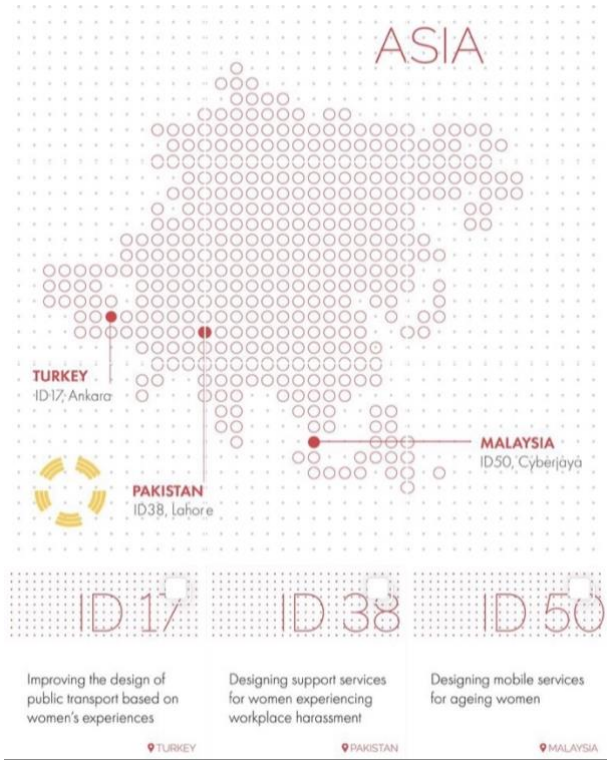
Instagram: @gendesignsteam

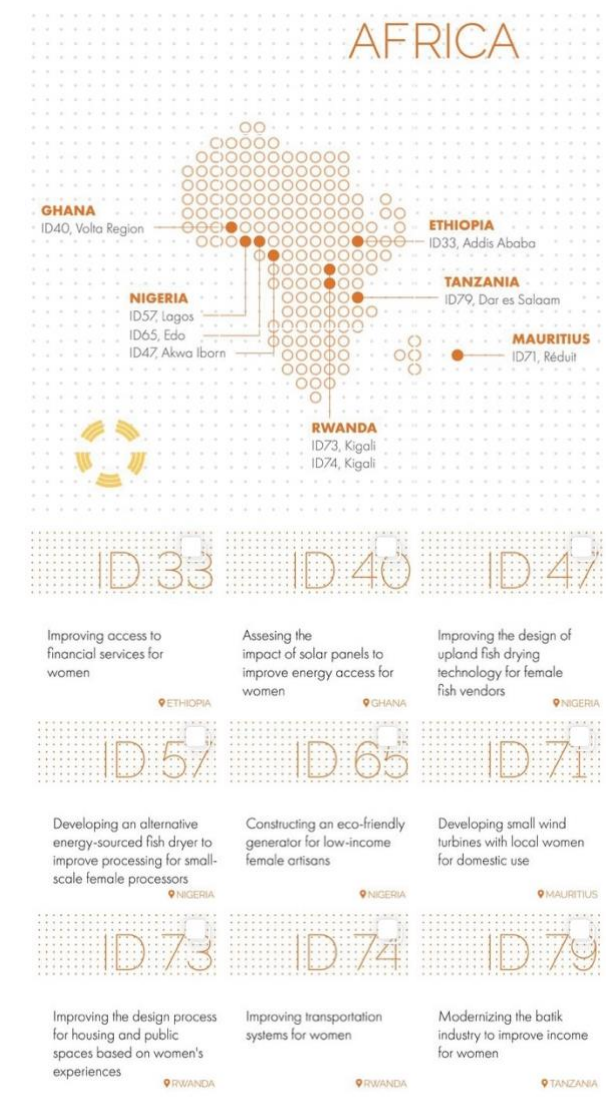
Twitter: @GenDesignSTEAM

YouTube: GenderedDesign STEAM

Annex O – Closing event campaign on Instagram







Annex P – Proposal for using remaining funds

GDS Program – Sustainable research and development

Overview

There are two main streams to this work:

- **Part A** – data extraction, synthesis and analysis of information from the southern projects and sector expert interviews exploring challenges and needs for sustainable research.
- **Part B** – response from IDRC based on the information collected to identify opportunities that can support the challenges and needs of the southern projects (closing the loop).

Research questions

These questions will help shape the direction of the data extraction and analysis. It may not be possible to answer them all and new questions may develop during the work:

- What are the hopes of continuing their research in the future?
- What happens after the funding of these types of programs comes to an end?
- What support do the projects need to continue their research?
- What are the biggest challenges for the researchers to continue with and build upon the work that they started?
- How do they look for research support?
- How can northern partners support?
- What are the differences and/or similarities between: regions; sector; career stage; already established networks?

Data collection

Part A

There will be no new data collection. The information to be examined includes:

- Interviews with the project PIs (primary source), specifically the last question from the interview guide:
    - *How do you see the sequels to this adventure? What would help? What might be possible?*
    - *If we think about the sustainability of this research and practice over time, what would you say/think...*
    - *Any dreams for the future? (more general)*
- Interviews with Sector Experts (secondary source)
- Final reports from the project teams (secondary source)

There will be no new involvement of southern partners since the data that is being examined is their contribution. The synthesis of information is based on the experiences and thoughts already shared by the southern project teams in the in-depth interviews that took place and the information shared in their final reports and other feedback.

Part B

We hope to have an opportunity with IDRC to discuss the findings to help formulate and identify opportunities in response to the challenges and needs discovered. This is a key stage in this work to show the southern partners that we have listened (closing the loop).

Outputs

As with the whole approach of the GDS Program, the specific outputs will be determined based on the information collected and reviewed. We may determine different ways to present our findings depending on what we discover. It is likely however that the following outputs will be produced:

- Synthesis summary of the data extraction, review and analysis in the form of a table.
- A short paper(s) reflecting on the findings either authored by the leads independently and/or in conjunction with each other and/or the RAs.
- A visualization/infographic of the findings showing beyond the funding project cycle.
- Translation of outputs into Spanish and Portuguese where appropriate.

All outputs created will be published on the GDS website and any other relevant platforms identified.

Resources

The remaining funds will be approximately $16k. We anticipate that this will be spent as follows:

- Research Assistants: $12,000
- Research Assistant for design visualization output: $1,500
- Translation costs: $2,500

The work will largely be overseen by Dr. Dominique Marshall and Dr. Chiara Del Gaudio. Their time to support this piece of work is given in-kind and is estimated to be 50 to 70 hours each (approx. $38,000). Prof. Bjarki Hallgrimsson will be involved from the periphery.

The GDS Program Coordinator, Kerry Grace, will provide time to support the work as needed throughout the various activities listed below and will be paid from the remaining internally matched funds.

Timetable

We anticipate that the schedule of activities will be as follows:

No.	Activity	Responsibility	Date
1	Identify the Research Assistants	CDG, DM, KG	By 26 Jan
2	Kick-off meeting (there will be subsequent touch-point meetings throughout the data extraction and collation)	CDG, DM, KG & RAs	By 3 Feb
3	Data extraction, collation and early synthesis and analysis	RAs	Feb to Mid-April
4	Completing synthesis and analysis and starting outputs	CDG, DM, (RAs)	Mid-April to May
5	Meeting with IDRC to discuss opportunities in relation to the findings (Part B)	CDG, DM, KG, BH & IDRC team	May
6	Finalizing outputs	CDG, DM, KG, RAs	May to June
7	Publish outputs on the website and other dissemination	KG, RAs	By 30 June

GDS Program – Archiving

Aim: To complete the archiving process of information generated during the GDS program in-line with our ethics clearance and participant consent.

This will consider and action where it is deemed possible:

Item	GDS website	OJS (Carleton Library)^	Dataverse* or other portal
Final technical reports from project teams	x	x	-
Additional materials and outputs sent in by the project teams	x	-	-
Templates created during the GDS activities e.g. Miro boards, interview guides	x	x	-
Interviews with PIs transcripts	-	x	x
Interviews with PIs video recordings	-	x	x
Bulletins	x	x	-
DRS conference paper	x	x	-

^ The Open Journal System (OJS) enables open access publishing for University communities. OJS is indexed via Google Scholar and will also be indexed and accessible via OPAC library catalogues. Researchers can access the GDS Bulletins in a variety of search mechanisms and ways - whether it is Google searching on their computers or phones (our website is also mobile capable) or through academic literature searches via Google Scholar or library OPACs. Additionally, the GDS Bulletins, by being indexed in this way, will also be findable through international library searches via WorldCat. There are no pay walls or authentication needed to access these materials increasing accessibility.

* The options to be explored for this phase of digital archiving including utilizing Borealis, the Canadian Dataverse Repository / le dépôt Dataverse canadien is bilingual, multi-disciplinary, secure research data repository. The Carleton University local instance of this repository, Dataverse, is Carleton's local instance of the larger Borealis service. Dataverse provides a platform for discovery, management, sharing, and preservation of research data, and supports Canadian researchers seeking to comply with Tri-Agency Research Data Management Policy requirements and recommendations for data deposit and sharing. As this area is explored, it may be deemed appropriate for other materials to be added to the chosen platform.

Timetable: Work will begin mid-February and will be completed no later than 30 June 2023.

Resources: The completion of this work is primarily supported by the remaining internally matched funds from the GDS Program. It will be completed by the GDS Program Coordinator in conjunction with Carleton's library services. The allocation of the remaining external funds for RAs can also cover, if necessary, an undergraduate history student to provide approximately 50 hours of support.

Annex Q – My Gender Assumptions tool

1

Read the personas on the screen.
Pick one and re-read it once.

2

Use the space below to design an artefact for this persona using the information you remember from the card. Some artefact suggestions are provided below, but feel free to make up your own. You can use tools on Miro or upload a sketch or images to support your design.

3

Reflect on the persona you chose and your design from Step 1.
Make two lists: one that lists your persona's characteristics and another that lists the artefact's characteristics.

3a Persona Characteristics

List the persona characteristics that informed your design. These can be based on what you remember from the prompt card as well as ones you may have made assumptions on.

A
B
C
D
E

3b Artefact Characteristics

For each persona characteristic listed in step 3a, write the artefact characteristic that was inspired by it below.

1
2
3
4
5

4

Choose one of the three gender expression spectrums below. Move it to the box below and make it bigger. Or create your own graphic!

Go through both lists you created in step 3. Move the numbered circles beside each item in step 3 to the spectrum below. Place them in the area of the spectrum where you perceive them to belong. Consider these as individual characteristics independent from your design.

Take some time to reflect. What inspired your decision to use the visualization tool you chose in step 4?

Consider the following:
What approach to gender are you using? Were you attracted to the simplicity or complexity of the diagram?

5

5a Go back to step 3. In the beige boxes (middle column), apply your reflections from step 4 and write any assumptions you made of the persona's gender expression.

5b In the columns below, write the expected behaviour of the persona based on these assumptions. Consider: *"You designed the object this way because you expect _____ of the persona."*

6

Use the reflection questions below to help you understand the implications of the assumptions made in the previous steps. Which aspects were overlooked in your design? Add your responses in the bubbles.

"Participants are encouraged to modify and continue adding to the suggestions provided according to whether or not it applies to their situation. Participants are encouraged to apply the hierarchy as follows:

Question > Factors to consider > Assumption > Implication.

When changing this characteristic, how would this affect the final product? Consider the aspects explored in step 6.

7

How would you re-design the artefact based on your renewed understanding of the persona and on your recent reflections on gender?

Redesign your artefact here by changing one characteristic from your initial design.

8

Place this sticky note on the characteristic you re-designed in step 7.

Explain why you chose to change that characteristic. Consider the highly-gendered characteristics embedded in the artefact and how they are perceived by the general population. How does your redesign change their perception? What are the other implications of this change?

9 How do YOU design?

9a

Reflect on your design process. Use the timeline below or create your own diagram to map out and list key steps from your personal design process. Consider the process used in this workshop as well as steps you may apply in other situations and projects (for example, research, scenarios, user testing, etc.).

9b

Use blue sticky notes to point out where you gender throughout your design process (and write where you were aware you were doing it, previously to this activity). Pay attention to where, why, and when this is done and whether this is done consciously or intentionally. Note these reflections on the sticky notes.

Reflect on what you understood in steps 3 and 5 regarding how gender plays a role in design.

How would change the design process to minimize the effects of your personal biases?

Move the orange sticky notes below to the areas in your personal design process (9a) where you could implement meaningful change and add notes that could help you avoid perpetuating harmful stereotypes in your future design work.

Key Terms & Concepts

Sex: refers to a set of biological attributes in humans and animals. It is primarily associated with physical and physiological features including chromosomes, gene expression, hormone levels and function, and reproductive/sexual anatomy.

Definition from the Canadian Institutes of Health Research: https://cihr-irsc.gc.ca/e/48642.html

Gender: refers to the socially constructed roles, behaviours, expressions and identities of girls, women, boys, men, and gender diverse people. It influences how people perceive themselves and each other, how they act and interact, and the distribution of power and resources in society. Gender identity is not confined to a binary (girl/woman; boy/man) nor is it static; it exists along a continuum and can change over time. There is considerable diversity in how individuals and groups understand, experience and express gender through the roles they take on, the expectations placed on them, relations with others and the complex ways that gender is institutionalized in society.

Definition from the Canadian Institutes of Health Research: https://cihr-irsc.gc.ca/e/48642.html

Gender identity: One's innermost concept of self as male, female, a blend of both or neither – how individuals perceive themselves and what they call themselves. One's gender identity can be the same or different from their sex assigned at birth.

Definition from the Human Rights Campaign: https://www.hrc.org/resources/sexual-orientation-and-gender-identity-terminology-and-definitions

Gender expression (gender presentation): External appearance of one's gender identity, usually expressed through behavior, clothing, haircut or voice, and which may or may not conform to socially defined behaviors and characteristics typically associated with being either masculine or feminine.

Definition from the Human Rights Campaign: https://www.hrc.org/resources/sexual-orientation-and-gender-identity-terminology-and-definitions

Cognitive bias: Cognitive bias is an umbrella term that refers to the systematic ways in which the context and framing of information influence individuals' judgment and decision-making. There are many kinds of cognitive biases that influence individuals differently, but their common characteristic is that—in step with human individuality—they lead to judgment and decision-making that deviates from rational objectivity.

Definition from the Interaction Design Foundation: https://www.interaction-design.org/literature/topics/cognitive-biases

Inclusive design: design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference.

Definition from OCADU Inclusive Design Research Centre: https://legacyidrc.ocadu.ca/about-the-idrc/49-resources/online-resources/articles-and-papers/443-whatisinclusivedesign

User-centered design: an iterative design process in which designers focus on the users and their needs in each phase of the design process. In UCD, design teams involve users throughout the design process via a variety of research and design techniques, to create highly usable and accessible products for them.

Definition from the Interaction Design Foundation: https://www.interaction-design.org/literature/topics/user-centered-design

My Gender Assumptions