Appendix A: Program activities

The timeline of the four primary activities of the GDS Program and their alignment to the period 0are summarized in this table:

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 1. The section below provides further details about the way by which the milestones were reached in each reporting year. 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.

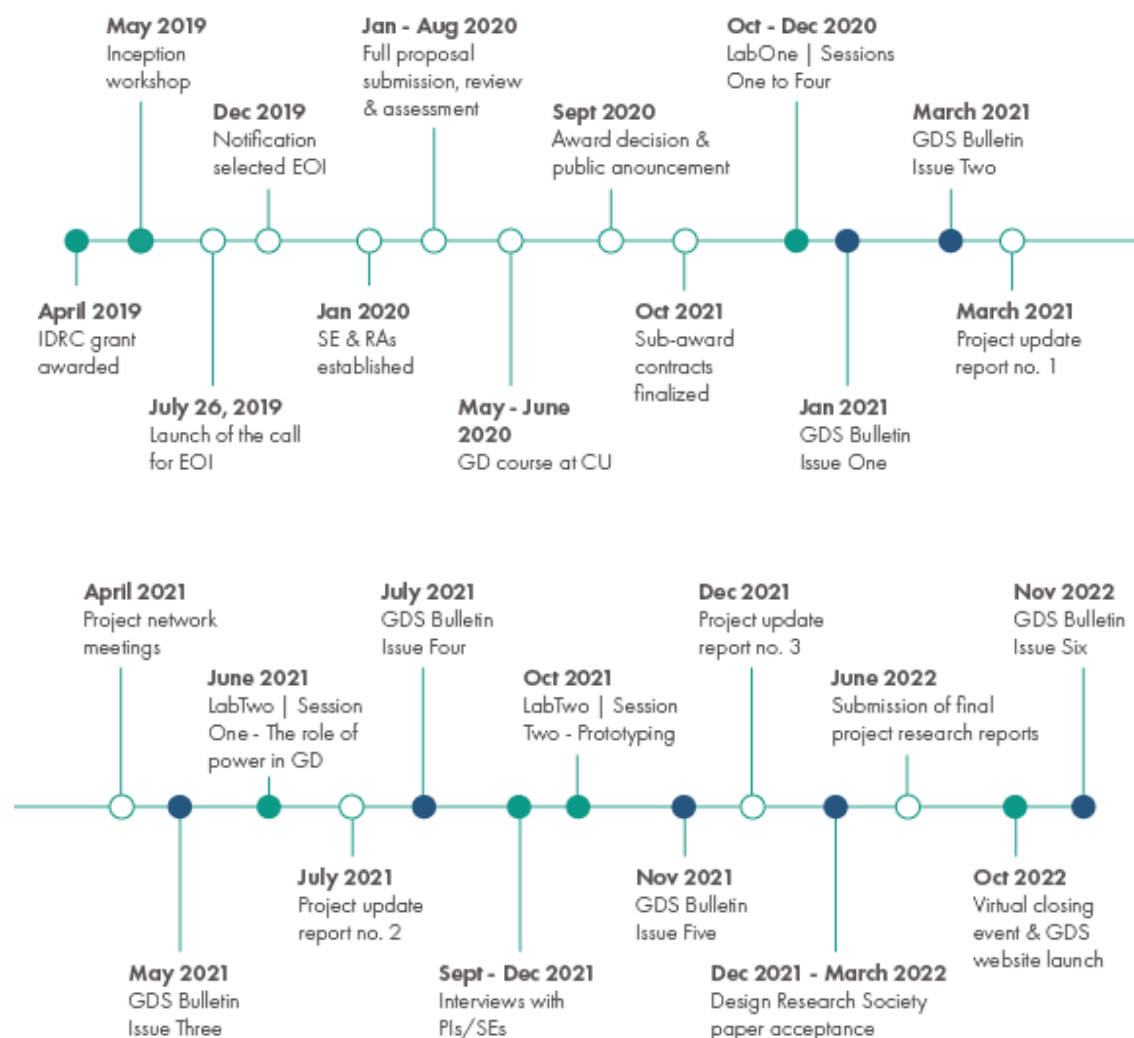## Figure 1: Key Program milestones, April 2019 to October 2022

May 2019 — Inception workshop
Dec 2019 — Notification selected EOI
Jan - Aug 2020 — Full proposal submission, review & assessment
Sept 2020 — Award decision & public anouncement
Oct - Dec 2020 — LabOne | Sessions One to Four
March 2021 — GDS Bulletin Issue Two

April 2019 — IDRC grant awarded
July 26, 2019 — Launch of the call for EOI
Jan 2020 — SE & RAs established
May - June 2020 — GD course at CU
Oct 2021 — Sub-award contracts finalized
Jan 2021 — GDS Bulletin Issue One
March 2021 — Project update report no. 1

April 2021 — Project network meetings
June 2021 — LabTwo | Session One - The role of power in GD
July 2021 — GDS Bulletin Issue Four
Oct 2021 — LabTwo | Session Two - Prototyping
Dec 2021 — Project update report no. 3
June 2022 — Submission of final project research reports
Nov 2022 — GDS Bulletin Issue Six

May 2021 — GDS Bulletin Issue Three
July 2021 — Project update report no. 2
Sept - Dec 2021 — Interviews with PIs/SEs
Nov 2021 — GDS Bulletin Issue Five
Dec 2021 - March 2022 — Design Research Society paper acceptance
Oct 2022 — Virtual closing event & GDS website launch

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	

1.1　Year 1 | 1 April 2019 to 31 March 2020

5.1.1 Inception workshop, May 2019

An inception workshop took place on May 21, 2019. It was a two-day event, held at Carleton University, to launch the Gendered Design in STEAM for LMICs Program. The workshop refined the call for research projects, developed the protocol for case studies, and the dissemination process of the call. Carleton University's sector experts, and Emmanuel Mutungi, the regional expert for Africa attended. There were presentations from the Program committee. In addition, Londa Schiebinger from Stanford University delivered a virtual keynote on their project dedicated to 'Gendered Innovations'. Information about the inception workshop was added to the GDS research portal that was developed at that time.

5.1.2 Establishing the support network, April 2019 to March 2020

The Program contributors were identified to form the expert review committee. The main responsibilities of this committee included: disseminating the call; supporting the decision process of awarding; providing ongoing feedback and support to the awardees; and developing centrally run Program activities. 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. (While a couple of Sector Experts were part of early discussions, this group was established later after the Expression of Interest stage).

In addition, a cohort of Carleton University graduate students were appointed as Research Assistants (RA), supervised by the Sector Experts, to mutually learn from, and support, the GDS Program and awardees. The recruitment of Sector Experts (SE) and Research Assistants (RA) at Carleton raised several questions about the visibility of the Program and with how the SEs at Carleton see the Program as beneficial to their own research agendas. Anecdotally some of the SEs expressed interest right from the start and saw alignment with their own research objectives, while others took a longer time to be onboard. This could have been a workload issue or problem with finding suitable RAs. The finalization of all the SEs and RAs continued throughout Year 1 and the retention and replacement of RAs throughout the whole Program remained a challenge.

5.1.3 Disseminating the call for Expressions of Interest (EOI), August 2019 to October 2019

The wording for the calls for the Program were drafted, revised and finalized in consultation with the expert review committee and IDRC, as well as the Regional Experts following the inception workshop. 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'. The grant available for each successful proposal under Stream 1 would be up to a maximum of $15,000 and it was estimated that 20 awards would be granted. The initial proposal had a lower award value of $8,000 to $10,000. This was increased following discussions between the Program experts and further consideration to local context.
- **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. The grant available

for each successful proposal under Stream 2 would be up to a maximum of $35,000 and it was estimated 10 awards would be granted.

Applicants were requested to submit an Expression of Interest (EOI) pertaining to innovations linked with STEAM fields. Approved EOIs would then be invited to submit a formal proposal.

The launch of the EOI took place early August 2019. It was advertised on the GDS virtual portal, social media channels and relevant forums and blogs. It was also disseminated in four languages (French, English, Spanish and Portuguese) and by the Program and expert review members through their established contacts and networks. The original deadline to receive EOI submissions was September 27, 2019. This was extended to October 7, 2019 to allow applicants additional time to write and submit a full and considered EOI proposal.

5.1.4 EOI review and decision on applicants to submit full proposal, October to December 2019

A total of 95 EOIs were received. The core team in consultation with the Regional Experts and IDRC reviewed the EOIs. An EOI review template and shared criteria were used to help maintain consistency between each of the reviewers.

The original plan was to have a decision on which applicants would move forward to the next stage of submitting a formal proposal by October 25, 2019. However, due to the extension of the deadline to receive the EOIs and the high volume received following the call, the date of finalizing a decision was extended.
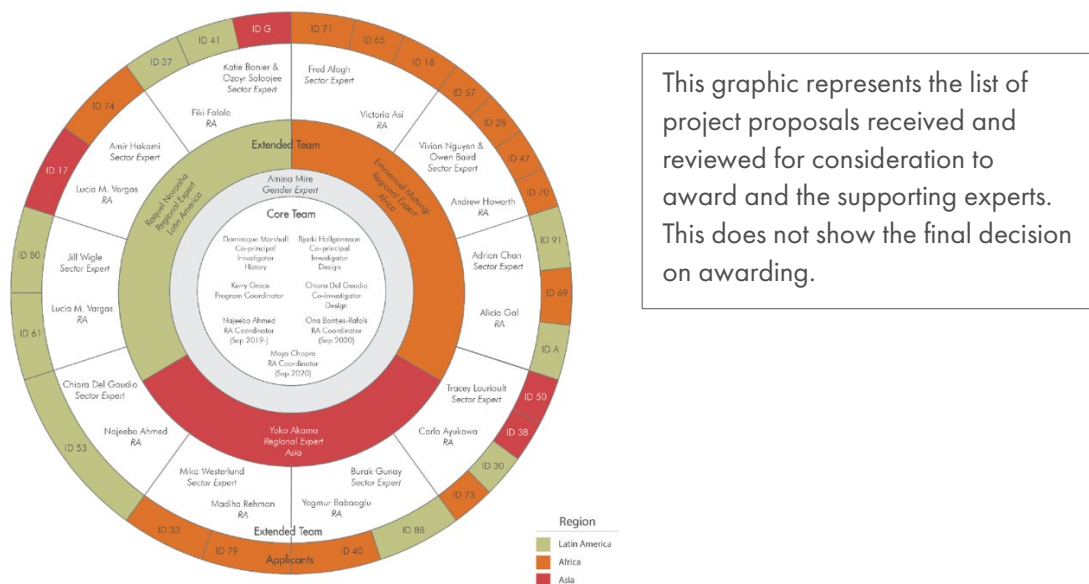
In early December, 38 applicants were chosen to submit a formal proposal. Notifications were sent out on December 18, 2019. The successful applicants under both Streams were asked to submit a formal proposal, using a template created by the core team. The original deadline to receive the formal proposals was December 6, 2019. This was subsequently revised to a deadline of January 27, 2020, to allow applicants time during their holidays and after exams to focus on the final writing.

5.1.5 Submission of full proposals and review, January to March 2020

The core team agreed to receive three proposals after the deadline. By February 27, 2020, 26 proposals were received for consideration. The expert review committee, now including the Sector Experts along with the RAs, started an assessment of the project proposals to ensure suitable alignment with the stream of the Program, methodology and budget feasibility, and that the project fully considered a gender perspective and contributed to gendered design thinking. Figure 2 shows the projects reviewed across the GDS Program experts. One of the main activities conducted by the RAs was a SWOT analysis of the proposals with supervision from their Sector Expert. The initial plan was to discuss these at a workshop attended by the core team, the expert review committee and IDRC. However, the workshop had to be cancelled due to the start of the Covid-19 global pandemic.

Due to the rapidly changing situation during March with to Covid-19 and that the initial assessment of the proposals highlighted the need to dedicate more time to review the applications, the decision-making process continued into Year 2 (see below). The applicants were informed of the delay.

Figure 2: Program experts and proposals reviewed

This graphic represents the list of project proposals received and reviewed for consideration to award and the supporting experts. This does not show the final decision on awarding.

5.2 Year 2 | 1 April 2020 to 31 March 2021

The work of Year 2 remained primarily focused on awarding the research projects (5.2.1), 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 (5.2.5), and introducing a new form of communication through the GDS Bulletin (5.2.6 and 5.2.7). Other activities included the 'Gendered and Design' Master course, developed and delivered by Chiara Del Gaudio at Carleton University (5.2.2) that created a space for students to have in-depth reflections and explorations around gendered design.

5.2.1 Proposal review and final award decision, April 2020 to August 2020

The expert review committee, along with the Research Assistants (RAs) to the Sector Experts at Carleton, and the core team, continued the assessment (that started in Year 1) of the project proposals to ensure a suitable alignment with the two Streams of the Program, a strong methodology and budget feasibility. The assessments also considered to what extent and how the projects considered a gender perspective, and how they contributed to gendered design thinking.

The in-depth reviews of the project proposals conducted by the Program experts 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 and the experts to design activities that would better support knowledge generation, as seen in the HUB activities (sections 5.2.5, 5.3.3 and 5.3.7).

The original plan was to announce the decision on awarding by the end of March 2020. However, due to the demands for professional and personal adjustments brought about by Covid-19 and the need to dedicate more time to review the applications the decision-making process was delayed. The applicants received an update on April 21, 2020.

On June 11, 2020, the winning projects were notified of the decision. Twenty projects were chosen to receive the grant, all of them with strong female involvement. Nine projects were awarded in Africa, eight

projects across Latin America, and three projects in Asia. There were nine Stream 1 projects[1] awarded and 11 Stream 2 projects[2]. Further information on the <u>public award announcement</u> is provided below. For the six projects that were not selected, feedback gathered from all reviewing parties was provided with the option to have further discussions with a member of the core team if requested.

5.2.2 Gendered Design course at Carleton University, May 2020 to June 2020

Chiara Del Gaudio planned and delivered a new Master's course, 'Gender and Design'. The course was delivered through May 2020 into June 2020, with 12 classes and nine students registered. The original plans for face-to-face meetings were adapted to bring it 100% online, due to the global pandemic. The course content was created from contributions from eight experts, including four connected with the GDS Program. Learning was through a variety of activities associated with the goals and approach of the GDS Program: case studies, guest speakers, events, individual and group literature reviews, writing papers, and research-through-design.

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. The political dimension of design, the relation between gender, technology and art, the historical overview of this relation, the concept of situated knowledge and practice, were some of the topics addressed to explore the most important advancements regarding gender in/and design, and the principles that ground a more inclusive and gender-aware design practice. Subject areas and topics included in the course:
  – Introduction and setting the foundations for gender, design, and technology.
  – The relationship between design, knowledge and power.
  – Gender and design through history: guest speakers Emily Gann and Erin from Ingenium Canada
  – Gender in/through the design process and outcome.
  – Reflections of ethics and design for more gender-aware design approaches: with guest speaker Yoko Akama from RMIT.
  – Reflections on situated knowledge and practice for more gender-aware design approaches: with guest speaker Shana Agid from Parson the New School for Design.
  – More inclusive design approaches: examples from the field: with guest speaker Raquel Noronha from Universidade Federal do Maranhão.
  – Insights for thinking new Gendered Design practices: design alternatives and different perspectives.

### 5.2.3 Public announcement of winning research projects, September 2020

On September 28, 2020, we made a public announcement on the 20 grant-winning projects. We liaised with IDRC leading up to this announcement to add further traction where possible. The announcement was published as a <u>Carleton University press release</u> and circulated across the GDS network where we encouraged projects to disseminate further within their institution and own professional networks. Annex C is the information that accompanied the announcement. We also released several posts on the individual awarded projects through the Twitter (<u>@GenDesignSTEAM</u>) and Instagram (<u>gendesignsteam</u>) accounts of the Program. The launch increased the number of followers of the Program on social media and generated further relevant connections.

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[1] Projects that are case studies and/or narratives of experiences that provided examples of either success or failures in terms of 'gendered innovation'.
[2] Projects that include prototypes coupled with case-study research that will result from research-through-design, to achieve new processes and artifacts.

As part of the information prepared for the announcement, we reviewed, developed, and updated our visual identity. This included new icons[3] representing the sectors and STEAM areas as well as refining our colour palette with the use of colours to represent the three regions of the awarded projects (Figure 3). We also created a logo for awarded projects to use on their materials to distinguish from core GDS-produced outputs.

Figure 3: New infographics and regional colours

Africa   Asia   Latin America
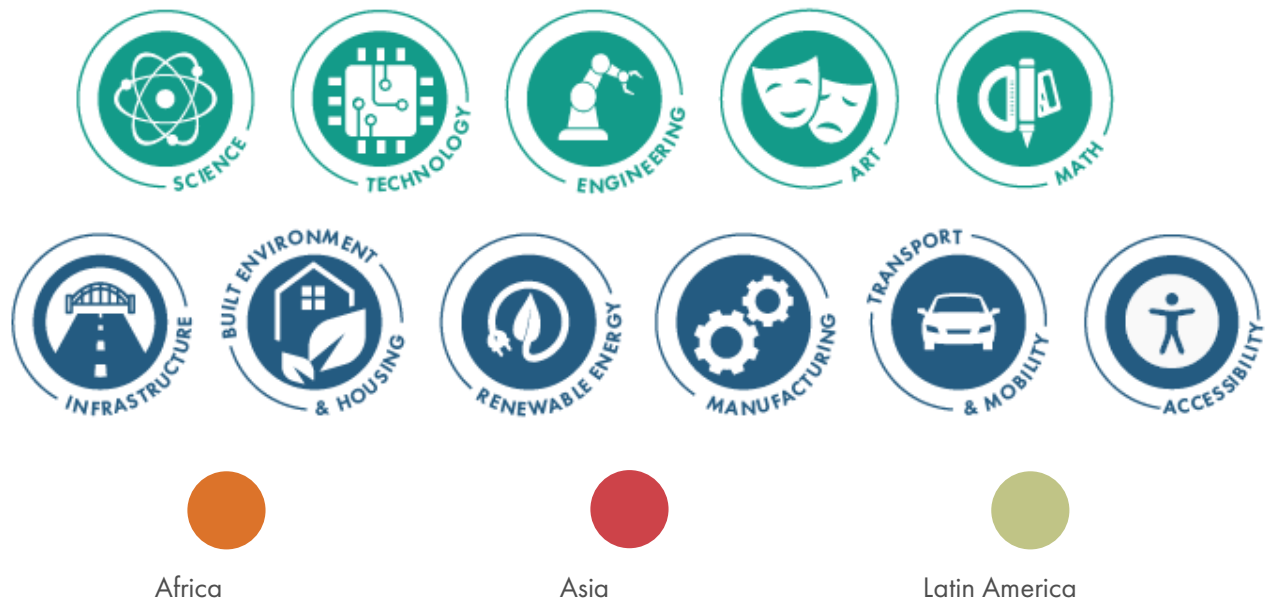
5.2.4 Contract finalization and agreement, August 2020 to October 2020

With close collaboration between the GDS Program Coordinator and Carleton's Research and International Office, a sub-award contract for the winning projects was created. It was also necessary for the awarded projects to submit a reorganized budget based on the requested amount that was in their proposal. This was because the original template provided to the research teams to use when submitting a proposal did not take into consideration the condition of the grant where 'indirect' costs was not allowed. It was also an opportunity for the winning projects to reorganize how they plan to use their grant using categories more appropriate in circumstances caused by Covid-19. For example, we introduced a category specifically for enabling network connections. We created a budget template with guiding instructions for all winning projects to complete. The processes and activities developed will in the longer term enhance Carleton's ability to support multi-interconnected-international grant dissemination and reporting.

Part of the contract finalization process called for reviewing each of the awarded projects' budgets in detail, ensuring that they met the conditions of the grant. This at times included numerous communications between the Program Coordinator and the winning project team, together with seeking advice from Carleton's Research and International Office. This was particularly the case for those research teams that needed to obtain country clearance, and where there were internal bureaucracies within the institute receiving the sub-award.

Once the sub-award contract had been drafted, and the individual project's grant budget reorganization completed, the contract signing process began – first with the awarded research project, then for the Co-PI's of the GDS Program and finally the authorized official at Carleton, the Associate Vice President,

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[3] These icons are the new versions created. In Year 4 we added in the name of the sector and STEAM field to the icon to improve accessibility. These are the icon presented here.

Research and International, to create a fully executed agreement. The sub-award contracts were between Carleton and the institute of the winning research project rather than an individual from the research team.

The sub-award contracts had a start date of September 1, 2020, and an end date of April 30, 2022. The start date of the contracts, while before the point of receiving full signatures, meant that the awarded project teams could start to take part in GDS HUB activities of LabOne, that started in October. As the process of setting up the sub-award grant had not been completed before, the process took several weeks to finalize. We had also anticipated some delays caused by Covid-19 and had a sub-award end date that took the project team beyond the original 12-months. The end date was further reviewed in Year 3, along with the depth review of the overall GDS Program timetable given the delays encountered.

As well as the sub-award contract document and the re-organization of the sub-award budget, there was also the task of setting up the banking and payment information of the institute receiving the sub-award and grant. The Program Coordinator worked closely with Research Financial Services at Carleton and the 20 awarded projects to check, confirm, and set up the banking information. The first grant installment was processed once a signed sub-award contract had been completed. For some projects, this process started at the end of September.

Overall, there were a few issues with the institute receiving the funds. However, there were challenges with the institutions in Brazil receiving payment due to local rules and regulations for receiving international wire transfers in Brazilian Real. In other circumstances, the money arrived at the awarded institution, but the project teams then faced some internal bureaucracies and delays in being able to access the funds for their research project. The situation with Brazil took some months to rectify with frequent meetings with the research projects, the Regional Expert for Latin America and Research Financial Services at Carleton, facilitated by the GDS Program Coordinator. The delay in receiving the funding created further delays for the research projects to start adequately, on top of Covid-19 related barriers. While there were these initial delays for the awarded projects to receive the first installment, all subsequent grant payments were expedited as the financial transaction pathway was now set.

5.2.5 LabOne HUB activity, October 2020 to December 2020

As we worked to accomplish our goals within the new constraints brought by the Covid-19 pandemic, the GDS Program came to operate as a physical and virtual HUB, a platform for the exploration and advancement of gendered design knowledge and practice. The HUB would work through different kinds of activities, tools, and procedures throughout the lifespan of the GDS Program. Labs were presented as spaces, both literally and virtually, for the encounter and exchange between different expertise, and the emergence of new ideas and collaboration to facilitate:

- the convergence, connection, and redirection of different expertise and contributions on, and to, gendered design;
- the emergence of new research and network possibilities; and
- collective knowledge building on the topic.

LabOne was the first GDS HUB activity. It ran over four days between October and December 2020. Each session was approximately two to three hours in length and was attended by all the awarded research projects and their research teams. The core team, regional experts, sector experts, and Carleton Research Assistant were also in attendance, as facilitators, participating in the discussion workshops, conducting data collection, and providing technical support. The LabOne event was hosted on Zoom. Figure 4 provides a

summary of the LabOne schedule, with the Eastern standard times given. Annex D is the information pack for LabOne and Annex E is the workshop activity.

Figure 4: LabOne outline

Day 1 | Networking and Learning	Day 2 | Framing and Exchanging
Oct 21, 2020 | 09:00 - 12noon	Nov 4, 2020 | 09:00 - 11 & 11:30 - 13:30
Day 3 | Reflecting and Adapting	Day 4 | Sharing
Nov 18, 2020 | 09:00 - 11 & 11:30 - 13:30	Dec 2, 2020 | 09:00 - 12noon

Day 1 was all about 'Networking and Learning'. Ahead of the first day, each project team was asked to produce a five-minute presentation introducing their team and their project. These were uploaded onto the GDS YouTube channel. The awarded projects were encouraged to watch the videos ahead of Day 1 to have an overview of the other awarded research projects part of the GDS Program. This meant that we did not have to spend time on Day 1 conducting full introductions and that these resources would aid subsequent exploration and for fostering network connections.

After introductions, the schedule for the day ran as follows with each session having time for a Q&A after:

- A presentation from Amina Mire, Sociology and Anthropology at Carleton University on the implications of a gender-inclusive perspective for research and design processes.

- A pre-recorded conversation between Bjarki Hallgrimsson, GDS Co-PI and Director of Industrial Design at Carleton University, and Emmanuel Mutungi, GDS Regional Expert for Africa, Head of Art and Design at Kyambogo University.

- A pre-recorded conversation between Chiara Del Gaudio, GDS Investigator and Assistant Professor of Industrial Design at Carleton University and Raquel Noronha, GDS Regional expert for Latin America and Head of Design and Technology and Professor at Universidad Federal do Maranhão.

- A pre-recorded conversation between Dominique Marshall, GDS Co-PI and Professor of History at Carleton University, and Pascale Saint-Denis, a research award recipient at IDRC exploring putting the 'A' into STEM for socially inclusive research and innovation.

After Day 1, the project teams had some assignments and preparatory work ahead of Day 2, which would also support long-term and in-depth reflections and changes, using a digital platform suitable for the new kind of virtual exchange required by the pandemic restrictions. Day 2 happened two weeks after Day 1. A selection of Miro board templates was created for the project teams to use and organize their information from their proposal and for further exploring and detailing research choices. The boards were designed so they can be revisited as knowledge grows during the project implementation. An overview of these boards is provided in Figure 5. For several project teams, and core team members, this was the first time using the Miro board platform. Some of the questions and areas the project teams were asked to explain and explore included:

– What the project is about.
– Who is going to participate in the project and who is going to be affected by the issue/opportunity at the core of the project.
– How the team is going to address the issue/opportunity through the research, and design process (Stream 2 only).
– The project research question(s).

– Challenges and limitations of the project implementation and chosen research methodologies and design principles.
– The project contribution to gendered design.

One of the exercises on the Miro board was for the project teams to create a theoretical mind map to explore the theoretical territory of their research. At the centre is the core research question and the project teams were asked to identify at least three main methods through which the topic will be addressed. They were then asked to identify the main scholars and related work they will be using in their research project. This would assist in having a clear understanding of the theoretical position of their project and identifying conflicts or gaps. This could also serve as a list of references appropriate for the project region and local context.

Figure 5: Overview of the Miro board templates created for LabOne
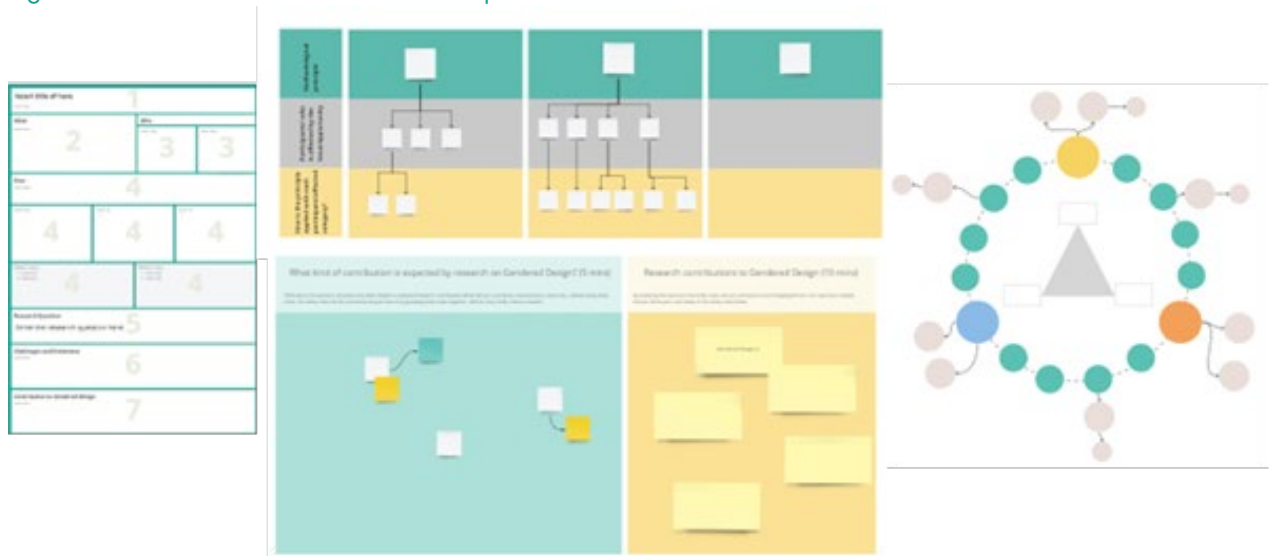
Day 2 focused on 'Framing and Exchanging' ideas and took place in a workshop setting. Two sessions were run consecutively grouping the project teams based on whether they were a Stream 1 or Stream 2 project. At the workshop, the project teams were then put into breakout rooms based on their region – Asia, Africa, or Latin America. Each group was joined by the Regional Expert where possible[3], a member of the core team, the Sector Expert if available, the Research Assistant and Research Assistant Coordinator from Carleton.

During the workshop, the projects teams were asked to reflect on their research using the information that they had been asked to prepare after Day 1, and consider:

– What Gendered Design is and can be?
– What is a research question on Gendered Design?
– What contribution is expected by research on Gendered Design?
– What local knowledge should be taken into consideration for their projects?

The aim of the activity was not to provide a specific answer but to provoke reflections on these topics and be 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.

After Day 2, the project teams were asked to complete some activities to support the workshop happening on Day 3. As before, this involved using templates created in Miro.

Day 3 was all about 'Reflecting and Adapting' and took place in a workshop setting with project teams split by region and Stream. Each project team presented an overview of their research and methodological choices and for Stream 2 projects also their design approach. The activities were there to 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 session may lead the research team to amend or draft a new research/design process and contribution or create a series of insights that can be reflected upon after LabOne.

During Day 3, and Day 2, Carleton's RAs observed the discussions taking place in the workshop activities. They took notes on the collaborative topics of discussion, the main implementation challenges identified by the individual projects, the main changes made by the projects, if any, and why, and the general experience of taking part in the activities.

Day 4 was an opportunity for 'Sharing'. The day started with a group presentation led by the Regional Experts covering the results of the workshop activities with the opportunity for the project teams to add to the information being presented. On this occasion, exchanges between the teams and the Regional Experts, Sector Experts, and Core Team members took place: questions were posed, suggestions were given, and ideated together. The session was recorded but was only made available to the project teams rather than public access on the GDS YouTube channel.

Feedback on LabOne was obtained through an online survey shared with the participants after each day. The insights gathered were used to constantly implement and adapt LabOne and future GDS HUB activities. A responsive approach has characterized Carleton University's contribution to the Program.

5.2.6 GDS Bulletin Issue One, January 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 content of the Bulletin was divided into different sections, but each issue may not have included all of these depending on the activities reported. In each Bulletin, contact information was provided and a link to submit feedback, comments, or suggestions on the Bulletin. Also included, was a link to submit recommendations for the 'open learning' section. Generally, the mains sections of the Bulletin were:

- **Main feature:** Each issue included a main feature, written either from the core team or from contributions from across the GDS network based on key activities of the Program.

- **Project spotlight:** A selection of the awarded research projects were introduced. An introduction to the project team and a summary of the research project were described. The use of infographics indicated the STEAM and sector of the research project. Photos of the team were included where possible.

- **Insights from the field:** This section is used to highlight some of the fieldwork and progress that the awarded research projects have made. In earlier issues, when the projects are at the start of their research it was used to focus on other aspects of the GDS Program.

- **A closer look:** This section was an opportunity to look in more detail at an event or activity that had taken place across the GDS network.

- **Q&A with...:** Where possible, this section covered an interview with a member of the core team of the GDS Program or key stakeholder.

- **Open learning:** Each issue included a list of relevant and useful references relating to the main theme of the Bulletin if there is one, or the wider field of gendered design and research.

The first issue of the GDS Bulletin was released at the end of January 2020. It served primarily as an introduction to the Program including a look at the Sector Experts from Carleton University on the Program, a Q&A with Claire Thompson, the Program Officer from IDRC at the time, and a summary of LabOne. Five awarded research projects were also introduced.

As well as several readings in the Open learning section, we also highlighted two Carleton University events. The GDS network was notified of these events and were invited to join. One was a presentation hosted in collaboration with 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. She explored how poverty, family responsibilities, gender, and age matter when it comes to the length, number, and cost of essential journeys. The second was a roundtable discussion hosted by the Faculty of Arts and Sciences on 'Imagining a just city'.

The Bulletin was circulated across the GDS network, where the recipients were encouraged to share with their institute and own professional network. We also used our social media channels to notify of the release. A small number of hard copies were printed and made available in the school departments at Carleton. Issue One is available on the GDS website.

Figure 6: Front cover and some content of GDS Bulletin Issue One
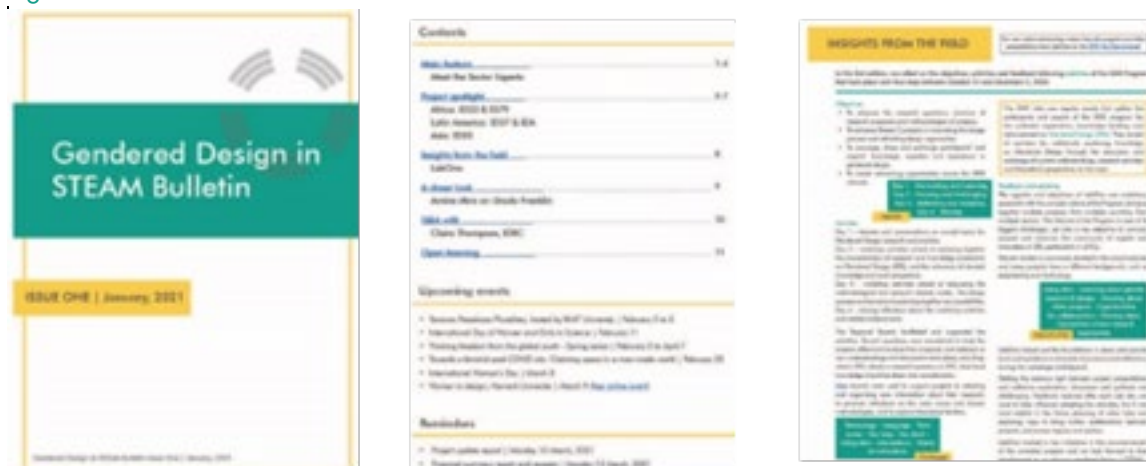
5.2.7 GDS Bulletin Issue Two, March 2021

The second Bulletin was released at the end of March 2021. The main feature was written by Chiara Del Gaudio, the Investigator on the GDs Program and Assistant Professor and Graduate Program Coordinator for the Master of Design at Carleton University, where she provided a brief overview of Participatory Design. The piece also included a list of useful references on the topic. The core team identified participatory design as a fundamental approach that the awarded research projects should become familiar with, where it seeks to hold the user as the central focus throughout their research. We knew following LabOne that this would be a helpful area to cover in an early edition of the Bulletin to help the project teams consider this approach in their research processes.

We spoke with Bjarki Hallgrimsson, the GDS Program PI and Director of Industrial Design at Carleton University in the 'Q&A with' feature. As well as hearing about some of Bjarki's professional experiences, he also highlighted the importance of risk-taking and prototyping in design and STEAM. A topic that the GDS

Program revisited in the [LabTwo](#) in October 2021. Five research projects were introduced from across the regions and some reflections on using Miro as an online collaborative tool.

The same dissemination approach was taken as before with the first issue. Engagement with the awarded researchers' accounts and their institutions increased dissemination and raising awareness about the research projects. [Issue Two is available on the GDS website](#).

Figure 7: 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. There were three update reports as per the schedule in Figure 8. The first update report was due March 2021 for the preceding six months. Each update report required a summary of the work completed, upcoming key milestones, any challenges, gendered design contributions, knowledge mobilization and networks, and a financial summary. Annex F is the project update report template created.

Figure 8: Schedule of projects' update reports

Deadline of report	Period covered in the report
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

The update report was designed to support reviewing the awarded projects' progress and deliverables. Furthermore, by the projects sharing their experiences and expertise, we can understand better the existing gaps and challenges in researching Gendered Design, particularly in LMICs, and see how we can support the researchers in overcoming them. The report also aimed to support the projects in their reflections on their research and progress, keeping in mind the aspects of gender. While the project teams can reach out to the GDS Program Coordinator and the Regional Expert at any time, the update report also helped us maintain communication with the projects. The reports were shared with the core team and associated Sector Expert and RA.

From the information shared in the report, we were able to better design activities to facilitate discussions and knowledge sharing across the GDS Program. It told us if the project teams required more or different support to meet the Program goals. The information also feed into 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.

Alongside this report, a more detailed financial report was also required. A budget-reporting template was provided to all the awarded research teams to use. As with the project update report, this added consistency in the information being provided and the format that it is presented across the 20 projects.

The first update report was submitted towards the end of Year 2. However, in preparation for receiving the reports, we started organizing individual meetings for the awarded research teams and their Regional Expert, member of the core team, and Sector Expert and RA that took place in April and May 2021 to review and discuss their first update report.

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. Updates from the project teams were provided throughout the year and there were several opportunities for the exchange and development of ideas, knowledge growth, and mobilization. The GDS 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. Ongoing administrative tasks included paying the grant installments to the project teams, requesting a no-cost time extension, the subsequent reorganizing of the GDS Program budget and schedule, and maintaining a new way of working during the global pandemic through the running of the second HUB activity, LabTwo. Results started to emerge from the awarded projects during this reporting period. The two sessions run under 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, the GDS main investigators, provided the first major opportunity to document reflections on managing and coordinating the GDS Program between regions, disciplines, scholars, and communities. The paper was accepted for the Design Research Society Conference in June 2022. To paraphrase, it highlights the collaborative process of continually crafting, observing, responding, testing, and tweaking at all junctions of the 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.

Ongoing support and discussions took place, between the core team and the awarded project teams, to develop and implement a gendered dimension to the research process, including the incorporation of user-led methodologies. In particular, the topics and activities designed for the HUB, as seen below in the description of the LabTwo sessions (5.3.3 and 5.3.7), aimed to support these developments and knowledge generation. As with LabOne, the materials, tools, and content of LabTwo were designed to provide research teams with a further occasion to share, learn, reflect, and strengthen their research design processes and gendered practices. 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.

5.3.1 Project meetings with the support network, April 2021

At the end of Year 2, project teams submitted the first of three project update reports. We organized individual meetings for the awarded research teams: they met together for the first time with their Regional Expert, one member of the core team, and the Sector Expert from Carleton University assigned to the project and their Research Assistant. The project update reports were used as background information on the project

and the meeting was an opportunity to discuss research challenges or discoveries, openly and collaboratively. Common themes emerging from these discussions included:

- The challenges of conducting research in the pandemic's ever-changing landscape and the level of adaptability they required.

- Understanding the notion of 'gendered-design' and the expectations from the center on that question.

- The problematic nature of the label 'Sector Experts': while having this title, Carleton scholars in this position often took the project leaders to be the experts in the field they were researching in their local context. Carleton scholars rather saw their role as one of support for collaborations and of partnership in comparable experiences.

- The possible content of LabTwo and what topics the project teams would find helpful to support the development of their research project.

- Communication between projects, regions, and other networks.

- The end of the GDS Program and how to maintain relationships with participants and how to build upon effectively existing efforts towards delivering the result of the research.

As a result, we designed two LabTwo sessions for Year 3, one that focused on the topic of gender and power, and another one looking at prototyping activities specifically for the Stream 2 projects. Further information on LabTwo sessions one and two, are provided below in sections 5.3.3 and 5.3.7. respectively.

A no-cost time extension request helped to ease concern from the project teams who feared that they would not have enough time to complete their research given the delays faced due to the pandemic. The Program Coordinator, who remained in constant communication about this with the project teams, coordinated the process of applying for an extension to IDRC.

While the Bulletin was recognized as an effective tool for communicating about the research project activities and those centrally led, we also encouraged dialogue between the project teams and made sure that this could happen without the coordination from the center. For example, Slack channels were created, and the Regional Expert for Latin America had group meetings with the project teams as well as having WhatsApp communication with them. This was also something that the Regional Expert for Africa implemented. Through this communication and other channels, the notion of what 'gendered-design' is and means for the individual research projects was also frequently discussed, explored, and learned about.

5.3.2 GDS Bulletin Issue Three, May 2021

The GDS Bulletin was introduced in January 2021. The third Bulletin was released at the end of May 2021.

The main feature 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. The 'Open learning' section complemented the main feature by providing a selection of readings on adapting methodologies and conducting research during a pandemic, drawing from a variety of fields.

In the 'A closer look' feature, we spoke with Raquel Noronha and Emmanuel Mutungi, the Regional Experts for Latin America and Africa respectively, on their experiences working on the GDS Program in general, and with the projects in their region during the pandemic.

Continuing the overview started in former issues, five research projects in 'Project spotlight' described the ways by which they were able to overcome the challenges due to Covid-19, to adapt and to proceed with

several of their research activities. In 'Insights from the field', we heard from six projects to learn about the activities they had been undertaking in their communities.

As before, the Bulletin was circulated via email to the known GDS network, shared among their networks and publicised via our Twitter @GenDesignSTEAM and Instagram gendesignsteam channels. Engagement through social media increased dissemination, raised awareness about the research projects, and helped awardees receive more recognition within their institutions.

Figure 9: 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

As we explained above in the report of the Year 2, the GDS HUB became a virtual platform for the exploration and advancement of gendered design knowledge and practice, through different kinds of activities, tools, and procedures, adaptable to the expected and non-expected demands of the lifespan of the GDS Program. LabTwo took place during Year 3.

LabTwo | Session One – The role of power in GD, was created and facilitated by Program Investigator Chiara Del Gaudio and Regional Expert Raquel Noronha[4]. The three-hour session took place on June 25, 2021. Project researchers were requested to register their interest in joining the session by submitting a short bio about themselves and a position statement in under 500 words about how the session topic - the role of power in GD - relates to their research and/or design practice. Ten project leads attended the event that was hosted on Zoom. Annex G is the presentation initially given to the attendees by Chiara and Raquel and the activity instructions created for the attendees at the session.

The session aimed to explore together the interconnection between power, design, and gender, drawing from post-modern and de-colonial perspectives. Drawing specifically from Michel Foucault's[5] and Silvia Rivera Cusicanqui's[6] work, four key concepts were identified to analyze and think about a design practice that embraces gender issues and opportunities; discursive formations and dispersions; conditioned participation; time control; and engagement in making. The first two concepts (Figure 10) were the focus of LabTwo | Session One.

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[4] Chiara Del Gaudio is Assistant Professor, School of Industrial Design and Graduate Program Coordinator for the Master of Design at Carleton University. Raquel Noronha is an Adjunct Professor and Director of Design and Technology and Head of Graduate Program in Design at Federal University of Maranhão.
[5] Foucault, M. (2002) The Archaeology of Knowledge. London and New York: Routledge.
[6] Rivera, Cusicanqui, Silvia. (2010) Ch'ixinakax utxiwa: Una reflexón sobre practices y discursos descolonizadores. Buenos Aires: Tinta Limón.

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.

An open and collaborative conversation based on research and design experiences, theoretical reflections, and speculations was the approach of the session. Beforehand, participants were asked to read and reflect on the two concepts proposed and were invited to think about situations from their GDS design project or professional history, to exemplify the concepts.

At the beginning of the session, Chiara and Raquel provided an overview of the concepts they had identified and explained how they got to this point (Figure 11). Participants then presented their examples for an exchange of peer support and contribution and shared the theoretical references that they used. The small and intimate format provided space for in-depth discussions. As always, the discussion could have gone on for longer than the time allocated to continue exploring discoveries.

Figure 11: Power studies timeline (work in progress)
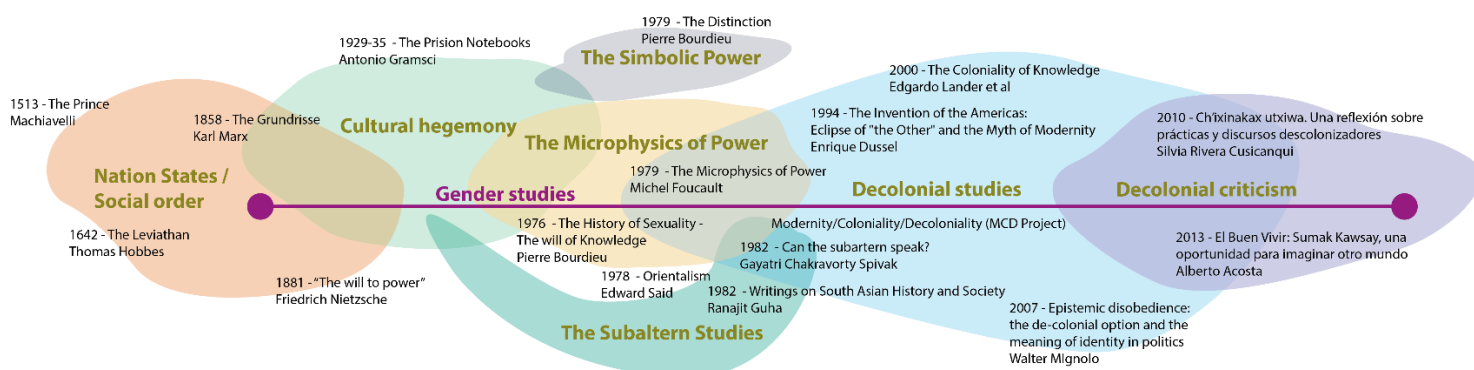
5.3.4 Research projects second update report, July 2021

We designed a 'Project update form' to be used three times by the awarded research teams during the lifespan of their projects (example provided in the Year 2 report). It requires a summary of the work completed, upcoming key milestones, any challenges, gendered design contributions, knowledge mobilization and networks, and a financial summary. The first update report was submitted in March 2021. During Year 3, the research projects submitted two further update reports.

The update report helped the core team review a project's progress and deliverables. From the information shared in the report, we were able to better design activities to facilitate discussions and knowledge sharing across the GDS Program. We established if a project team required more or different support to meet the Program goals. For instance, after the submission of the first update report in March 2021 we designed

LabTwo | Session One – to support and facilitate discussions on 'The role of power in GD' (see 5.3.3 above). Similarly, in the series of second project update reports of July 2021 a common theme about prototyping emerged, which had previously been raised through other feedback channels and discussions. This led to LabTwo | Session Two – Prototyping workshop to be designed and executed (see 5.3.7 below).

All Regional Experts, Sector Experts and RAs were invited to read the project update reports and provide comments based on their observations. In some cases, the comments were provided in the form of a recorded video. The Program Coordinator sent these comments and feedback to the projects and helped arrange meetings that were requested to discuss further, as requested. In addition, the research project teams across Latin America held some collaborative sessions facilitated by the Regional Expert.

Alongside the project update report, a more detailed financial report was also requested from the projects, using a budget-reporting template (see Year 2 report). After some issues in Year 2 with processing the initial payment to projects, primarily in Brazil, all subsequent grant installment payments made during Year 3 were expedited, as the financial transaction pathway was now set. However, some projects faced problems with local bureaucracies in accessing the funding as needed. During Year 3, it became apparent that some projects, if not all of them, would have to adjust their anticipated use of their fund between the different financial categories in their proposal. Adapting fieldwork approaches due to Covid-19, recruiting students for a longer period, or requiring additional equipment to support virtual collaborations, were some of the mitigating factors. Accordingly, a 'Budget change request' form (Annex H) was created for project teams who wanted to adjust the allocation of funding between the different financial categories, within the conditions of the grant award, and without requesting additional funds. The form created consistency and oversight and prompted the projects to plan and review their budget expenses. While a project team would not be penalized if they did not submit this form during their project to adjust the allocation compared to their original proposal, it was good practice to instill, and projects were encouraged to follow.

5.3.5 GDS Bulletin Issue Four, July 2021

The main feature of the fourth Bulletin, released at the end of July 2021, was written by Angélica Bernal Olarte from project ID80 – 'Re-imagining urban territories for women's autonomy in Colombia'. She wrote a piece on critical outlooks from the perspective of feminism, where she writes about some of her work, which 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.

The Bulletin included a report of 'LabTwo | Session One – The role of power in GD', described in this report above. Another five research projects were introduced from across the regions in the 'Project spotlight', as was the fieldwork of five different projects in 'Insights from the field'.

The Bulletin was circulated as described previously. Read Issue Four of the GDS Bulletin.

Figure 12: Front cover and some content from GDS Bulletin Issue Four, July 2021

5.3.6 Interviews with project Principal Investigators and IDRC, September to December 2021

From September to November, all awarded project's Principal Investigator (PI) were interviewed by the core team. Based on an oral history approach, the interviews were conducted on a one-to-one basis and lasted 1 hour to 90 minutes. They were in the style of an open discussion, or semi-structured interview that followed some high-level topics. The interviews were not a test nor an assessment and this was communicated to the participants to help put them at ease.

Dominique Marshall, Chiara Del Gaudio, and Ona Bantjes-Rafols[7] worked together on this aspect of the Program. They agreed on the themes (Figure 13) to be addressed during the interview and created a script or guide, mindful of the importance of allowing interviewees to use their vocabulary without imposing the use of specific words such as design, gender, and STEAM. The full interview guide can be found in Annex I. A set-up of one interviewee and one interviewer was chosen to foster 'intimacy', reflection, and sharing. The interviews happened, when possible, in the interviewee's language of choice; Chiara conducted four interviews in Portuguese, Ona four in Spanish, and Dominique 12 in English. The interviews took place over Zoom and were recorded. The recordings were then professionally transcribed in the original language of the interview. The Spanish and Portuguese transcripts were professionally translated into English.

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.

Figure 13: 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.

Part two of the interview explored the influence of the GDS Program on their research and the role of; meetings with their Regional Expert and Sector Expert; the regional grouping approach – Asia, Africa, and Latin America; and GDS core-lead activities such as LabOne, LabTwo, and the Bulletin. The second part of the interview also looked at the sustainability of this research and practice over time.

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[7] Dominique Marshall is a Historian and one of the PIs for the GDS Program and Chiara Del Gaudio is the GDS Investigator. Ona Bantjes-Rafols is one of the Research Assistant Coordinators and a Master student in Public History who has experience in conducting oral history interviews.

In December 2021, an additional interview took place, following a similar approach in format, lasting approximately two hours over Zoom. Dominique Marshall led the interview 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.

With all the interviews, at the start, verbal consent was gathered from the interviewee and recorded on Zoom for record-keeping. With the overall ethics application of the GDS Program, project PIs had previously submitted written consent for the participation and use of any data and information gathered to be used by the core team at Carleton University.

5.3.7 LabTwo | Session Two – Prototyping, October 2021

LabTwo | Session Two workshop was designed to bring together the Stream 2[8] projects to explore their experiences of the prototyping aspect of their research and provide an opportunity to learn from each other and discover what prototyping means in different contexts and research fields. The need emerged not only from the project update reports (see above) but also from the results of a questionnaire in April 2021 sent to all project teams about possible topics of interest.

The workshop was run twice, on October 20 and 22, 2021, to ensure that all projects could attend, and that there would be time for their work to be presented. Eleven Stream 2 project teams signed up. Stream 1[9] projects were also invited to attend the workshop as observers, as it was recognized that some projects might benefit from learning about this stage for developing their research in the future. The session was planned and presented by GDS PI Bjarki Hallgrimsson, with collaboration from Regional Expert 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 when one works in the tradition of Participatory Design. Some of the themes of the workshop included:

- The definition of prototyping within a project – physical vs. non-physical outputs.
- Prototyping as a verb, versus a noun, and how it is being employed as a research method.
- Technology vs. human-centered research objectives.
- Participatory, including questions related to agency – who decides who gets to be involved and how.
- Managing risk, trusting the process, and transparency.
- The iterative process and how design never really ends.
- How it helps evolve past academia and involve the community.

Ahead of the workshop, a [Miro board template](#) was created to be a focus of collaborative thinking during the workshop session, with some information being prepared ahead of time (Figure 14). The GDS Research Assistants (RAs) from Carleton University, who each support one or two awarded projects, completed two main activities ahead of the workshop. The first activity was to provide an overview of the project's

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[8] Projects that include prototypes coupled with case-study research that will result from research-through-design, to achieve new processes and artifacts.

[9] Projects that are case studies and/or narratives of experiences that provided examples of either success or failures in terms of 'gendered innovation'.

prototyping activities, and the second was to produce a timeline of the project's prototyping activities (Annex J).

The GDS RAs reviewed all the information previously provided by the projects – the proposal, update reports, and articles from the GDS Bulletin – to identify prototype activities, their purpose and objectives, and anything that had a gendered lens.

Figure 14: Prototyping timeline activity in Miro – example of three project's timeline
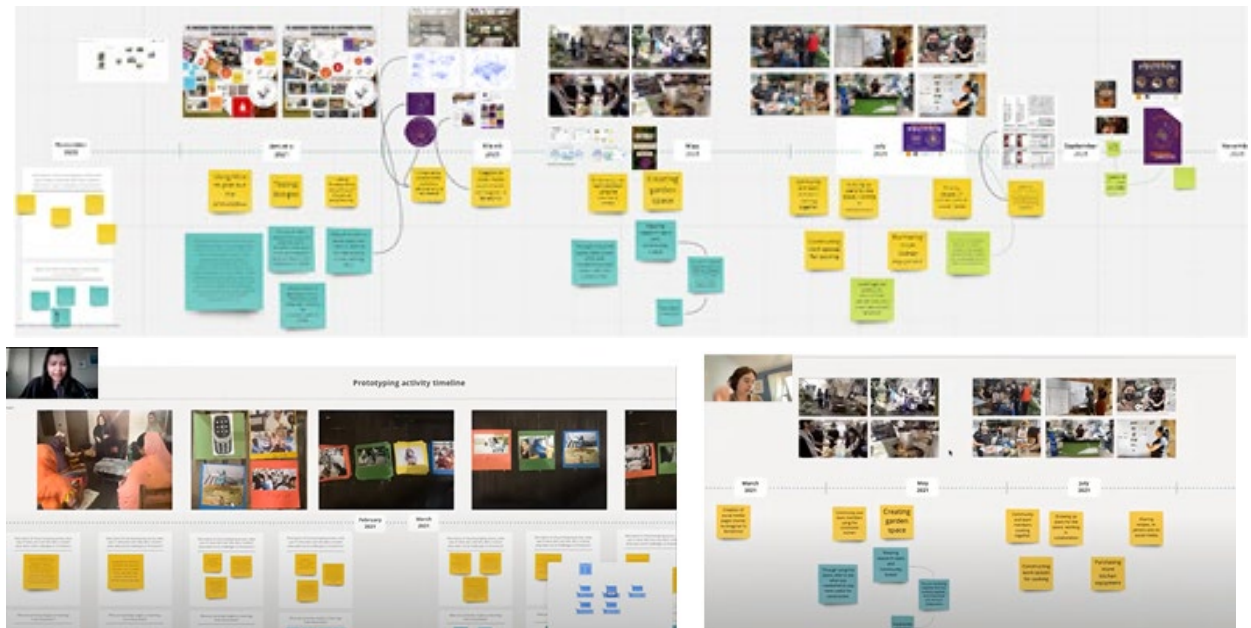
5.3.8 GDS Bulletin Issue Five, November 2021

A report of 'LabTwo | Session Two – Prototyping' was the main feature of the fifth Bulletin, released at the end of November 2021. This included an introduction from Bjarki Hallgrimsson, GDS Program PI and, at the time of the session, Director of The School of Industrial Design at Carleton, who designed the LabTwo workshop. His collaborator for this aspect of the Program, Emmanuel Mutungi, Regional Expert for Africa, provided a closing statement in this introductory piece.

We spoke with Dominique Marshall, the GDS Program Co-PI and Professor of History at Carleton University in the 'Q&A with' feature, about professional highlights and experiences from her long career as a historian. She discussed how history and social sciences connected with the fundamentals of the GDS Program of gender, design, and STEM; reflected on lessons and hopes from her involvement in the GDS Program. The Q&A was cross-posted in the blog series of the Canadian Science & Technology Historical Association (CSTHA).

'A closer look', provided an overview of the research conducted by Chiara Del Gaudio and one of her students on design choices and gender. The project, 'My gender assumptions: Exploring and undoing unaware gender violence by design', emerged from activities and exchanges made possible by the GDS Program.

The 'Insights from the field' section, showed details and interesting features of the practical work of the remaining nine research projects from across Asia, Africa, and Latin America.

As before, the Bulletin was circulated via email to the known GDS network and was also publicised via our Twitter @GenDesignSTEAM and Instagram gendesignsteam channels. Read Issue Five of the GDS Bulletin.

Figure 15: Front cover and some content from GDS Bulletin Issue Five, November 2021

5.3.9 Research projects third update report, December 2021

Given that the research projects had been going on for a year at the point of the third update report, for the period 1 July to the end of December 2021, it contained an abundance of detail and visual documentation.

A couple of research projects were starting to conclude their activities. Most often, the comments made by the Regional Experts supported the progress of the project, and in some instances offered advice or guidance on the next steps. Again, individual conversations, where requested, took place between the project team and the Regional Expert to discuss in more detail the comments received.

At this time, many teams submitted a 'budget change request' form to adjust the distribution of their grant award across the budget categories (see above). Finally, we made a slight adjustment to the release of the awarded project fund installments. Based on the original timetable there would be one payment left to make, which was the 10% holdback amount for each project to be released on submission of their final report. Due to a time extension and this moment now being a further six months away, awarded research projects may have needed more of their grant award upfront to continue their activities. We, therefore, decided to release half of the 10% holdback for each project after the submission of their third update report. This meant that there was now a 5% holdback amount due to each project following the submission of their final report.

5.3.10 Design Research Society (DRS) paper, December 2021 to March 2022

Chiara Del Gaudio, GDS Investigator, and PIs Bjarki Hallgrimsson and Dominique Marshall, wrote a paper for the Design Research Society (DRS) Conference, 2022. Their paper provided an overview of how we designed a research Program for transdisciplinary knowledge production through the convergence of research knowledge and approaches from scholars in design, social sciences, and engineering. The paper reported on the lessons learned on the methods and role of design in transdisciplinary research and it introduced both the theoretical background and the process of the Program. It reflected on the process collaboratively crafted, observed, tested, and tweaked, at all junctions of the GDS Program journey - between regions, disciplines, scholars, and communities.

The paper recognized that the GDS research Program is made possible with the support of funding from IDRC, and it 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 presented the findings of our empirical exploration of how to support the emergence of a new transdisciplinary area of research and practice, what we defined as Gendered Design. Theoretical and methodological openness, design-driven strategy and experimentation, and a holistic and effective

approach to research collaboration and relationships emerged as key factors for research able to overcome disciplinary boundaries and catalyze processes of empowerment.

The paper was accepted into the DRS Conference in Bilbao, Spain, taking place from June 26 through to July 2, 2022. Read the full paper.

5.3.11 Planning the completion of the Program, January to March 2022

A final report template for the research project teams' use was created over January and February 2022. The template followed a research report format and included aspects that the GDS Program is reporting here to IDRC. In addition, some of the questions that the projects have been asked to consider and reflect on throughout their research project were included. A final financial reporting template was also created for the research project teams' use. This was shared with the project teams early into Year 4.

Following several meetings amongst the core team and with our Regional Experts, the first draft and outline of a summative event were developed. This would be a moment to mark the end of the GDS Program and celebrate all its achievements. The summative event will be predominately virtual with those from the core team in Ottawa coming together to host the event from Carleton University. We are considering logistics and budget to bring our Regional Experts to Carleton for the event and to take part in relevant seminars in the days surrounding. We started to plan for the closing event to take place early October 2022.

Other areas that we started to plan for include, the video and poster for the project teams; the GDS website content and launch; and a special issue of the Bulletin.

5.4 Year 4 | 1 April 2022 to 31 December 2022

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 on the paper. Unfortunately, Chiara was taken sick with Covid at the conference and was therefore unable to present the paper with Bjarki on stage.

5.4.2 Submission of final reports from research project teams, June 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. The comments were collated on a shared platform, so it was possible to read the comments provided by others on the reports. The comments and feedback were not automatically shared with the project team but provided in instances where this was requested. For one project team further clarity and information was requested to fully understand some of the activities and outputs. We also had a meeting with one of the project teams who were keen to speak with the core team again about their successful project.

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, April to September 2022

The outputs for each of the awarded research project teams included an accompanying video presentation and poster summarizing their work and achievements. 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 had some challenges completing these tasks due to the availability of the RAs. To cover gaps that appeared in the summer we recruited additional RAs from History and Industrial Design to pick up a project or two and dedicate time and effort to complete the poster and video. This worked successfully.

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 RAs at Carleton University started developing the storyboard for the projects they were associated with supported by our Research Assistant Coordinators and Program Coordinator. The purpose was to help tell the story of the project. Several meetings took place during the creation process of the project videos, with PI Dominique Marshall providing advice on content to each RA. Once the videos were created, a detailed process of editing and adding consistent design elements and features took place with the Program Coordinator overseeing this process with a communications design student. 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 who is in the School of Industrial Design. There were four variations of the template created to account for differences in content for the projects and there was still flexibility to adapt the layout as needed. The RA associated with the project created the poster and the content was reviewed by PI Bjarki Hallgrimsson. We were unable to complete and print all the posters for the summative event, but we had 11 posters on display in the room that we hosted from. The remaining posters were finalized shortly after. 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 hard copies were distributed to each project team.

As well as posters for the research project teams, we also designed and created a poster to reflect the GDS Program overall (Annex M). This was printed and displayed during the summative closing event and is available on the GDS website. We plan to display the poster along with the research project team posters at a location at Carleton University in the School of Industrial Design (SID) and rotated with a location in the Faculty of Social Sciences. Currently the GDS Program is displayed in the halls at the SID.

Figure 16: Poster templates
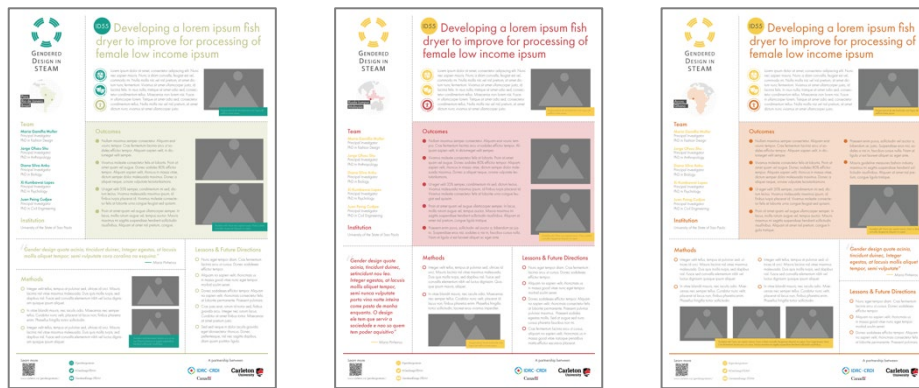
5.4.4 Closing GDS event, October 2022

The closing event was held on Tuesday 4 October 2022. The order of the day is shown in Figure 17. The invitation and schedule for the event (Annex N) was shared with the network approximately one week before, although the date and time had been held circulated to the network a couple of months previously. 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 (Figure 18). Most of the participants attended virtually through Zoom. We had initially made plans for our Regional Expert from Africa and Latin America to join us in-person for the event. However, due to ongoing travel disruption and delays caused by Covid-19, we decided that their contribution for the GDS event could be provided virtually. The other plan activities were put on hold. Due to the time zone difference, it was difficult for the Regional Expert for Asia to join the event live; they instead provided a pre-recorded message that was played.

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. The videos were played by the host of the event and with the screen shared for viewing by the participants. The video groups were also available on our GDS YouTube and the links were shared with the online participants as a backup should there be technical issues with sharing our screen. 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.

In conjunction with the summative event, we also issued a department press release. A change in strategy meant that Carleton University no longer issues press releases. We therefore adapted and instead issued our 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.

Figure 17: Agenda for the GDS closing event

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 11:00am
    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
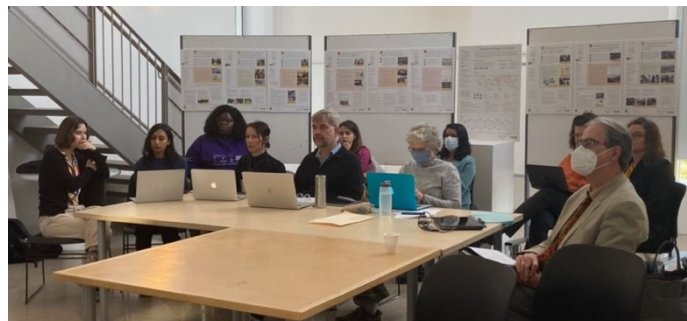Closing remarks| 11:00am to 11:20am
    Raquel Noronha | Regional expert for Latin America
    Emmanuel Mutungi | Regional expert for Africa
    Katie Bryant | IDRC, Program Officer for GDS
    Bjarki Hallgrimsson & Dominique Marshall | PIs GDS Program

Figure 18: 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)

Alongside the closing event, we conducted a social media campaign through our Twitter and Instagram channels to highlight the Program and the individual achievements of the awarded research projects. The Twitter account released an individual Tweet for each project with an image of the poster created. Where this was not available, another image was used. The Instagram campaign shared a post for each project and included images from their fieldwork. In both instances, a link to the GDS website was included where there was more information available about each project. Annex O shows how the campaign on Instagram looked.

5.4.5 Launch of the GDS website, October 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.

The website includes background information on the GDS Program, details of people who have played a role in supporting its successful progression, links to our Bulletins and information about all 20 research projects, including links to their summative video, poster, and further information as provided by the teams. It also has an interactive map, created by one of our RAC Ona Bantjes-Rafols. There is a 'Resource library' section that compiles in one place GDS related resources, including the interview guide used for the PI interviews, the Miro board templates and a link to Carleton's Open Journal System (OJS) where the Bulletins and individual articles from the Bulletins are available.

The project teams also have the option to add additional information to their page. A few project teams have taken advantage of this platform and provided links to videos of seminars or workshops, papers and reports that further showcases the work that they have been doing since their final report that was due in June 2022.

5.4.6 GDS Bulletin Issue 6, November 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 objectives and aims of the GDS Program and the goals that it sought to achieve. It has an overview of the structure of the GDS Program and 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 under the GDS Program. We have a couple of short pieces highlighting the DRS conference and the gender assumption tool (see 6.1.3).

The Bulletin also shared 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 drawing on their insights and the importance of the GDS Program. We close with experiences shared by the Program's Research Assistant Coordinators and a few of the RAs.

We printed some copies that were posted across the network. It is available digitally to download from the GDS website and was also shared via email across our network for dissemination. The last Bulletin, along with all the others, will be added to the Carleton University library (OJS) and will also be sent to the Library Archives Canada. This will be completed as part of our archiving activities.

Figure 19: Front cover and some content from GDS Bulletin Issue Six, November 2022
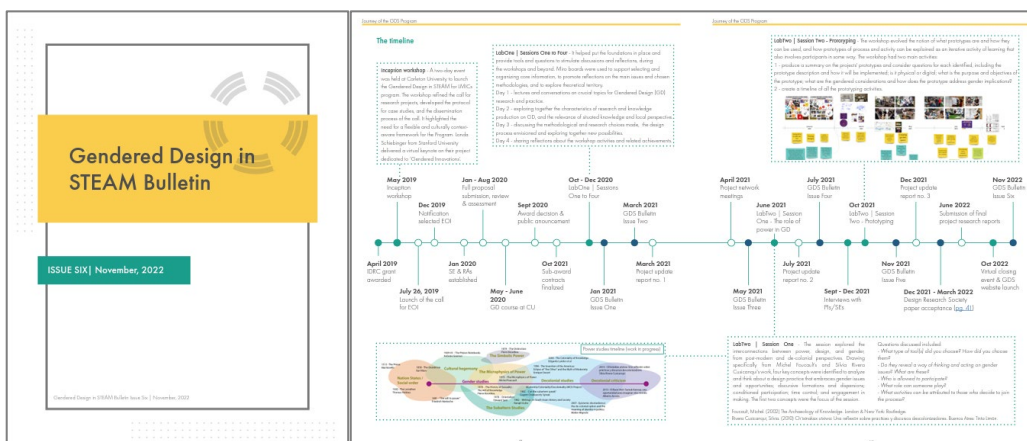
5.4.7 Closing Program administration, October to December 2022

The contracts for the project teams officially ended on 31 October 2022. However, there were some ongoing financial administrative matters to resolve regarding the last funding payment and the return of any unused funds. The core team began work on their final technical report and received an extension to complete and submit the report early 2023. This would allow opportunity for the PIs to contribute to report as they were unable to do so before the holiday period. IDRC provided comments on the initial draft of the report before the holidays, which will be helpful in the re-drafting of the report.

A proposal was written by the core team to use the small amount of remaining funds to conduct a feasibility study on what it would take to develop a series of teaching modules to build upon and strengthen the networks, knowledge and findings discovered during the GDS Program. Unfortunately, this was rejected. We returned with a new proposal (Annex P) that covered the proper archiving of the GDS materials and resources so these would be available for future research by others and for a small synthesis piece 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 project management, April 2019 to December 2022

This section describes the ongoing project management challenges and activities throughout the duration of the GDS Program.

5.5.1 Year 1, April 2019 to March 2020

There was a **change in staffing** for the core team at the end of February 2020 when Kerry Grace joined the team to replace Beth Robertson as the new Program Coordinator. Kerry officially started March 1, 2020 but attended Carleton University for a few days with Beth at the end of February to accommodate the handover. This change in personnel was also a moment for the job description of the role to be amended to better suit the requirements of the GDS Program long-term. It was a shift away from a predominately scholarly position to a unique project management role to have the oversight, foresight, and drive to match the multifaceted structure.

The **global Covid-19 pandemic** started in March 2020, and it was evident that it 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. Annex B includes the new high-level program schedule created for the key activities for the following year.

There was an underspend in Year 1 compared to the **forecasted budget**. This is partly accounted for by:

- The consultation fee for the gender expert was no longer a cost, as the person recruited to this role was at Carleton University.
- The Research Assistants and Coordinator were in post in the latter part of the year.
- A reduction in travel for the inception workshop for consultants. We identified that the forecasted budget for international travel more generally will likely reduce.

We started to consider how **online activities** could be leveraged for the activities of the GDS Program, especially as it seemed there would be greater reliance on using virtual spaces. This would allow us to be more proactive with raising awareness and engaging with relevant audiences to increase knowledge mobilization. We had also already begun questioning the original plan efficacy of having regional conferences, as the cost allocation was high while number of attendees low and an unnecessary carbon

footprint impact. We anticipated a reduction in airline travel and an increase in using online tools of communication to provide a broader and more continuous collaboration in real time.

5.5.2 Year 2 | April 2020 to March 2021

Project management of the GDS Program was heavily impacted by the **global Covid-19 pandemic** that had begun just before the start of Year 2. It had implications on the schedule for the Program, the way some activities were planned and executed, as well as on the awarded projects being able to start their research projects and fieldwork. The projects were subject to different levels of local restrictions and Covid-19 numbers meaning that the ability to start was 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. This was one factor in the longer than planned proposal review.

At the start of this reporting period, we began adjusting and thinking about how the Program needed to respond to delays caused by Covid-19 and the need for a **new timetable**. The timetable had already shifted with delays on the award decision according to the original timetable and the start date of contracts with the awarded projects shifted by nine months. Annex B includes our proposed amended Program schedule highlighting the key activities until the end of the Program pending approval of a no-cost time extension, which was later granted.

Alongside the delays caused by Covid-19, there were further delays in projects being able to start their research due to challenges in the **grant funding arriving at the awarded institute**. These delays were caused by a combination of local regulations in receiving payments to their financial institute; the payment transfer from the awarded institute to the awarded research project team to spend; and some errors in the banking information provided to Carleton Financial Services for the transfer. Once the payment trail had been set for the awarded projects, future payments were quicker to process and complete.

An ongoing challenge for the GDS Program throughout Year 2 was the time it took to **fill gaps in Carleton Sector Experts (SE) and supporting Research Assistants (RAs)**. Gaps appeared as some Professors had to step away from their role as SE on the GDS Program due to conflicting and additional teaching commitments. In addition, as students graduated, this too left some gaps. The GDS PIs spent time searching for suitable replacements for these gaps during Year 2 and was an ongoing risk.

During Year 2, the GDS Program's **ethics application** was written and processed. The Carleton University Research Ethics Board-B (CUREB-B), which operates in compliance with the Tri-Council Statement: Ethical Conduct for Research Involving Humans, granted clearance in February 2021. The ethics application covered the data collection, methodology, structure, and direction of the GDS Program from the perspective of a research project for the exploration of how to support scholars interested in researching gendered design in LMICs. Actions as part of the application included the completion of the TCPS2 certificate by the core team, Regional Experts, and Carleton's RAs. All awarded research projects were contacted to review and sign a consent form, if given, for the use of the information gathered and generated by them under the GDS Program for this exploratory research. Chiara Del Gaudio led and continued to manage and update, as needed, the ethics application throughout the Program.

We started to plan for a **no-cost extension and budget re-organization** for official agreement from IDRC that was submitted in Year 3.

5.5.3 Year 3 | April 2021 to March 2022

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. The projects were subject to different levels of local restrictions and Covid-19 numbers meaning that the ability to conduct their research was different for each project. The knock-on effects of 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 provide reassurances to the awarded projects that they will have time to see their projects through to the end.

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 that could further impede project progress. We had anticipated some delays caused by Covid-19 and had a **sub-award end date** that took the project team beyond the original 12-months. Following the depth review of the overall GDS Program timetable, this shifted activities into a fourth year for the GDS Program with an overall no-cost time extension of nine months. A proposed **budget reorganization** to reflect the changes in ongoing and forthcoming activities were also presented.

Working with Carleton's Research International department, we formally presented to IDRC on September 13, 2022, a **no-cost time extension** for the GDS Program that included the following key milestones of activity and delivery:

- Awarded projects final report due: June 30, 2022
- Creation of project video and posters due: September 2022
- Completion of GDS website: September 30, 2022 (launched with the summative event)
- Awarded research projects contract end date: October 31, 2022 (previously April 30, 2022)
- Summative event to mark the end of the GDS Program: early October 2022
- GDS Bulletin Issue 6 - Special Edition and GDS website launch: October 2022
- Work completion and final reporting to IDRC: December 31, 2022 (previously March 31, 2022)
- Prime agreement end date: March 31, 2023 (previously June 31, 2022)

The time extension was approved by the Director from IDRC on December 16, 2021, and the official paperwork was fully signed by February 9, 2022.

During Year 3 there were three **grant installments paid** to the awarded research project teams. The first two were administered as planned after the submission of the project teams' first (March 2021) and second (July 2021) update report. We administered an additional installment to the project teams in January 2022 after the third update report that was half of their 10% holdback payment. The remaining 5% of their grant award was paid after the submission of their final report in June 2022. Since the project end date had been extended, we felt that it would be beneficial to the project teams to receive some additional funding earlier rather than keeping the whole 10% as a holdback installment payment.

Some projects continued to be compounded by delays caused by local challenges in the regulations in receiving payments to their financial institution and the payment transfer from the awarded institute to the awarded research project team to spend. Unfortunately, these challenges could not be overcome by action that Carleton University could take.

Chiara Del Gaudio, who managed the **ethics** for the GDS Program, submitted two changes to the protocol, one in September 2021 and another in March 2022 to account for expanding the scope of data collection

to include the oral history interviews and to allow the possibility of putting the information collected from the interviews into public archives and for use in the final exhibit outputs on the research projects. Both received clearance from the CUREB-B. We did not provide any ethics clearance for the awarded research projects, as that was beyond our remit and sits with any local project requirements and local rules.

As part of the review of Program activities and the **budget proposal** to IDRC, we deemed much of the international travel impractical given the current pandemic climate. The cost allocated for travel in the original budget was high and the evolving tools for online collaboration were less commonplace and tested at that time. We shifted many activities online employing new tools for collaboration that accomplished many of the original activities that had been planned through regional workshops. A small amount for travel remained in the budget allocation for some limited activities in Year 4. In the new forecast, we shifted much of these funds to support the ongoing need for a Program Coordinator and ongoing Research Assistant Coordinators, who played a key role in Year 4 with the development of the GDS Program website, summative event and supporting activities, finalizing GDS Program outputs.

5.5.4 Year 4 | April 2022 to December 2022

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. Some projects continued to face challenges locally in accessing their funding to progress and complete their research activities. In addition, changes in one institute's bank account information created some delays in payment making it through successfully.

Projects submitted an interim financial report with their technical 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. These were reviewed by the Program Coordinator and in some instances further information was needed from the project team as there was some confusion on how to present funds 'lost' in exchange rates or banking fees. Outstanding funds needed to be returned to Carleton. There were two projects identified as needing to return a small amount of unspent funds. The process for this was shared with the team and the administrative department of their institution. Due to the holiday period this action was outstanding at the end of 2022. Project teams have said that they will be processing the return in January 2023. Ongoing limited resources and capacity in Research Accounting at Carleton to support the Program have slowed down some actions.

During the final stages of the GDS Program, we continued to have some RA gaps. We fortunately had some recommendations of students at the end of winter term, the start of summer that joined to support completing the task of the project video and posters. However, we also had some students step-away last-minute meaning that some work had to be picked up by others at the last minute. We were fortunate that our RAs who recently joined were willing and very capable at helping pick up this additional workload in time for the closing event.

The first draft of the final technical report was completed before the holiday vacation period. Due to the limited availability of the Program PI's, it was not possible to have their input before the original date of report submission, this being 31 December 2022. IDRC were updated on these delays, and they also had a chance to review and comment on the initial draft of the final technical report before the holiday break. It was agreed that the report could be submitted in early 2023, to provide time for the comments to be

addressed and for the PIs to contribute to the content of the report.

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 on what it would take to develop a series of teaching modules to build upon and strengthen the networks, knowledge and findings 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 resources and a synthesis piece that would look across the projects based on a particular theme, such as supporting future work for the southern projects and sustainable research. The details of the focused piece of work will be planned early 2023 and will be completed by 30 June 2023.