HIBAR-B
HIBAR RESEARCH BUDDIES

HIBAR Research Buddies Pilot Project Report

Summer 2024

THE UNIVERSITY OF BRITISH COLUMBIA

Contact us by email at hibar.b@ubc.ca

A brief overview of HIBAR Research Buddies

HIBAR Research Buddies (HIBAR-B) is a student-led project at the University of British Columbia (UBC) to build a community of graduate students who care deeply about engaging directly, through their research, with experts working outside of academia. Community activities showcase societally-engaged projects that are underway at UBC and offer meaningful research opportunities for students. Scholarly projects of this type aim to discover new knowledge and address societal problems, and they do so in deep partnership with problem-solvers outside of academia.

These projects, which can be described as Highly Integrative Basic And Responsive (HIBAR), have always existed in universities, and students who participate in HIBAR projects gain opportunities for meaningful societal connections through their research. This student-led project focuses on activities that will showcase impactful HIBAR projects, emphasizing the role of graduate students as key members of these research teams. It will also highlight opportunities for students to participate in activities that will, over time, help to change the academic culture toward more societally-engaged research.

The effort was launched in April 2023 as a 1-year pilot project to assess interest among graduate students to belong to a cross-campus, student-led community of this type, and to demonstrate that it is feasible to establish the community through a series of focused, student-led activities. During this 1-year pilot, we:

- Conducted a research interests survey of UBC graduate students to learn more about their research interests. The 200+ responses have informed our activities.
- Conducted one-on-one interviews with 17 students who have participated in HIBAR projects, to develop a better understanding of how the HIBAR-B community can support students.
- Attracted 370 UBC students from more than 100 departments to subscribe to our mailing list.
- Hosted an introductory webinar with seven graduate student presenters who shared insights gained from their HIBAR project experiences.
- Launched a monthly newsletter to share with our growing HIBAR Research Buddies community.
- Invited interested community members to meet for a “Buddy Coffee”, to get to know one another and discuss our growing community.
- Hosted a fun and engaging launch event, held simultaneously on both UBC campuses and attended by graduate students from more than 40 research disciplines.
- Carefully documented our activities and assessed their effectiveness.

We have demonstrated that there is clear and significant interest among UBC graduate students across both campuses to belong to the HIBAR Research Buddies community, and we have designed a framework for future activities that will build a vibrant and engaged community over the next several years. In this project report, we share lessons learned and recommended next steps to help the HIBAR Research Buddies community continue to grow, both at UBC and beyond.

Table of Contents

1. The motivation for launching this project

HIBAR Research Buddies is a student-led project launched in April 2023 at the University of British Columbia (UBC) to build a community of graduate students who care deeply about engaging directly, through their research, with experts working outside of academia. The project was motivated by the recognition that research culture within universities has historically been largely inward-looking, leaving many students with a perception that university research is out of touch with the needs of society. HIBAR Research Buddies aims to create a welcoming community for students, reinforcing their sense of belonging within the academic research environment by showcasing societally-engaged projects that are underway at UBC and offer meaningful research opportunities for students.

HIBAR Research Buddies activities connect like-minded students with each other and highlight opportunities for students to participate in activities that will, over time, help to change the academic culture toward more societally-engaged research. There are a number of well-established initiatives at UBC that have demonstrated significant interest among graduate students in societally-engaged research, and this new pilot project is similarly motivated to better align university research with the needs of society. HIBAR Research Buddies has several unique and complementary characteristics:

- It is a student-led effort.
- Community activities are open to all graduate students, regardless of their research discipline or program, and regardless of whether they are currently participating in societally-engaged research projects.
- The value of co-leadership of research projects by academics and external experts (a topic that is intrinsic to all Highly Integrative Basic And Responsive projects and is typically not addressed in graduate student curriculum) is a central focus of the activities.

2. The leadership team

This pilot project was led by a team of nine UBC graduate students:

Sandra Cuadros (PhD student, Quantitative Ecology, UBC Okanagan)
Hannah-Ruth Engelbrecht (PhD student, Genome Science, UBC Vancouver)
Segun Fatudimu (PhD student, Global Studies, UBC Okanagan)
Rubia Guerra (PhD student, Computer Science, UBC Vancouver)
Sharayu Jakhotiya (PhD student, Forestry, UBC Vancouver)
Nils Henning (MA student, Power, Conflict, and Ideas, UBC Okanagan)
Chun-Yin Huang (PhD student, Electrical and Computer Engineering, UBC Vancouver)
Jakob Marshall (PhD student, Medical Physics, UBC Vancouver)
Fernanda Novoa (MA student, Health and Social Development, UBC Okanagan)

The student leaders were supported by project advisor Michele Mossman, a Research Associate at UBC Vancouver and Manager of the HIBAR Research Alliance. Brief biographies of the leaderships team members are provided in Appendix A.

3. Project launch

The project launched with a grant from the UBC Faculty of Science in response to their call for proposals to their Strategic Innovation Fund program, funding 3 part-time graduate student leadership positions. We then approached Deans of several other faculties who we knew were strong supporters of the project to request funds to enable additional leadership stipends. We confirmed 6 additional positions funded by two UBC Okanagan faculties (Arts & Social Sciences and Health & Social Development) and two UBC Vancouver faculties (Forestry and Applied Science). We are grateful to these faculties for their support.

We advertised the leadership positions during February 2023 and circulated the advertisement as broadly as possible, though our communication channels were initially somewhat limited. All UBC graduate students were eligible, and we received a total of 39 applications - 11 from UBC Okanagan, and 29 from UBC Vancouver. We interviewed all applicants during a 10-day period in early March, and we offered positions to 9 applicants in late March. All accepted the positions, and the project started in early April.

When we circulated the advertisement for these initial leadership positions, we did not have established communication channels to easily reach graduate students across campus, so the distribution was somewhat limited to faculties and schools in which we had strong existing relationships with an individual faculty member or administrator. Now that we have broad communication channels established with departmental graduate coordinators across both campuses, we can circulate future advertisements much more broadly. Even with the somewhat limited circulation of the initial advertisement, the response from both campuses was encouraging – those who applied were enthusiastic, and the nine confirmed leaders were eager to get started.

The start-up phase was fun but challenging, given that 10 people (9 student leaders + 1 project advisor) were getting to know one another while also figuring out how to start the project from scratch. It was further complicated by the fact that half the team was based at UBC Okanagan and the other half was based at UBC Vancouver, with no opportunity to meet together in person. We did make it work, but it took longer to figure out how best to work together and what to focus on. In the first few months of the project, we spent a lot of time collectively developing the vision, mission, and goals for the project.

We now have a solid foundation on which the next leadership cohort can build. Based on what we learned, there are several things we recommend for the next stage of the project:

- Advertise the leadership positions as broadly as possible, to increase diversity and representation on the leadership team and further strengthen the cross-campus nature of the community.
- Start and end each leadership cohort term with a team retreat: To facilitate initial team-building and wrap-up, organize an in-person event (at least one day, and ideally two days) for the leadership cohort. If the timing can work for subsequent cohorts to overlap, the retreat can also facilitate an efficient transition.
- Emphasize the value of having in-person meetings throughout the project, and build in more informal, unstructured social time. In addition to being more fun than meeting online all the time, these are important opportunities to build relationships which facilitate communication.

Funding

The project was launched with $101,250 to support part-time stipends for nine graduate student leaders, each contributing 5 hours per week for the 13-month duration of the project. The original proposal focused on a webinar series which had minimal expenses other than the leadership stipends. As the project got underway and it became clear that students attracted to this community were very interested in in-person activities, we developed an activity plan that focused approximately half of our effort on in-person events. Additional funding was needed to cover in-person activity expenses and we started looking for appropriate grants to support these activities.

Funding opportunities through existing programs were limited, but we identified two funds supporting student events and our applications to these two programs were successful. We received $1,500 from the Walter H. Gage Memorial fund to host a launch event at UBC Vancouver and $1,000 from the Tuum Est Student Initiative Fund to host a simultaneous launch event at UBC Okanagan. The HIBAR Research Alliance provided $2,000 to supplement this UBC student event funding.

The goal of this pilot phase was to develop a plan for an ongoing community effort, and the funding for leadership stipends was appropriate for this initial phase. Similarly, the budget for the launch event was appropriate. However, had we wanted to initiate other activities or events during this pilot phase, we would not have had the funds to do so.

Regarding funding, there are several things we recommend for the next stage of the project:

- Future project funding should include 3 components:
  (1) Leadership stipends
  (2) Event and activity expenses, which can be used to match other funding sources. These funds will support individual events (such as a skill-building workshop or a networking evening for students to connect with people outside of academia) and on-going activities such as casual meet-ups and monthly social get-togethers.
  (3) Operational expenses, including funds for promotional materials (outside of specific events) and to support team-building activities such as UBCO/UBCV team retreats.
- Develop a concrete plan for funding, so that we can develop knowledge about the funding opportunities that exist and how we would apply funds to support our activities. Funding can be a focal point for future community projects.
- Cultivate relationships with advisors who will support our fundraising efforts.
- Be aggressive about seeking sponsorship from like-minded organizations.

Team organization and project management

We took some time to get to know one another and to establish the mission, vision, and broad goals for the project. We then established specialized teams to focus on specific activities, including event management, communication, operations, funding, and project documentation, and each team identified its goals and tasks. By structuring our project management approach in this way, we aimed to ensure clarity, accountability, and efficient coordination among team members to successfully carry out our activities.

We used three software platforms to communicate and collaborate effectively: Zoom, Slack, and Google Drive. We had a weekly team meeting with a structured agenda to facilitate communication and we tracked our progress using a shared task list that we regularly reviewed during the weekly meetings. Over time, we identified areas for improvement, including the need for a better system for providing clear direction, delegating tasks, fostering accountability and efficiently coordinating tasks across teams. By setting concrete goals and deadlines, we ensured that progress towards our objectives was measurable and actionable.

Regular communication channels and structured weekly update calls helped keep team members informed and aligned, leading to efficient task execution and progress towards our goals. Over time, we made a greater effort to work together in person in various groups and it was a lot more fun and productive than working only online. We adapted our processes as the project progressed, and overall our efforts were successful in improving team dynamics and efficiency.

There are several things we recommend for the next stage to improve project management processes:

- Implement clearer task delegation and decision-making responsibility from the outset. The flat organizational structure we used during this pilot project has benefits, but to be most effective, an explicit task coordination and delegation process is needed.
- Develop a better understanding early on about each person's time constraints and preferred time management strategies, in order to coordinate activities and ensure balanced workload distribution.
- Regularly evaluate and adjust the project management approach to ensure it remains aligned with the evolving needs and objectives of the project.
- Identify task management tools that have minimal overhead and are user-friendly for all team members.

4.Communication channels

A primary goal of our project was to create awareness about HIBAR research and our emerging community. To so, it was essential to establish communication channels so that we could broadly engage with graduate students and faculty from all UBC departments who are interested in HIBAR research.

Outreach efforts

We had two separate phases for our outreach efforts. In our first effort between July and October 2023, we advertised our research interests survey via email messages to our personal networks, sharing details through existing university communication channels such as the Graduate Student Society forum page, and by posting physical posters in shared graduate student spaces. Though somewhat limited, this approach resulted in more than 200 survey responses and a similar number of mailing list subscriptions.

In January and February of 2024, we made a second outreach effort, with the intent to circulate an invitation to our launch event as broadly as possible across both campuses. To do so, we used the contact information publicly available on UBC websites to assemble email directories for (1) the Deans and Directors for all UBC Faculties and Schools, (2) the Graduate Program Coordinators for all departments with a PhD program, (3) the Faculty Directors for all Research Clusters, and (4) the leaders of other university groups with similar interests to the HIBAR Research Buddies. We were encouraged to receive many supportive replies from Deans, Coordinators, and Directors, indicating that they would be happy to share our message with graduate students in their unit. This effort resulted in an additional 175 mailing list subscribers and 134 graduate students from a total of 70 different departments registered to attend our launch event.

Our outreach activities were successful in widely reaching graduate students via email broadly across both campuses, as evidenced by the fact that currently 449 students from more than 100 departments (70% from Vancouver and 30% from Okanagan) are considered members of the community. Now that we have established these email communication channels, we can more readily share information about HIBAR Research Buddies activities in the future. We also learned that word of mouth communication among students is very effective, so asking current community members to help with outreach is likely to be helpful. We can supplement online and email outreach with more in-person activities, for example by attending and presenting at various faculty and department events.

Website set-up

Our website is an important communication channel for providing information for current and prospective community members. It also serves as a repository for content and resources that we generate, such as newsletters and videos.

We have set up a preliminary website at https://hibar-b.ubc.ca/. This is a work in progress and we have established the foundation of the website in a way that makes it easy to update as we develop additional resources.

Monthly newsletters

We launched a monthly newsletter as a means of keeping our community members informed and engaged about our events and activities, and to share useful information that is relevant to HIBAR research. We have developed a standard format for the mailings that includes our logo and uses our established brand colours. Each newsletter is introduced with a short profile of one of our student leaders.

We have sent out six monthly newsletters so far to our 370 subscribers using the online mailing platform Cyberimpact, and the mailing statistics indicate that on average about 68% of the recipients open the newsletter message, which is a fairly successful opening rate. However, the statistics indicate that only about 3% of readers click on one of the links within the newsletter, so we would benefit from having more interactive content to keep subscribers engaged.

Social media accounts

We intended to use social media to build awareness of our HIBAR Research Buddies community, and to reach students who may not be inclined to subscribe to our newsletter. We decided to set up accounts on LinkedIn and X, because they are generally considered appropriate for an educational and professional audience. We also established a Youtube channel so that we can share webinar and event videos.

Since October, we have used our LinkedIn and X accounts to share event details, suggested readings, example HIBAR projects, and related student funding opportunities. On our Youtube channel, we posted an introductory video by the leadership team, the recording of our introductory webinar, and a presentation by Dr. David Hart from our launch event. To increase followers and to expand our reach, we tagged other UBC accounts, including Graduate and Postdoctoral Studies (G&PS) and the Graduate Student Society.

We have not invested a lot of time or effort in encouraging followers on our accounts, and as a result we have not attracted many followers on X and LinkedIn. Some of our posts on Twitter were retweeted by G&PS but we did not have much luck from the other accounts we tagged. We opted not to tag the accounts of our own specific UBC departments since we did not want to give our followers the incorrect impression that only those departments are part of our community. Some of our posts have a moderate number of views, but those views were not often converted to followers.

Social media may still be a very effective communication channel for the HIBAR Research Buddies community, but if we want to have an active social media presence, it will be necessary to develop a strategy for regular posting and to have a dedicated team member to focus on implementing it.

5. Events and Activities

We organized a number of events and activities during this first pilot phase of the project.

Research interests survey

We designed and shared a survey to learn more about the research interests of UBC graduate students, and particularly their interest in HIBAR research projects. The research ethics board approved survey was administered through Qualtrics and received responses from a variety of graduate programs across UBC. We promoted the survey through various channels, such as departmental mailing lists, posters, and UBC forums.

We received 135 responses from UBC Vancouver and 84 responses from UBC Okanagan. Because our initial communication channels were largely focused on our existing network of advisors, we were not able to share the survey with students broadly across campus. Nevertheless, we received responses from students in 22 different departments (many of them in the Faculty of Science) at UBC Vancouver and 8 difference departments at UBC Okanagan. Not surprisingly, we noted a clear self-selection bias in the responses, as 100% of respondents indicated their interest in learning more about HIBAR projects and about the HIBAR Research Buddies community.

The survey successfully achieved these goals:

- We gauged students' awareness of HIBAR projects at UBC. The survey helped us understand how familiar graduate students were with the concept of HIBAR projects. This information was valuable in tailoring our outreach efforts and communication strategies.
- We identified students interested in or already conducting HIBAR projects. We were interested in connecting with both students who were curious about HIBAR and those who were already engaged in this type of research.
- We identified students who were interested in subscribing to our mailing list. The survey provided a way to collect contact information from graduate students interested in being part of this community. In total, we gathered 219 contacts for our mailing list.

The survey provided some valuable insights and enabled us to connect with about 200 interested students. Future surveys of this type would benefit from either ensuring that it reaches as many graduate students across campus, or perhaps a more focused approach targeting a specific audience, with clear and measurable objectives.

Interviews with graduate students

We conducted a series of interviews with graduate students experienced in HIBAR, whom we recruited from our survey respondents and personal networks, to gain insights into their research projects, understand their experiences with HIBAR projects, and gather input on their participation and support within the HIBAR Research Buddies community.

Our purpose was to identify students interested in joining the community and contributing to its activities. Additionally, we aimed to explore firsthand experiences in conducting HIBAR research, understand both strengths and challenges, and gather input on how students envision their participation and support within the community. Initially, our goal was to select students through the interview process to invite them as speakers at our webinar. However, we continued interviewing students after the webinar to further enrich our understanding.

The interviews were successful in identifying students interested in joining the HIBAR-B community and contributing to its activities. Additionally, they provided valuable insights into the experiences, strengths, and challenges of conducting HIBAR research. Furthermore, the interviews gathered input on how students envision their participation and support within the HIBAR-B community. Importantly, throughout the process, ethical guidelines were adhered to, ensuring participant comfort and data security. Based on a total of 17 individual interviews, we obtained valuable insights and actionable feedback about how we can best provide value to our growing community. Many of the insights are provided in Appendix B.

In future interviews, we may consider:

- Streamlining the scheduling process to ensure efficiency and convenience for participants.
- Providing more clarity for interviewees on expectations and potential benefits of participating in the interviews, such as opportunities for presentation and networking.
- Incorporating interviewee feedback mechanisms to continuously improve the interview process and address any participant concerns.
- Expanding recruitment efforts to reach a more diverse pool of participants and ensure representation across various disciplines and backgrounds.
- Implementing a more robust process for documenting interview findings. This includes implementing a clear procedure for analyzing interview data and ensuring consistent note-taking immediately after interviews (consider using an AI assistant). Additionally, scheduling regular team meetings to share and discuss interview findings among the team.

Introductory webinar

In November 2023, we hosted a 1-hour webinar to introduce students to the wide and varied nature of HIBAR research projects at UBC. The webinar features 7 graduate student speakers, each of whom was current working on a HIBAR project at part of their thesis work, and who we had identified through our interview process. Each speaker briefly described their project and shared their personal insights and lessons learned. These brief presentations were followed by a moderated question and answer session. A recording of the webinar is posted on our Youtube channel.

The webinar speakers were excellent, and they shared interesting and valuable insights. We had a low attendance rate for the live broadcast, largely because we advertised the event less than a week in advance, but the webinar recording has lasting value well beyond the value of the live broadcast. We carefully documented the lessons learned so that we can organize and host successful future webinars.

Buddy coffees

To establish personal connections among community members, we organized a series of "Buddy coffees". In each session, typically one member of the student leadership team met with 2 graduate students who had not previously met for an informal chat at a local coffee shop. We sent an open sign-up request to our mailing list, we organized 7 sessions with interested students, and the feedback from participants was very positive.

Buddy coffees are a valuable and fun way to connect with students authentically, to learn about their interests and needs, and to facilitate interdepartmental discussions. This initial version of the program was time-intensive to organize, and it would be worthwhile to invest in developing an efficient communication and scheduling process so that a Buddy coffee program can be maintained on an ongoing basis.

Launch event

In March 2024, we organized a 2-hour Community Launch Event, held simultaneously at both UBC Vancouver and UBC Okanagan, with a Zoom video link connecting the two events. The goal of the event was to raise awareness of HIBAR research projects that are underway at UBC, specifically highlighting the vital role that graduate students can take in these projects, and to enable students to meet one another in a fun and relaxed environment. We set up physical displays, secured sponsorships, and designed inclusive and engaging activities that encouraged interdisciplinary collaboration among participants.

Our event drew 17 participants at UBC Okanagan and 56 participants at UBC Vancouver, from more than 40 different departments. (We had received 36 registrations from UBCO and 98 from UBCV, so about half of the registrants attended the event.)

The event began with an invited virtual presentation by Dr. David Hart from the University of Maine, exploring how building trusted relationships can accelerate the impact of our research. Dr. Hart's presentation was followed by several interactive activities to raise awareness of HIBAR research and to build connections among the participants.

Overall, the event was deemed successful based on the enthusiastic response from attendees and the achievement of its intended objectives. The level of engagement, positive feedback, and continued interest from participants indicate that we effectively met the needs and expectations of our target audience. The event successfully promoted interdisciplinary collaboration, showcased HIBAR research initiatives, and fostered a sense of community among graduate students.

Reflecting on the experience, there are several areas where adjustments could be made to enhance future events. Primarily, we would allocate more time for preparation to ensure smoother logistics and mitigate any unforeseen challenges. Additionally, we would explore opportunities to extend networking opportunities and foster more organic interactions among participants. Initiating the event with a dedicated networking session could help establish a relaxed and welcoming atmosphere from the outset.

We are grateful to the Walter H. Gage Memorial Fund, the Tuum Est Student Initiative Fund, and the HIBAR Research Alliance for providing the funding that covered the directs costs of the event.

6. A framework for future community activities

Based on the many insights offered by community members, we have designed a framework for future community activities, focusing on four areas:

1: Building awareness of the vital role that students can play as part of a HIBAR project team

Because HIBAR projects are not common, those who are currently participating in a HIBAR project may not even know they exist. For these reasons, focused and intentional activities are necessary to build awareness of HIBAR projects among students and faculty.

2: Building support throughout the university for more students to participate in HIBAR projects

Our discussions have highlighted the importance of advocacy activities to build a supportive academic environment for students to participate in HIBAR projects. This includes building faculty support and engagement, and advocating for flexible funding opportunities and more flexible timelines for students.

3: Building connections to opportunities that enable more students to participate in HIBAR projects

We learned about the importance of supporting and facilitating opportunities for students to connect. This includes providing avenues for connecting with existing HIBAR projects, faculty interested in HIBAR projects, non-academic partnership opportunities, HIBAR research related funding resources, peer support networks, networking events, and career opportunities.

4. Building capacity by sharing opportunities to develop skills needed in HIBAR projects

We learned about the importance of developing and sharing existing resources for development of skills needed for HIBAR projects, particularly related to building trusted relationships and effective communication in cross-sectoral partnerships.

We have developed a preliminary plan for activities in these four areas, as described in Appendix C.

7. Next steps for HIBAR Research Buddies

We have successfully achieved the overall goals of this pilot project, which were to determine if there is interest among graduate students to belong to a cross-campus, student-led community of this type, and to demonstrate that it is feasible to establish it through a series of focused, student-led activities.

We have built a strong foundation upon which the community can grow, and we are now focusing on these two priorities over the next few months:

1) Sharing the results and lessons learned from our project, with individuals at UBC and also at other universities that may be interested in launching a similar effort on their campus; and
2) Securing funding to sustain and expand community activities at UBC during the next two years.

We are excited to participate in the continued growth of the HIBAR Research Buddies community, both at UBC and beyond. We welcome you to contact us via e-mail at hibar.b@ubc.ca.

APPENDIX A: Leadership team – Brief biographies

Sandra Cuadros

Sandra Cuadros is a Peruvian researcher, currently studying a PhD at the University of British Columbia Okanagan. Sandra's background is in ornithology and working on the conservation of endangered species. Simultaneously, she has been involved in Equity, Diversity, and Inclusion initiatives in science, as well as outreach and environmental education. Her PhD project focuses on understanding the ecological drivers of social behavior in birds, and the implications on movement and energetics of it. The idea is to use this information to ultimately reduce human-wildlife conflict.

Hannah-Ruth Engelbrecht

Hannah-Ruth Engelbrecht is a fifth year PhD candidate in the Genome Science and Technology program at the University of British Columbia Vancouver in the Kobor lab. Her PhD focus is the characterisation and identification of epigenetic biomarkers of healthy aging in global Blue Zone longevity hotspots and normative populations in Canada. Hannah-Ruth moved to Vancouver from South Africa after working as a medical scientist in the National Health Laboratory Service, with a MSc in psychiatric genetics from the University of Cape Town under her belt. At UBC, she made the switch to "dry lab" work, switching out pipettes for R code, and she has been enjoying what the Canadian landscape has to offer.

Segun Fatudimu

Segun Fatudimu is a doctoral candidate at the University of British Columbia Okanagan and founder of Impact Toolbox, which incubates new social enterprises. With over nine years of experience in social impact and youth development, he has consulted for organizations like the American Red Cross and the City of Chicago. Segun also reviews for the Canadian Journal for International Development and serves on boards like NITEO Africa Society. He holds degrees from the University of Ibadan and the University of Chicago, where he studied International Development and Policy. He is recognized internationally as a Mandela Washington Fellow and an Obama Foundation Scholar, among several other prestigious awards and fellowships.

Rúbia Guerra

Rúbia Guerra is a second-year PhD student in Computer Science at the University British Columbia Vancouver. Her research, which builds upon her MSc work in the same field, explores the intersection of affective haptics. She aims to develop advancements in human-computer interaction through touch interfaces. Previously, during her undergraduate studies in Systems Engineering at UFMG (Brazil), Rúbia investigated sign language to text translation, using deep learning and computer vision methods. Now, her focus lies in haptics research, working alongside Prof. Karon MacLean to develop computational models that understand emotions conveyed through touch. Rúbia is passionate about fostering a sense of community and connection with others who share her interest in the power of collaborative research.

Nils Henning

Nils Henning holds a Bachelor's degree in "Sociology, Politics, and Economics" and he is currently pursuing a Master's in "Power, Conflict, and Ideas," at the University of British Columbia Okanagan. His research focuses on understanding the ideas and assumptions underlying the Western worldview, investigating the extent to which neoliberal capitalism tends to have life-affirming and life-denying characteristics. Beyond academia, he co-founded two organizations: NePals e.V. in 2016 and NIDISI gGmbH in 2021. Their work has provided over 30 children access to better education, filtered over 1,000,000 liters of contaminated groundwater, developed a biodegradable sanitary pad made from banana fibers, and built the first paved road using recycled plastic.

Chun-Yin Huang

Chun-Yin Huang, a third-year doctoral candidate in Electrical and Computer Engineering at the University of British Columbia Vancouver, previously earned both a Bachelor's and a Master's degree in Electrical Engineering from National Tsing Hua University. Later, he pursued a Master's degree in Biomedical Engineering at Carnegie Mellon University. His professional background includes roles at THEIA Tech, a startup specializing in naked-eye 3D display technology, as well as positions at Philips NA and Academia Sinica, where he concentrated on developing computer vision algorithms. His current research at UBC centers on creating trustworthy AI for medical applications. Specifically, he focuses on investigating data utility to facilitate federated learning, which is an emerging model in collaboratively training an AI model without directly sharing sensitive local data.

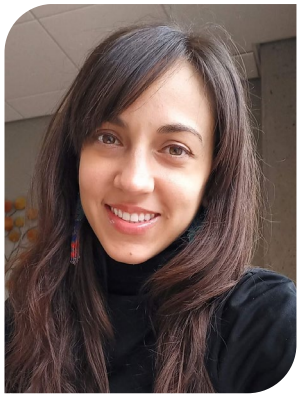
Sharayu Jakhotiya

Sharayu Jakhotiya is a second year PhD candidate in the Department of Forest Resources Management at the University of British Columbia Vancouver. She is studying the governance models of forest dwelling communities living in India's tiger reserves and understanding the role of governments, policies, and markets in shaping these governance models. Sharayu has a background in Engineering and Marketing before deciding to work with communities on conservation initiatives. It wasn't by chance that she began her work in this field but a conscious effort and desire to work on conservation initiatives. She has previously worked with various communities in Western and Southern India and collaborated with government officials.

Jakob Marshall

Jakob Marshall is a PhD student in Medical Physics at the University of British Columbia Vancouver. He conducts research at the BC Cancer Agency in Vancouver, collaborating closely with clinical Medical Physicists and Radiation Oncologists. Jakob's research focuses on developing novel techniques for optimizing radiation therapy treatment plans to precisely target moving tumors with radiation. His work involves determining the optimal combination of radiation beams to concentrate damage within cancerous tumors while sparing surrounding healthy tissues, even when tumors are in motion due to respiration. Prior to his PhD, Jakob earned his Master's degree in Medical Physics and Bachelor's degree in Physics from UBC Okanagan.

Fernanda Novoa



Fernanda Novoa is a medical doctor and health equity scholar with extensive experience in community-based healthcare practice and research. She completed her medical degree in Mexico and a Master's in interdisciplinary studies focusing on health equity, community engagement and social change at the University of British Columbia Okanagan. Grounded in community-engaged methodologies, her research delves into systemic health inequities during the COVID-19 pandemic, particularly among Mexican migrant agricultural workers in the Okanagan. As Research Coordinator at UBCO's Equity Science Lab, she develops resources and builds capacity for researchers, decision-makers, and community partners to translate research findings into actionable outcomes centred in equity principles. As an equity advocate, she serves as the chair of the Migrant Workers' Centre Advocacy Committee, actively championing improvements in policies to enhance the well-being of migrants in Canada.

Michele Mossman

Michele Mossman is the Manager for the HIBAR Research Alliance and Advisor for the HIBAR Research Buddies pilot project. She is a Research Associate in the Department of Physics and Astronomy at the University of British Columbia Vancouver, and since 2002 she has been the Manager for the UBC Sustainability Solutions Applied Physics Laboratory. From 1998-2006, she was the primary researcher and a co-inventor of the CLEAR electronic paper technology, first as a PhD student and later as a Postdoctoral Fellow. She was a co-founder and consultant to a UBC spin-off company that was incorporated to further develop and commercialize the technology. She received a PhD in Physics from UBC, and an MBA from UBC's Sauder School of Business.

Advisory group

Thank you to the following individuals at UBC who offered advice and guidance throughout the project:

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APPENDIX B: Insights from students

These are some of the insights we've learned from students who have participated in HIBAR projects:

- It takes time to build a relationship based on trust and mutual respect.
- It is energizing to work on a project that directly addresses a problem you deeply care about.
- It is challenging to balance multiple priorities in a HIBAR project.
- HIBAR projects require different activities than typical academic-focused projects.
- Making connections outside of traditional academic boundaries can lead to fruitful partnerships.
- Knowledge exchange is a 2-way street: academic and societal partners learn from one another.
- HIBAR projects require a lot of communication among partners, so they often take longer. Extended timelines may be needed.
- Thoughtful and respectful communication is required.
- HIBAR projects can be accelerated by leveraging strong existing partnerships.
- Partners bring valuable expertise and perspectives that are not accessible elsewhere.
- HIBAR projects often need more flexible funding sources.
- Students working on HIBAR projects spend time in two different environments: academia and the "real world".
- It is valuable to start early in building partnerships – before the research question is formulated.
- Our perspective as academics regarding societal needs and opportunities is limited, so knowledge from experts outside the university is essential.
- Building a common vision for the project takes time.

This valuable advice was shared by students, for others who are just getting started in a HIBAR project:

- Be adaptable. The direction of the project should change in response to new information.
- Recognize that the project isn't "yours".
- Collaborate with external partners from the beginning, to shape the research questions.
- Approach all conversations with partners with an open mind.
- Recognize that partners often have much greater knowledge and expertise than you do.
- Whenever possible, build on pre-existing relationships.
- Don't be afraid to say you don't know something.
- Learn to cultivate interests in unexpected areas. This often ends up playing a crucial role in the development of a project.
- Meet with project partners as frequently as is reasonable possible, recognizing that this is likely just one of many projects on their plate.
- If your partners invite to you participate in an event or activity, do so if you can. Strong relationships are built through shared experiences.
- Establish clear expectations regarding how partners will work together.

APPENDIX C: Preliminary community activity plan

We have developed a preliminary plan for future community activities, focusing on four areas: building awareness, support, connections, and capacity. Some of these activities can be implemented quickly and others will take a few years of effort to fully develop.

FOCUS AREA 1: Building awareness
of the vital role that students can play as part of a HIBAR project team

Desired Outcomes	Potential HIBAR-B Activities
Broad awareness of the value of Highly Integrative Basic And Responsive (HIBAR) projects	• Share articles and case studies that provide evidence of the value of cross-sectoral co-leadership. • Share examples of HIBAR projects via the HIBAR-B website, webinars, and departmental newsletters. • Organize a cross-campus poster session for students, faculty, and partners to share their HIBAR project results.
Broad acceptance of the vital role of graduate students in HIBAR projects	• Share inspiring examples of how graduate students have participated in HIBAR projects
An understanding of how everyone benefits from expanding HIBAR research opportunities for students ➔ Students themselves ➔ Faculty ➔ UBC ➔ External partners ➔ Society	• Share benefits to students, including: - Energizing projects - Expanded skill sets - Diverse career opportunities - Connections outside academia • Share benefits to faculty, including: - Opportunity to explore new research areas - Energizing projects - Connections outside academia • Share benefits to UBC, including: - Sense of belonging among students - Transformative education options - Impactful research - Societal engagement • Share benefits to partners, including: - Energizing projects - Access to potential new employees - Impactful research - Connections within academia • Share benefits to society, including: - Focused effort on important problems - Skilled graduates - Impactful research results

FOCUS AREA 2: Building support
throughout the university for more students to participate in HIBAR projects

Desired Outcomes	Potential HIBAR-B Activities
Broad awareness of the challenges faced by students in HIBAR projects	• Identify barriers and opportunities through interviews with students, faculty, and administrators • Host a series of webinars to explore opportunities and encourage discussion • Initiate dialogue with faculty and administrators through small-group discussions
Engaged and supportive faculty and administrators	• Identify actions that faculty and administrators can take through collaborative discussions • Identify supportive individuals and work with them to advocate for changes, such as more flexible timelines and funding sources
Mutually beneficial collaborations with like-minded groups at UBC	• Identify opportunities to collaborate with the Institute for Engaged Research (ICER) • Identify opportunities to collaborate with the Public Scholars Initiative • Identify opportunities to collaborate with the Public Humanities Hub
Access to compatible funding opportunities	• Initiate dialogue with research funders to explore opportunities to expand funding options • Identify and share opportunities to apply for funding to support HIBAR projects

FOCUS AREA 3: Building connections

to opportunities that enable more students to participate in HIBAR projects

Desired Outcomes	Potential HIBAR-B Activities
Connections among graduate students	• Organize fun activities (social events, in-person get-togethers) • Enable an easy way for students to communicate with one another (a Slack channel, Discord group, etc.) • Establish a peer support group for students working on HIBAR projects
Connections between students and faculty members	• Organize HIBAR research relevant activities to engage both interested faculty members and graduate students • Develop a database of HIBAR project opportunities at UBC • Organize a cross-campus poster session for students, faculty, and partners to share their HIBAR project results • Organize thematic networking events focused on a particular societal problem, drawing interested faculty and students from across campus
Connections between students and external partners	• Develop a database of existing research partnerships at UBC • Organize events with external partners focused on specific research themes focused on addressing important problems

FOCUS AREA 4: Building capacity
by sharing opportunities to develop skills needed in HIBAR projects

Desired Outcomes	Potential HIBAR-B Activities
An understanding of the skills needed for HIBAR projects	• Identify specific skills needed for HIBAR projects through interviews with students, faculty, and partners
Increased access to existing skill development opportunities	• Identify and share existing workshops and courses that focus on skills needed for HIBAR projects
New skill development opportunities	• Identify skill development needs that are not currently met by existing workshops and courses • Collaborate with other UBC groups to develop new workshops and courses focused on skills needed for HIBAR projects
Easy access to other useful resources	• Assemble a collection of best practices on how to design and implement a HIBAR project • Collaborate with other UBC groups to develop a handbook of useful information – for students, faculty, and partners

APPENDIX D: Frequently asked questions

What is a HIBAR research project?

Highly Integrative Basic And Responsive (HIBAR) research projects are the type of projects that pursue basic knowledge while addressing urgent societal challenges. HIBAR projects are co-led by collaborative cross-sectoral teams, including both academics and experts working outside of basic research who bring leadership skills and deep understanding of a societal problem. Researchers in all fields, including social sciences, humanities, science, engineering, and medicine, are central to many HIBAR projects.

HIBAR projects are:

- *Highly Integrative* because they deeply integrate different motivations, theories, methods, and participants; and
- *Basic and Responsive* because they embrace the academic character and purpose of basic research while addressing societal challenges.

Why is this category of research projects important?

The inherent synergy within a HIBAR research project accelerates knowledge creation and generates better solutions, making a distinct and valuable contribution to the research landscape.

This synergy is the result of:

- *Shared leadership by people in academia and society, working in an equitable partnership*: The diverse perspectives they bring to the project mean that, together, they make wiser decisions about the direction, participants, and activities within the project – from the start and throughout.
- *Integrated purposes of seeking new knowledge and addressing a problem in society*: Together, these purposes lead project teams, informed by the context of the societal challenge, to draw from a wider set of knowledge and skills, and to combine a wider range of problem-solving methods.

HIBAR research projects have always existed in universities, but they have been less common than the usual forms of basic or applied research. Nevertheless, there are many excellent examples, some of which are highlighted here.

Why was the HIBAR label developed?

Although HIBAR research projects are generally less common at universities than the usual forms of basic or applied research, there are numerous excellent examples of HIBAR projects ranging, for example, from technology innovation to community engagement to policy creation.

This is a time-honored form of research that, until 2017, lacked a name and the label “Highly Integrative Basic And Responsive" was developed to emphasize its integrative and recursive characteristics. The type of partnership within a HIBAR project is often what people describe when they refer to “co-production” and “co-creation”.

What do we mean by co-leadership in a HIBAR project?

Cross-sectoral co-leadership is a key distinguishing characteristic of HIBAR research projects. By "cross-sectoral", we mean partnerships between university researchers and individuals in external organizations, including industry, government, non-profit organizations, civil society, and communities of practice. Importantly, these individuals are knowledgeable of the societal problem that is being addressed by the HIBAR project and they participate in the project as equal partners

What are the distinguishing characteristics of these cross-sectoral partnerships?

- Partners share an overarching goal to both discover new knowledge and address a specific societal problem.
- Partners "co-lead" the research: academics and external partners are together actively involved in all phases of the research activity, including consequential decisions related to the research.

The *shared goals* and *shared decision-making* are essential components of these partnerships, because the diverse perspectives that partners bring to the project mean that, together, they make wiser decisions about the direction, participants, and activities within the project – from the start and throughout. (This type of partnership is often what people describe when they refer to "co-production" and "co-creation".)

How does HIBAR research differ from other forms of societally-impactful research such as use-inspired research, community engaged research, public scholarship, etc.?

There is overlap between HIBAR projects and other forms of research. For example, many community-engaged and public scholarship research projects involve a partnership in which community members, organizations, students, and academics participate as co-researchers, and these would also be described as HIBAR projects.

However, a HIBAR project need not necessarily involve community members and it may not necessarily address issues of social justice or community needs. For example, a project that is co-led by academics and, for example, researchers based in a technology company to solve a vexing technical problem in an innovative way would be considered a HIBAR project, but it is not likely to be considered as a community-engaged project, even if the resulting technology benefited a community.

How do HIBAR research opportunities benefit graduate students?

HIBAR projects provide the opportunity for graduate students to work as part of a team that has diversity in expertise and lived experience, and with non-academic partners on a project that addresses a problem in society. Participating in a HIBAR research project as part of their graduate student training is one means by which graduate students can have a direct and meaningful societal connection through their research. For the many graduate students who do not pursue a career in academia, HIBAR projects offer valuable personal contacts and experiential opportunities that can lead to many different career paths.

This arrangement creates a positive feedback loop: as more HIBAR-experienced students enter the workforce, their familiarity with HIBAR research makes it much more likely that they will co-create and

co-lead more university HIBAR collaborations. These in turn create new HIBAR research opportunities for another generation of students.

What motivated UBC to establish the HIBAR Research Buddies community?

Graduate students increasingly have a strong desire to positively impact society, and they seek meaningful, engaged research opportunities that would allow them to fulfill this desire. Many students, however, are unable to find fulfilling research opportunities, in part because aspects of academic research culture have historically been largely inward-looking. For example, the promotion and tenure system unintentionally motivates faculty members (and by extension their graduate students) to de-emphasize partnering with real-world experts and instead follow a more narrowly-defined research excellence path. This can repel some of the students that universities should most want to attract and retain, since those students are left with a perception that university research is out of touch with the needs of society. This project aims to create a welcoming community for students who feel this way, by reinforcing their sense of belonging within the academic research environment.

Why does HIBAR Research Buddies focus on HIBAR research projects?

Highly Integrative Basic And Responsive (HIBAR) projects aim to discover new knowledge ***and*** address societal problems, ***and*** they do so in deep partnership with problem-solvers outside of academia. These projects have always existed in universities, but they are not common: we estimate roughly 5% of research projects at UBC would be described as truly HIBAR. Students who participate in HIBAR projects gain opportunities for meaningful societal connections through their research and, by highlighting such projects and the important team role played by graduate students, this pilot project will help reinforce the university's commitment to improving the world through research.

Because HIBAR projects are not common, students who are currently participating in a HIBAR project may not know of other examples of such work at UBC, and students who are not currently participating in a HIBAR project may not even know they exist. For these reasons, focused and intentional activities are necessary to build awareness of HIBAR projects and to enable those who are particularly interested in this type of research to connect with and learn from one another.

Who are the members of the HIBAR Research Buddies community?

There are two primary audiences for HIBAR Research Buddies activities:

(1) graduate students at UBC who are participating (or have participated) in HIBAR projects; and

(2) graduate students at UBC who are interested but not yet working on HIBAR projects.

Though community activities are primarily focused on graduate students, HIBAR Research Buddies welcome participation by those at other early career stages, including postdoctoral fellows and undergraduate students. Some activities will involve individuals from all UBC faculties, other universities, and non-academic partners.

What makes the HIBAR Research Buddies community unique?

There are a number of well-established initiatives at UBC that have demonstrated significant interest among graduate students in societally-engaged research, including the Public Scholars Initiative, the Public Humanities Hub, and the Institute for Community Engaged Research. Like these initiatives, this new pilot project is similarly motivated to better align university research with the needs of society, and it also has several unique and complementary characteristics:

- **It is a student-led initiative.** It is a community led by students for students. This student leadership will ensure that the community's focus, support, and activities reflect the unique perspectives and needs of like-minded students.
- **Community activities will be open to all UBC graduate students,** regardless of their research discipline or program (masters and doctoral), and regardless of whether they are currently participating in societally-engaged research.
- **The value of co-leadership of projects by academics and external experts will be a focal point.**

Why are we focusing specifically on co-leadership?

HIBAR projects have two important characteristics: dual motivations (generating new knowledge and tackling a societal problem) and dual leadership (academics and external experts). Through this pilot project, we aim to enable students who are particularly interested in this type of research to connect with and learn from one another. The dual motivations aspect is well-addressed in a wide variety of ways by existing initiatives and programs. The dual leadership aspect is less well addressed among the general graduate student population, and for this reason we aim for this to be a focal point for the activities of this community. (If there is true cross-sectoral co-leadership, the dual aims to discover new knowledge and address a societal problem are almost certainly present within the project.)

What kinds of activities do HIBAR Research Buddies organize?

We focus on activities that will:

- Connect like-minded students with each other and reinforce their sense of belonging within the academic environment;
- Showcase impactful HIBAR projects, building awareness of the breadth of this type of research in many disciplines and emphasizing the role of graduate students as key members of these research teams;
- Highlight opportunities for students to participate in activities that will, over time, help to change the academic culture toward more societally-engaged research;
- Highlight that HIBAR projects offer experiential opportunities for students that can lead to many different career paths, within and outside of academia;

- Offer valuable opportunities for students to connect with individuals outside of academia who share their research interests, facilitating potential engagement in research collaborations or networking opportunities;
- Highlight best practices to nurture effective cross-sectoral collaborations as a graduate student; and
- Share learnings and challenges that are typically faced in HIBAR projects.

What is the connection to the HIBAR Research Alliance?

The HIBAR Research Alliance (HRA) is a growing network of research organizations governed by a council of 12 universities, one of which is UBC. The mission of the HRA is to catalyze significant expansion of partnerships between university-based researchers and non-academic participants, working together as equal partners, in order to discover new knowledge and accelerate progress toward solving society's critical problems. The HRA is a distributed network of experienced volunteers, and invites individuals from all areas of the research and innovation ecosystem to participate in its activities aimed at catalyzing cultural and structural change within universities so they can be more active partners in the larger innovation ecosystem.

The HIBAR Research Buddies community is separate from but well aligned with ongoing activities of the HRA. The HRA effort originally began at UBC, and UBC continues to take a leading role as one of the HRA's Governing Member Universities. UBC Professor Lorne Whitehead is currently the Director of the HRA. In addition to her role as a Laboratory Manager at UBC, Michele Mossman is the Manager of the HRA and she facilitates the sharing of any relevant information between the HIBAR Research Buddies and the HRA.