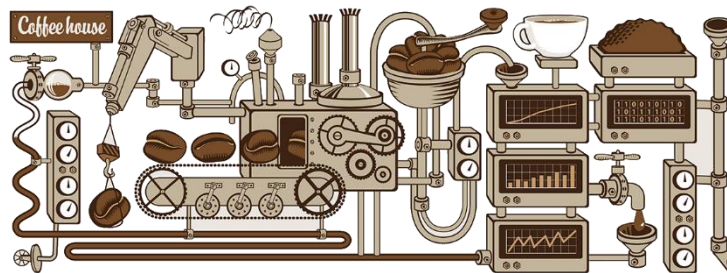


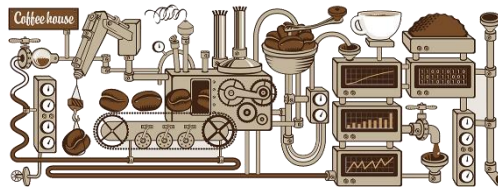
HOW TO BREW THE PERFECT RESEARCH PROJECT



Office of Research
Office of Research and Academic Innovation
University College of the North (UCN)



Updated on February 27, 2023



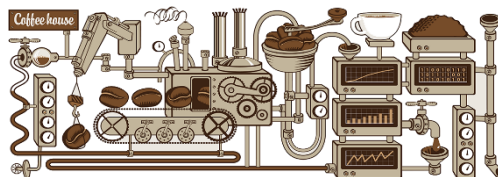
Welcome! This note will explain the intended purpose of this document.

Coming across a new opportunity to apply for funding to support one's research is always exciting and energizing, and the temptation can be to dive in and begin crafting the application right away.

In the midst of this excitement, it is helpful to remember that a research proposal is only as strong as the foundation it is built upon. A proposal that has not carefully considered the wider research environment in which a study is to be conducted could end up being weaker than it might be, or perhaps even carry with it some risks that could have been mitigated at an earlier stage.

This resource is intended to help the researcher consider that broader research environment, and to craft the strong 'backbone' that will support their project from the initial concept all the way to sharing and disseminating the final results.

HOW TO BREW THE PERFECT RESEARCH PROJECT



#1: <i>IT'S ALL ABOUT THE BEANS</i>	3
Part A: Evaluating the Research Problem	3
Part B: Thinking about Risk	5
Part C: Run the Project by your Dean or Supervisor	7
#2: <i>HOW MUCH COFFEE? HOW MUCH WATER?</i>	9
Part A: Research Design	9
Part B: Research Methodologies	11
#3: <i>HOW MUCH WILL A GOOD CUP COST?</i>	13
Part A: Creating a Research Project Budget	13
Part B: Funding Your Project	15
#4: <i>START WITH A CLEAN POT</i>	17
Part A: Key Info	17
Part B: Resources & Procedures	19
Part C: Signing on the Dotted Line ... Yes or No?	21
#5: <i>BREWING TIMES WILL VARY, DEPENDING ON THE GRIND</i>	23
Some suggestions for creating a project timeline	23
#6: <i>SHARE IT WITH YOUR FRIENDS/THE WORLD</i>	25
Ideas for planning a knowledge mobilization strategy	25



HOW TO BREW THE PERFECT RESEARCH PROJECT

#1: IT'S ALL ABOUT THE BEANS.

*Make sure your research question is really solid,
and that you run the project by your dean or supervisor.*

PART A: EVALUATING THE RESEARCH PROBLEM

Write a clear statement of a problem for research (also referred to as research question).

Review your written statement and ask yourself the following questions:

- Is the problem stated in one complete, grammatically-correct sentence?
- Is it clear how the area of study will be limited or focused?
- Is it clear that you have an open mind about results that the research effort might yield?

Based on your answers to the questions above, edit your written statement.

Look at your edited statement and reflect on the following questions:

- Does the answer to this problem have the potential for providing important and useful answers and information?
- Will the result be more than a simple exercise in gathering information, answering a yes/no question, or making a simple comparison?
- Is the problem focused enough to be accomplished with a reasonable expenditure of time, money and effort?

Looking at the statement once more, consider this: Is the problem as stated *really* what you want to investigate?

Share your work with another person. Ask them to consider the bulleted questions above, and then to give you their comments. If this person is unfamiliar with your discipline, their feedback could be particularly helpful as they will be coming to your statement with fresh eyes, and may spot something that is not clear to them. With this feedback in mind, edit and rewrite your problem statement one more time.



PART B: THINKING ABOUT RISK.

Do you plan to involve people as participants in your project? If so, what kinds of risks or challenges do you think could arise?

Do you plan to involve animals in your research? What kinds of risks or challenges do you think could arise?

Will you need to use chemicals, radioactive substances, biohazards or firearms in your research? If so, what kinds of safety measures do you think you will need to take?

Do you plan to hire a student research assistant? If so, what kinds of risks or challenges might there be to hiring and supervising a student?

Can you think of any potential risks to UCN property, or financial risks to UCN, from conducting your research?

List any other things that might pose a risk or hinder successful completion of your research project. How might you pre-empt or mitigate those risks/challenges?



PART C: RUN THE PROJECT BY YOUR DEAN OR SUPERVISOR.

Try to see your project through their eyes. Share your risk assessment with them. What else do you think might be top-of-mind for your dean or supervisor as it relates to your research?

Deans/Supervisors are generally well-connected with people outside the institution — perhaps government, industry, community agencies. What kinds of things do you think your dean or supervisor might be able to help with, or troubleshoot for you relative to your project?



HOW TO BREW THE PERFECT RESEARCH PROJECT

#2: HOW MUCH COFFEE? HOW MUCH WATER?

Choosing the appropriate research design and methods makes all the difference.

PART A: RESEARCH DESIGN. What is your general strategy for investigating the research problem/question?

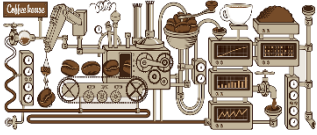
State your research problem/question developed in the first section:

Now state your hypothesis(es), i.e. an educated conjecture or reasonable guess, about what you think you may discover:

Describe how you plan to do a literature search to find out what others have previously written about your topic

Describe how you plan to collect data that potentially relate to your project:

Describe how you plan to analyze and interpret the data you collect:



PART B: RESEARCH METHODOLOGIES

Methodologies for collecting and analyzing data are many, multi-faceted and continually evolving. A commonly-accepted starting point is to consider whether your research question might best be investigated by either **qualitative** or **quantitative** methods, or an approach that combines the two (mixed methods). The table below offers just one entry point into investigating which approach(es) might be most suitable for your project. Connect with others in your discipline to learn about methodologies and approaches commonly used in your field of research. You will find that every minute invested in developing strong research design and methodology will more than pay for itself down the road.

QUESTION	QUANTITATIVE	QUALITATIVE
What is the purpose of the research?	<ul style="list-style-type: none"> To explain and predict To confirm and validate To test theory 	<ul style="list-style-type: none"> To describe and explain To explore and interpret To build theory
What is the nature of the research process?	<ul style="list-style-type: none"> Focused Known variables Established guidelines Predetermined methods Somewhat context-free Detached view 	<ul style="list-style-type: none"> Holistic Unknown variables Flexible guidelines Emergent methods Context-bound Personal view
What is the data like, and how are they collected?	<ul style="list-style-type: none"> Numeric data Representative, large sample Standardized instruments 	<ul style="list-style-type: none"> Textual and/or image-based data Informative, small sample Loosely structured or non-standardized observations and interviews
How are data analyzed to determine their meaning?	<ul style="list-style-type: none"> Statistical analysis Stress on objectivity Deductive reasoning 	<ul style="list-style-type: none"> Search for themes or categories Acknowledgement that analysis is subjective and potentially biased Inductive reasoning
How are the findings communicated?	<ul style="list-style-type: none"> Numbers Statistics, aggregated data Formal voice, scientific style 	<ul style="list-style-type: none"> Words Narratives, individual quotes Personal voice, literary style



HOW TO BREW THE PERFECT RESEARCH PROJECT

#3: HOW MUCH WILL A GOOD CUP COST?

Cost everything out and make a budget, and look into who might help fund it — or think about crowdfunding it yourself!

PART A: CREATING A RESEARCH PROJECT BUDGET. Below are some expenditures typically incurred in conducting research, and how to cost them out to create a realistic budget:

- **Travel (e.g. to network; carry out research activity; present at conferences; etc.).** For airfare, hotel, airport shuttle, vehicle rental, etc. check the pertinent websites for the most current rates, and print/scan the webpages for your records. For private accommodation, meal allowances, private vehicle mileage rate and other allowable travel expenses, consult the most current Expense Account Rates document from Finance.
- **Computer equipment; tablet; audio or video-recording equipment; etc.**
 - a. Check first with both UCN libraries in Thompson and The Pas to see if it is available for loan. If you're in The Pas and what you need is in Thompson they may be able to ship it to you, and vice-versa.
 - b. If not, and you are looking to purchase: For local vendors, cost things out at the establishment yourself, and/or obtain an email or hard-copy quote. Always keep copies for your records. For other vendors, consult the pertinent websites or have a sales rep email you a quote, and print/scan the info for your records.
- **Purchase or rentals of other equipment or supplies (e.g. lab equipment; field equipment; meeting space, tents; etc.).** See 2b above.
- **Hiring a student research assistant.** Researchers wishing to hire UCN students as research or administrative assistants must follow UCN HR procedures, and demonstrate they have funding from a grant or other source to support that hiring. The process is initiated by generating a Staffing Authorization Request (SAR). **Do not predetermine the rate based on what other institutions pay, or other external factors.** We use UCN's Collective Agreement to determine their rate, based on the work/tasks the students will be doing. Consult Janis Fjermestad, HR Administrative Officer, ifjermestad@ucn.ca on procedures.
- **Honoraria for Elders.** You may wish to ask an Elder to do traditional teachings, or to consult with them, as part of your research. UCN provides honoraria to Elders in respect for their wisdom and their time. Check with Tri-Council Administrative Officer re-process and rates.
- **Hospitality costs (e.g. to host a focus group; meals/refreshments for a workshop; etc.).** See 2b above.
- **Printing (e.g. handout materials; poster presentations; etc.).** Options:
 - a. UCN's in-house printing facilities. Check with UCN's Librarians to get an idea of what your print job is likely to cost. Charge it to your faculty/departmental budget code.
 - b. For an external vendor, see 2b above.
- **Hiring an external provider for services (e.g. transcription; catering; workshop facilitation).**
 - a. Company or business: The work must be non-bargaining unit work (i.e. not covered under the Collective Agreement). Fill out a Purchase Requisition (PR), and get it signed by the budget holder (dean or supervisor).
 - b. Individual: The work must be non-bargaining unit work (i.e. not under the Collective Agreement). Fill out an Independent Service Provider (ISP) form, and get it signed by the budget holder per 8a above. Can you think of other costs that might be unique to your project?



HOW TO BREW THE PERFECT RESEARCH PROJECT

#4: START WITH A CLEAN POT

Research integrity, ethics, knowing about conflict of interest and commitment, professionalism — these are all part of the research gig.

PART A: KEY INFO

UCN signed the *Agreement on the Administration of Agency Grants and Awards by Research Institutions* with the Natural Sciences and Engineering Research Council of Canada (NSERC) and Social Sciences and Humanities Research Council of Canada (SSHRC) in November 2012. **The Agreement is a key determinant in shaping the overall research environment at UCN.** As with teaching, UCN expects all members of its community to adhere to a high level of integrity in conducting research. List everything that comes to mind when you think of **research integrity** and **responsible conduct of research**:

Another big part of the *Agreement* is ensuring that research involving human participants, and animals, is conducted to the highest ethical and humane standards. What do you think would be important when involving people in your study?

What would be important to consider for studies involving animals? This would include teaching exercises, as well as for research or testing:

Write down what comes to mind for you when you think of “being professional” or “professionalism” in research:

RESEARCH INVOLVING ABORIGINAL PEOPLES

Many additional considerations must come into play if you are thinking about involving Aboriginal peoples in your research study. Research involving Aboriginal peoples in Canada has been defined and carried out primarily by researchers who are not Aboriginal. Generally, the approaches have neither benefitted Aboriginal peoples nor reflected Aboriginal world views and priorities. Research results did not necessarily reflect the Aboriginal perspective as the communities were not engaged in designing the studies. In a significant number of instances, Aboriginal peoples have been harmed, sometimes profoundly, from participating in research studies.

In the four points that follow below, write down some initial thoughts on how you might approach this:

1. Take the time to learn community norms and traditions.

2. Respect community knowledge and contributions.

3. Build trust through reciprocity and “giving back.”

4. Communicate, collaborate, and tailor research to community needs.

OWNERSHIP, CONTROL, ACCESS AND POSSESSION (OCAP)

The First Nations Principles of OCAP are a set of standards that establish how First Nations data should be collected, protected, used, or shared. OCAP asserts that First Nations have control over data collection processes in their communities, and that they own and control how this data can be used.

Canada’s Metis and Inuit communities also have similar standards relating to research involving their peoples.

Links to resources on this topic are listed on the last page of this workbook. Knowing and incorporating these types of principles is a key part of conducting research in a responsible and ethical way.



PART B: RESOURCES AND PROCEDURES

Knowing and abiding by the policies below is a critical first step toward lifelong learning in these complex and vital areas of research—and of conducting yourself professionally as a researcher.

IMPORTANT: These policies apply in all instances, regardless of whether or not your research has been funded, or by whom. Consult them as soon as you start thinking about your research design and methodology, and refer back to them often as you move through your project:

UCN Policy AC-04-02 Integrity in Research and Scholarly Activity:

<https://ucn.ca/research/>

UCN Policy AC-04-03 Conflict of Interest in Research and Scholarly Activity:

<https://ucn.ca/research/>

Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2):

https://ethics.gc.ca/eng/policy-politique_tcps2-eptc2_2022.html

Chapter 9 of TCPS 2 is specific to research involving First Nations, Metis and Inuit peoples:

https://ethics.gc.ca/eng/tcps2-eptc2_2022_chapter9-chapitre9.html

UCN Policy and Procedures Governing Ethical Conduct of Research Involving Humans:

<https://ucn.ca/research/>

UCN Policy AN-01-01 Use of Animals in Teaching, Research and Testing:

<https://ucn.ca/research/>

FOR RESEARCH INVOLVING HUMAN PARTICIPANTS—*this includes course-based research:*

You will need to complete an ethics review package, consisting of the UCN Ethics Application form plus the Letter of Information/Consent, and submit it to UCN's Research Ethics Board (REB) for review. No research will be permitted to proceed without REB approval. Consult **UCN Policy and Procedures Governing Ethical Conduct of Research Involving Humans** for full procedural details. **Allow at least 3 weeks for review.** You can also contact me with any questions. Note that all researchers planning to involve human participants must complete the TCPS 2 online tutorial, and provide a copy of their certificate of completion with each application submitted.

FOR TEACHING, RESEARCH OR TESTING INVOLVING ANIMALS:

If you are planning to involve animals in a new course or introduce animal use into an existing course, the Curriculum and Standards Committee must first approve this. Ask your dean what will be required. Following Curriculum & Standards Committee approval, you will need to complete an animal use protocol, consisting of an application form and additional schedules as required particular to the activity(ies) you intend to conduct, then submit these to UCN's Animal Care Committee for review. **Allow at least 6 weeks for review.** No teaching, research or testing will be permitted to proceed without the Committee's approval. For more information, please contact me.

Note that all faculty/researchers planning to involve animals in teaching, research or testing also must complete University of Manitoba online animal user training before any use of animals takes place, and provide a copy of their certificate of completion to UCN's research office.



PART C. SIGNING ON THE DOTTED LINE ... YES OR NO?

For research projects where UCN space, staff time (including yours) or resources are being committed, it may happen at the beginning and/or at various stages as your project progresses that a third party asks you to sign some kind of agreement or other document. These can take a variety of forms and have various names, depending on their purpose. Some examples are Research Agreement, Research Contract, Non-Disclosure Agreement, Confidentiality Agreement, Material Transfer Agreement, Technical Services Agreement and Intellectual Property Agreement.

These may be legally enforceable agreements containing contractual terms and obligations with respect to the performance of research and research-related activities or the use of materials. **Individual faculty or non-teaching staff members do not have authority to contractually bind UCN by signing such agreements in the absence of express authorization to do so.** UCN policy, Signature and Financial Commitment, states: "All agreements binding UCN to provide academic services require the signature of the Vice-President, Academic & Research." This includes all research-related agreements where the faculty member/researcher is using the UCN name, space, time, resources, etc. to carry out the work (F1-01-01).

The primary reason for this has to do with legal liability. The Social Sciences and Humanities Research Council (SSHRC), for example, awards grants to institutions, not to an individual researcher, to administer even where it is the researcher that developed the grant application. Through accepting the grant, the institution acknowledges it is taking on the corresponding financial and other obligations associated with administering the grant. The institution, represented by a duly authorized officer, must therefore read and sign off on the grant agreement. At UCN it is the Vice-President, Academic & Research who does this on behalf of the institution. Institutions are legally established entities and have liability insurance should something go wrong.

Faculty members are legal persons and do have the capacity to enter into agreements that are binding on them. There may be situations where a faculty member is pursuing their private research agenda, in which case they could be the appropriate party to contractual agreements with third parties for the provision of goods or services either to or by such third parties. An example is where a faculty member is conducting their own research out of a self-directed research account. In such cases it is incumbent on the faculty member to explicitly indicate that they are not acting as a UCN employee. However, where the faculty member is acting in their capacity as an employee of UCN then the UCN requirement will apply.

The Vice-President, Academic & Research must therefore sign off on all research-related agreements provided by a third party where UCN staff time, space or resources are being committed. At the same time, it is important and necessary that you as the researcher acknowledge the particulars of your role and confirm via your signature the tasks you will be carrying out in the project.



HOW TO BREW THE PERFECT RESEARCH PROJECT

#5: BREWING TIMES WILL VARY, DEPENDING ON THE GRIND.

Creating a timeline with milestones is helpful for staying on track.

Here is an example of a simple timeline you can create in Excel. Seeing where and when different tasks overlap can be helpful when thinking about how best to allocate time or resources.

Project Task	2010						2011											
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phase 1: Pre-Pilot Planning and Preparation (July - Dec, 2010)																		
Site visit to Children's Hospital																		
Obtain ethics approval																		
Resource assessment																		
Nursing Education																		
Workshop																		
Team Leader																		
Workshop																		
Physician Recruitment/Training																		

Project_Timeline_With_Milestones_1 [Read-Only] - Excel

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do... Ascher, Avery Share

Clipboard Font Alignment Number Styles Cells Editing

A1

YOUR PROJECT

TIMELINE

PROJECT START

MILESTONE 1

MILESTONE 2

MILESTONE 3

MILESTONE 4

MILESTONE 5

MILESTONE 6

MILESTONE 7

MILESTONE 8

MILESTONE 9

MILESTONE 10

PROJECT END

15 Aug 15 Sep 15 Oct 15 Nov 15 Dec 15 Jan 15 Feb 15 Mar 15 Apr 15 May 15 Jun

PROJECT DETAILS

DATE	MILESTONE	POSITION
2017-08-15	Project Start	25
2017-09-14	Milestone 1	10
2017-09-14	Milestone 2	-10

Project Timeline Tips:

The role of the Position values in the Project Details table is to prevent the Milestone labels from overlapping each other on the timeline. Use positive numbers to position labels above the timeline and negative

Project Timeline

Ready Search Windows 1:30 PM 2017-08-15



HOW TO BREW THE PERFECT RESEARCH PROJECT

#6: *SHARE IT WITH FRIENDS / THE WORLD*

Conversation, blog, infographic, conference presentation, podcast, journal article, video — imagine the possibilities!

WHAT IS KNOWLEDGE MOBILIZATION (KMb)?

SSHRC defines knowledge mobilization as: “an umbrella term encompassing a wide range of activities relating to the production and use of research results, including knowledge synthesis, dissemination, transfer, exchange, and co-production by researchers and knowledge users.” In other words, getting the word out!

Note the phrase “co-production by researchers and knowledge users” in the SSHRC definition above. When partnering with other organizations in a project, a plan for knowledge mobilization needs to be collaboratively determined and documented **at the very beginning** of the project. This is particularly important when working with Indigenous communities to meet OCAP (Ownership, Control, Access, Possession) principles.

Who stands to benefit from your research?

Who do you think would need to know about your research? Which audiences would it be important to communicate results of your project to?

Pick your top 3 and write them in the left-hand column of the table on the next page.





AUDIENCE	DO YOU WANT TO: INFORM? PERSUADE? REQUEST ACTION?	KMb TOOL(S)

Next, for each audience:

- a) Identify your purpose(s) for communicating with them in the middle column.
- b) Choose one or more media/tools from the list below. When choosing, think about each audience's typical information environment: how do they typically receive information, and what media do they typically use to push information out? What would they be comfortable with and receptive to?

Write your choices in the right-hand column of the table.

book	oral histories	opinion piece for a newspaper, magazine
refereed journal article	websites, blogs	conferences and other events
data sharing through online repositories	infographics	public service announcements
social media	exhibits	policy paper or briefing
podcast	festivals	reports
dance, performance, visual arts, plays, films, videos	media coverage	knowledge syntheses and workshops

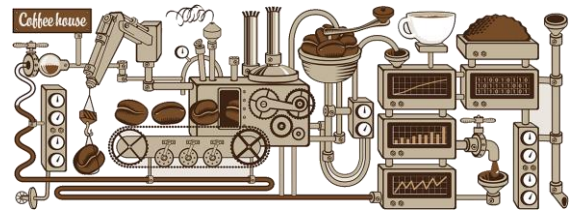
Finally, consider the most opportune timing for each of your choices. As you did for your project as a whole, you may want to put together a timeline for your knowledge mobilization activities.

HOW TO BREW THE PERFECT RESEARCH PROJECT: HERE'S ONE LAST REFILL TO GET YOU ON YOUR WAY



#1: IT'S ALL ABOUT THE BEANS.
Make sure your research question is really solid,
and that you run the project by your dean or supervisor.

#2: HOW MUCH COFFEE? HOW MUCH WATER?
Choosing the appropriate research design and methods
makes all the difference.



#3: HOW MUCH WILL A GOOD CUP COST?

Cost everything out and make a budget, and look into who might help
fund it — or think about crowdfunding it yourself!

#4: START WITH A CLEAN POT

Research integrity, ethics, knowing about conflict of interest
and commitment, professionalism — these are all part of the research gig.



#5: BREWING TIMES WILL VARY, DEPENDING ON THE GRIND.

Creating a timeline with milestones is helpful for staying on track.

#6: SHARE IT WITH FRIENDS / THE WORLD

Conversation, blog, infographic, conference presentation, podcast,
journal article, video — imagine the possibilities!



ACKNOWLEDGEMENTS / RESOURCES

Presentation concept adapted from “How to Brew the Perfect Cup of Coffee” infographic by Reychele Ann Mendoza/ CANVA. <https://www.canva.com/templates/search/infographics/>

Images from Shutterstock www.shutterstock.com UCN has a Shutterstock license for all staff to use in sourcing images for print and electronic use. Contact **Grant Nemeth**, Media Relations Technician gnemeth@ucn.ca.

Certain content herein has been adapted/reproduced from ‘Practical Research: Planning and Design” Ninth Edition, by Paul D. Leedy and Jeanne Ellis Ormrod. Copies are available at The Pas Campus Library (1) and UCN-Norway House Public Library (2).

PMLINKS.COM <http://pmlinks.com/project-information/templates/>

Cynthia Yeh, Assistant Director of the CIHR Team in Maternal-Infant Care Research Centre based at Mount Sinai Hospital in Toronto

Agreement on the Administration of Agency Grants and Awards by Research Institutions Go to http://www.science.gc.ca/eic/site/063.nsf/eng/h_56B87BE5.html?OpenDocument

SSHRC Guidelines for Effective Mobilization https://www.sshrc-crsh.gc.ca/about-au_sujet/policies-politiques/index-eng.aspx

OCAP (Ownership, Control, Access, Possession) Principles <https://fnigc.ca/ocap.html>