What is Research?
Should I be doing Research?
How do I do Research?

In this first phase of the Aurora Research Institute and Hotiì Ts'eeda's research funding workshop series, ResearchCA$H, we will broadly answer four big questions about **Research:**

- ✓ **What is it?**
- ✓ **Should you be doing it?**
- ✓ **How do you do it?**
- ✓ **How do you do it … in a good way?**

What is Research?

> ***"Research is defined as the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings"***
>
> - Government of the Northwest Territories, Knowledge Agenda: Action Plan 2019 - 2024

Generally speaking, research is done for one of two reasons:

1. To find **solutions to known problems, or to help us make better decisions when facing a problem** (known as applied research).

Examples:

- Is solar energy a feasible option to meet the power demands of the town of Inuvik?
- Is there an unsafe concertation of arsenic is present in garden produce grown around the Giant Mine?
- Is the Government of the Northwest Territories "drop the pop" campaign successful?

2. To **add to our collective knowledge** about a subject, by helping to **understand the world** around us. This can include why things or processes work the way they do (known as pure research).

   Examples:

   - What causes the Northern Lights?
   - How do plants adapt to growing in extreme cold?
   - Are there any other planets in the solar system?

> ***"More than ever we require research and knowledge to understand ourselves and our environment, to describe and solve increasingly complex problems and to improve the quality of our day-to-day lives. Knowledge is also critical to our ability to innovate and prosper."***
>
> - Government of the Northwest Territories, Knowledge Agenda: Action Plan 2019 - 2024

Should I be doing Research?

Before spending lots of time and resources working on a funding proposal, you need to find out if the research you want to do is **new** (hasn't been done before) and **needed** (a research priority for stakeholders).

Ask yourself: Has this research already been done before? What is new/innovative about my idea? Do a search to find out what similar research projects have already occurred.

Resources:

- Google Scholar https://scholar.google.ca/
- Aurora Research Institute NWT Research Database https://data.nwtresearch.com/
- Hotıì ts'eeda NWT Health Research Database https://nwtspor.ca/projects

Ask Yourself: Do other people besides me care about this? Is this important for Northwest Territories people or environment?

- First and foremost, **you** should be excited by your research idea! Second to that, your proposal will get a lot more support if your research is trying to fill in an existing knowledge gap, or if it tries to respond to priorities identified by stakeholders.
- Designing your research project to answer or contribute to the priority areas of local organizations is a good step towards building a relationship, developing support for your research, and strengthening your research funding application.

Resources:

- GNWT Health and Social Services Research Agenda https://nwtresearch.com/sites/default/files/health_and_social_services_research_agenda.pdf
- Hotii ts'eeda Research Priorities https://nwtspor.ca/resources/research-priorities
- GNWT Knowledge Agenda: Northern Research for Northern Priorities (2017) https://www.ntassembly.ca/sites/assembly/files/td_406-182.pdf
- NWT Water Strategy Research Priorities (2017) https://www.nwtwaterstewardship.ca/sites/water/files/resources/wss_implementation_workshop_summary_of_research_priorities_2017-2018_1.pdf
- Gwich'in Renewable Resources Board Research Priorities 2018 – 2023 http://www.grrb.nt.ca/research.htm
- Parks Canada Research Priorities https://www.pc.gc.ca/apps/rps/RPSResN_E.asp?oBUSINESS_UNIT_ID=100420
- Local community groups, renewable resource councils, hunters and trappers associations, and other organizations will often share their regional research priorities

Historically, research in the Northwest Territories has largely been done by southern researchers and based on southern priorities and interests. The priorities and areas of importance to NWT residents were often over-looked and underrepresented.

> ***"In the past, research undertaken in the NWT has often been driven by the scientific curiosity of southern research institutions and the interests of southern-based academics. This has resulted in some high quality investigations, but it has also meant that many areas of importance to NWT residents were overlooked or under-represented. Research results were often inadequately reported back to the northern communities and, in general, inadequately integrated into policy development at many levels of government. Notably, traditional knowledge-based research has typically been under-represented in all areas of policy development and decision-making."***
>
> - Government of the Northwest Territories Knowledge Agenda: Northern Research for Northern Priorities (2017)

Ask Yourself: Do I have the time for this?

- Where is your career is going?
- Does this research project fit in with your job requirements?
- What is the timeline of your research?
- Do you have a plan for unanticipated setbacks?

Ask Yourself: Do I have the skills and background for this? Do I know someone who does?

- **To be successful, you do not have to know and be able to do everything**!
- Do I know someone who can read my proposal for me?
- Do I need to hire someone to do data analysis?
- Should I budget to hire an Indigenous language translator when doing interviews?
- Do I have a lab that I analyze my samples in? Can I contract an external lab to do it or should I hire someone?
- Do I know how to collect an environmental sample correctly?
- Do I have the expertise to safely get to a field site?
- Should I budget to hire personnel to help with fieldwork?
- If I am successful and get a research grant, how do I manage the money?

Ask Yourself: What else do I need to do to get my research project started?

- All research taking place in the NWT requires a valid research licence; it is recommended to apply for your research license at minimum 3 months before your proposed start date

- Does my research involve humans? It may need to be approved by a research ethics board at a university or college
- What other permits and approvals will I need? Land use permits? Research in a Parks Canada area? Wildlife export permit?
- Getting around the NWT can be challenging, does my project require travel? Should I budget for that?

How do I do Research?

The third guidance document for this module, 'The Federal Research Funding Environment in Canada' and its accompanying video will give you more information about where research money comes from. Module 3 will give you a more comprehensive understanding of developing a research question and methodology. In this section, we briefly discuss the scientific method and how you can apply it to your research idea.

Research starts with **exploration and discovery**. Research ideas can come from anywhere: curiosity, a real-life problem, an unexpected observation, or personal motivation. Once you have a good research question (more about that in module 3) and you have funding for your project (the goal of this workshop series), the next phase of the research process is **testing your ideas**. This involves gathering and interpreting data.

It is important to remember that research does not always go according to plan! Often research designs must be changed, for example if you are not getting good data or a local community group asks for something different. **Community feedback** can, and often does, influence a research question. It can also help shape the desired **benefits and outcomes** of a research project. By solving an everyday problem, a research project may have to ask several new questions in the process.

The diagram below provides a short overview of the 'scientific method', which is critical to your research.

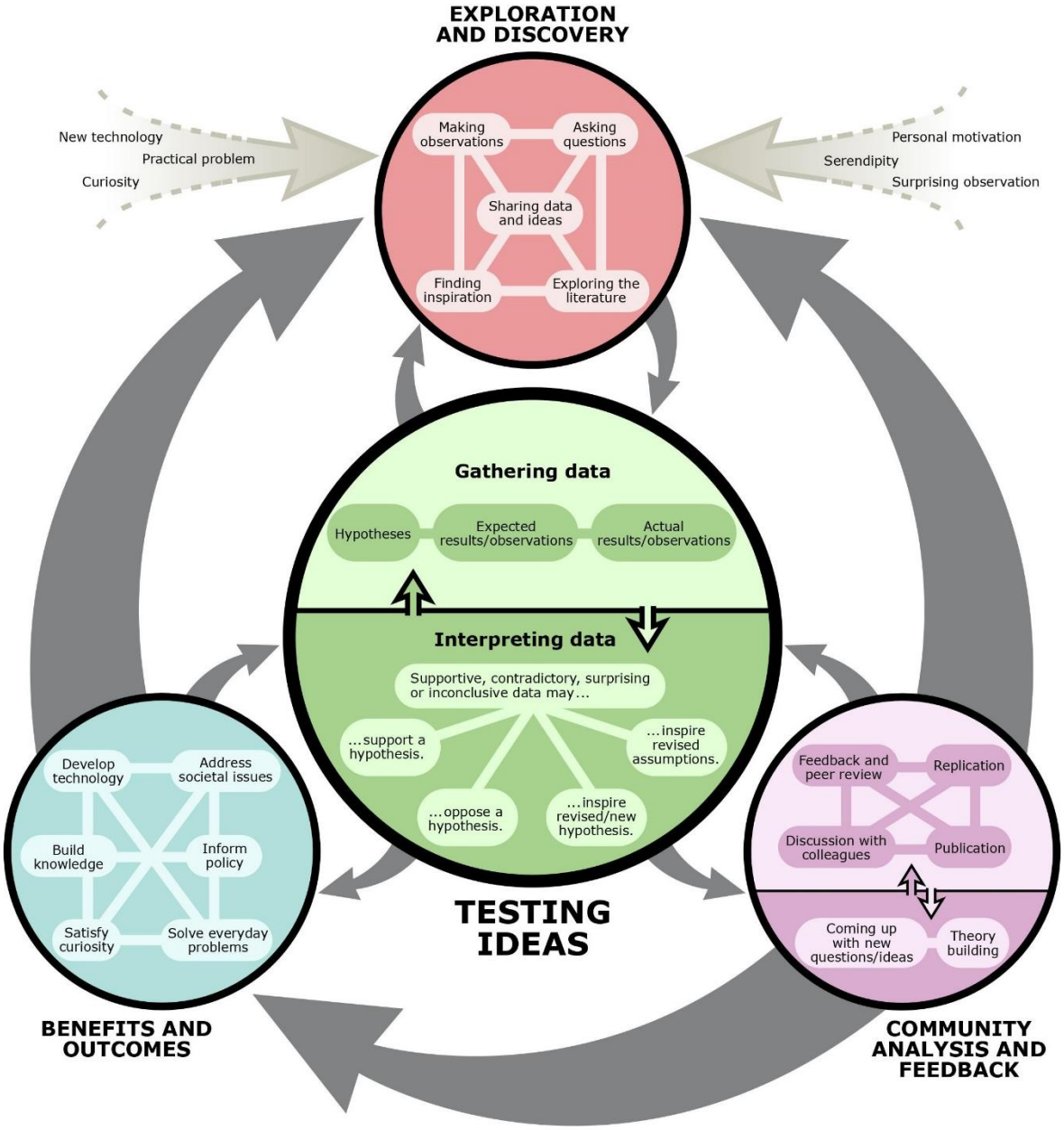

Figure 1: Modified Scientific Method