



# KNOWLEDGE TRANSLATION AND COMMUNICATIONS: WHAT'S THE DIFFERENCE?

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*I humbly acknowledge—with much gratitude—that I live, work and play in the beautiful, ancestral and unceded territories of the x<sup>w</sup>məθk<sup>w</sup>əy'ə̃m (Musqueam), Sk̓wx̓wú7mesh (Squamish), Sel̓íl'wítulh (Tseil-Waututh) Peoples.*



# Overview & Objectives



 Define Communications and Knowledge Translation.

 Learn some basic skills, strategies and approaches to planning and doing both.

 Understand their similarities and differences in practice and theory.





# AUDIENCE POLL

How many of you engage in a form of science communication?



# AUDIENCE POLL

How many of you consider yourselves to practice a form of knowledge translation?

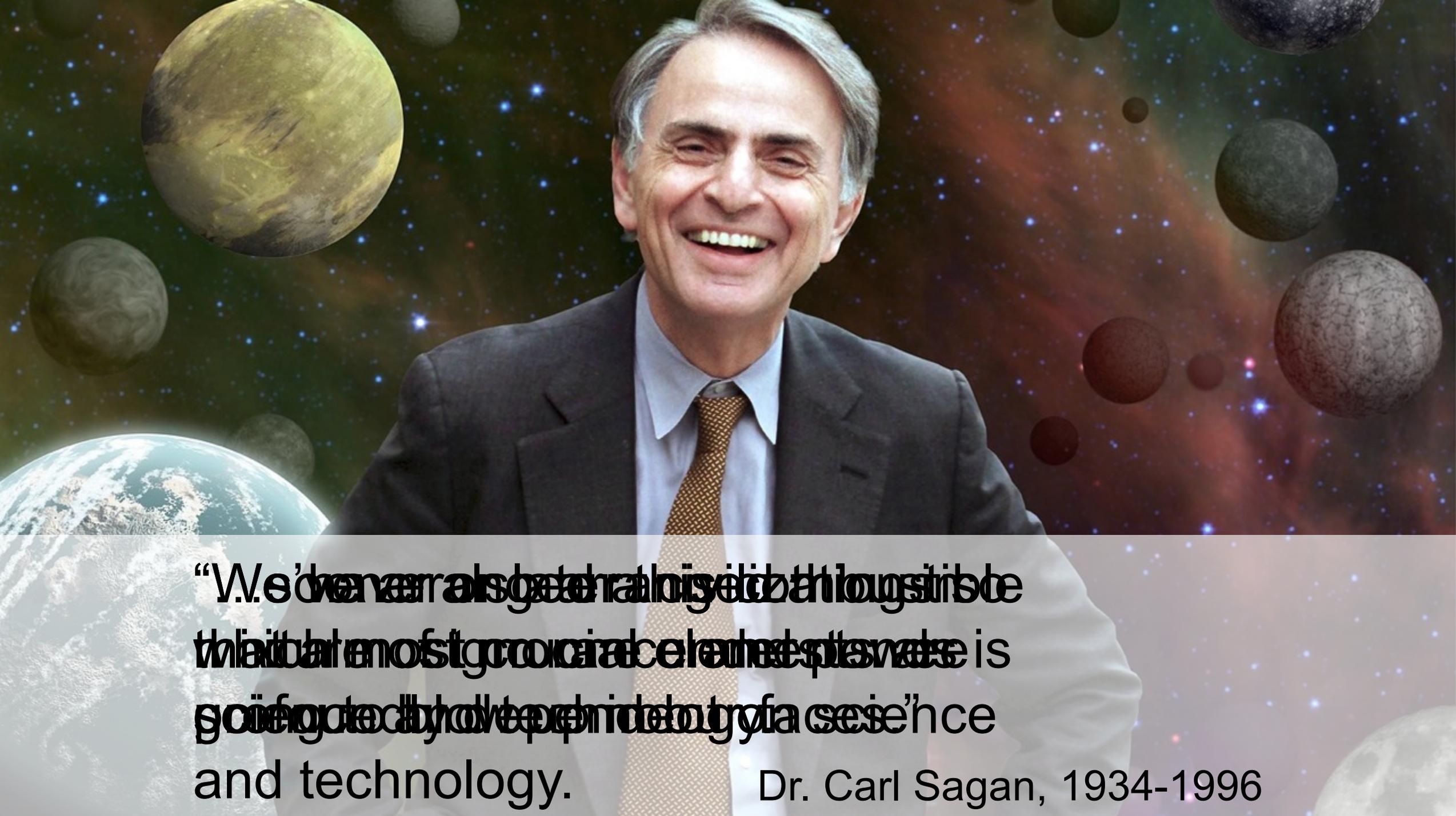


BC  
CAN  
CER

GENOME SC  
RESEAR

Provincial Health Services Authority





“We’ve never also generalised it though to be  
that almost everyone’s response is  
going to be to have a PhD in science  
and technology.”

Dr. Carl Sagan, 1934-1996

- ❖ Greater than 99% consensus on human caused climate change in the peer-reviewed scientific literature from an analysis of 88,125 publications from 2012 to 2020
- ❖ Only 37% of Canadians currently believe there is "conclusive evidence" that the average temperature of the Earth has been getting warmer over the past few decades
- ❖ Only 27% of U.S. adults believe that "almost all" scientists agree that climate change is due to human activity

*Krishna Ramanujan. More than 99% of studies agree: Humans caused climate change. (19 Oct. 2021) Cornell Chronicle.*

*David Coletto. What do Canadians think about climate change and climate action? (28 Oct. 2021). Abacus Data*

# COVID-19

The New York Times

## Burning Cell Towers, Out of Baseless Fear They Spread the Virus

A conspiracy theory linking the spread of the coronavirus to 5G wireless technology has spurred more than 100 incidents this month, British officials said.



The Washington Post

## Horse owners can't find ivermectin as Americans flock to unproven coronavirus cure

Bryan Pietsch · 11 hrs ago

Like 1 Comment | 🗨️ 11

Equine ivermectin comes in small tubes and syringes and helps eliminate "many types of worms," often for less than \$10. And lately, it's been hard to find.



Forbes

## Pfizer-BioNTech And Moderna mRNA Vaccines Are Not Gene Therapies

Joshua Cohen Contributor @

Healthcare

I write about prescription drug value, market access, healthcare systems, and ethics of distribution of healthcare resources

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Listen to article 5 minutes



A researcher holds a COVID-19 mRNA vaccine. (Photo by Chaiwat Subprasom/SOPA Images/LightRocket via ... [+] SOPA IMAGES/LIGHTROCKET VIA GETTY IMAGES

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**“It is inappropriate for scientists  
to let misinformation go  
unremarked.”**

**nature**

# Pseudoscience and COVID-19 – we’ve had enough already



The scientific community must take up cudgels in the battle against bunk.

Timothy Caulfield 

“We need physicists, microbiologists, immunologists, gastroenterologists and all scientists from relevant disciplines to provide simple and shareable content explaining why this hijacking of real research is inaccurate and scientifically dishonest...

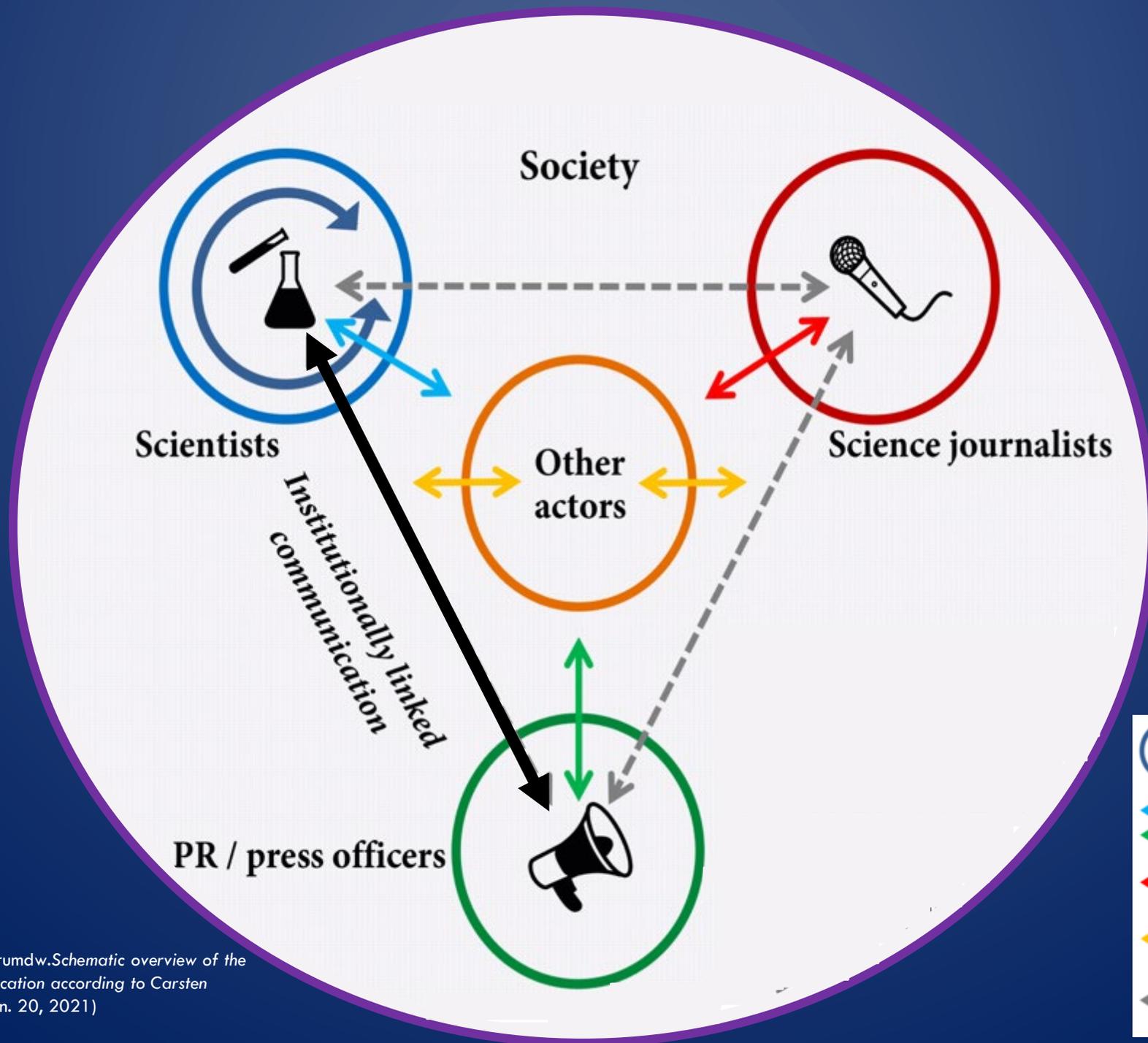
“Disinformation expert Claire Wardle at Harvard University in Cambridge, Massachusetts, has said, ‘**The best way to fight misinformation is to swamp the landscape with accurate information that is easy to digest, engaging and easy to share on mobile devices.**’

**So, let’s get swamping.’”**

Timothy Caulfield. Pseudoscience and COVID-19—we’ve had enough already. (27 April 2020). *Nature World View*.

# AUDIENCE QUESTION

What are some of the reasons that might prevent scientists from freely or regularly communicating their research or about their expertise?



-  Internal science communication
-  Institutionally linked external science communication
-  Institutionally linked external science communication
-  Science journalism
-  External science communication by other actors
-  Bilateral interaktion

# SCIENCE COMMUNICATION

"The use of appropriate skills, media, activities, and dialogue to produce one or more of the following personal responses to science: Awareness, Enjoyment, Interest, Opinion-forming, and Understanding"

Burns, T. W., O'Connor, D. J., and Stockmayer, S. M. (2003). Science communication - a contemporary definition. *Public Understand. Sci.* 12, 183–202. doi: 10.1177/09636625030122004

## **"In-reach"**

Expert to expert communication from similar or different scientific backgrounds

## **"Outreach"**

Direct or indirect communication by science professionals to non-expert audiences

# STRATEGIC COMMUNICATIONS

“The efforts made to inform, influence, or persuade a target audience or audiences in support of identified goals.”

- Corporate function that disseminates and reinforces messages in support of an organization’s strategic plan
- “Strategic”: to communicate the best message, through the right channels, and to measure against organizational and communications-specific goals
- Aligned with a corporation’s mission, vision, values, designed to enhance the strategic positioning and competitiveness of the organization
- The purview of communication or public affairs departments, working in concert with other departments (e.g., marketing) to develop the strategy that best reflects the overall organizational plan.

# COMMS APPROACH TO PLANNING

## Context

- What is new and how does it relate to the bigger picture?
- How does this fit within our vision, mission and values?

## Outcomes

- Why communicate? What are you trying to achieve?

## Messages

- Single Most Important thing (SMIT)
- Supporting messages (2 or 3, at most)
- Bottom Line Actionable Message (BLAM)

## Methods

- Mainstream media (earned content)
- Web, blog, social media, etc. (owned content)
- Advertising, brochures (paid content)
- Formal and informal meetings or presentations

## Support/Stakeholders

- Who do you need to work with to make this happen?
- Internal and external stakeholders and partnerships
- Budget

## Audience

- Who are we talking to and what are their information needs, what do we want them to do with it, what's the best way to reach them, who can help?
- 1°, 2°, 3°

## Measurement

- What has been successful before in the current context, how will we know we are successful this time, which message(s) worked / did not, what methods worked / did not, how effective were our supports, how happy were stakeholders, what's the return on investment?

Adapted from Jonathan Champ. The Five-step COMMS Plan: A Simple, Powerful Approach for Communication Planning That Achieves Outcomes. (4 Sept. 2018). IABC webinar)

# AUDIENCE POLL

Does the institution/organization that you work within employ communications professionals, knowledge translation professionals, both, or neither?

# The “Leaky Research” Pipeline

Questions relevant to users of research?

- Low priority questions addressed
- Important outcomes are not assessed
- >50% of studies are designed without reference to systematic reviews of existing evidence
- Clinicians and patients not involved in setting research agendas

Appropriate research design, conduct, analysis?

- > 50% of studies do not take adequate steps to reduce biases
- >50% of studies fail to take adequate steps to reduce biases, e.g. unconcealed treatment allocation
- Inadequate statistical power
- Inadequate replication of initial observations

Efficient research regulation and management?

- Hyper-regulation of research
- Inefficient delivery of research
- Poor reuse of data
- Do not promote, evaluate research as an integral element of good clinical practice

Accessible, full research reports?

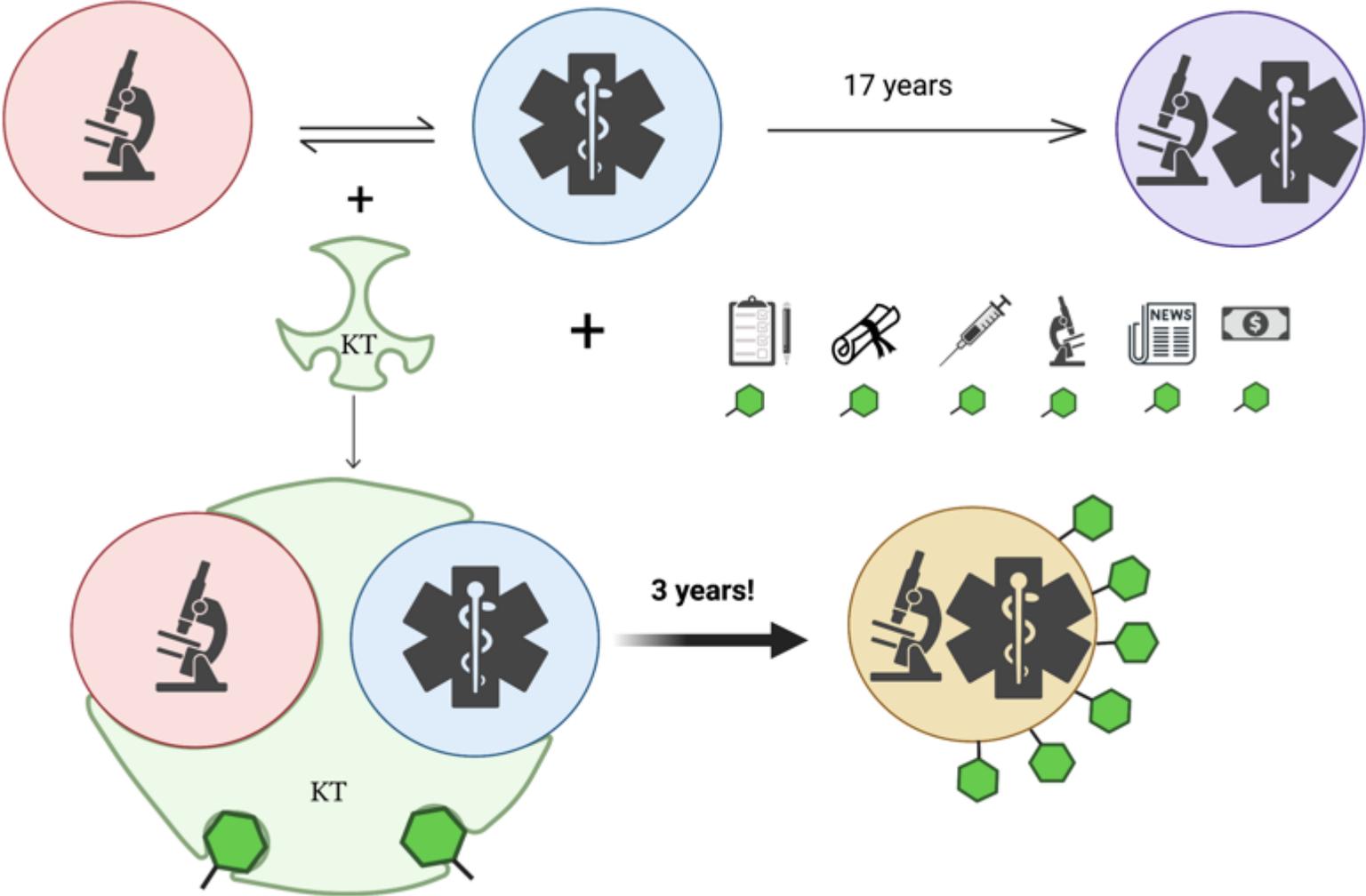
- > 50 % of studies are never published in full
- Biased under-reporting of studies with disappointing results
- Biased reporting of data within studies

Unbiased and useable reports?

- >30% of trial interventions are not sufficiently well described
- >50% of planned study outcomes are not reported
- Most new research not interpreted in the context of systematic assessment of other relevant evidence

Research waste

# Knowledge Translation as a “Catalyst”

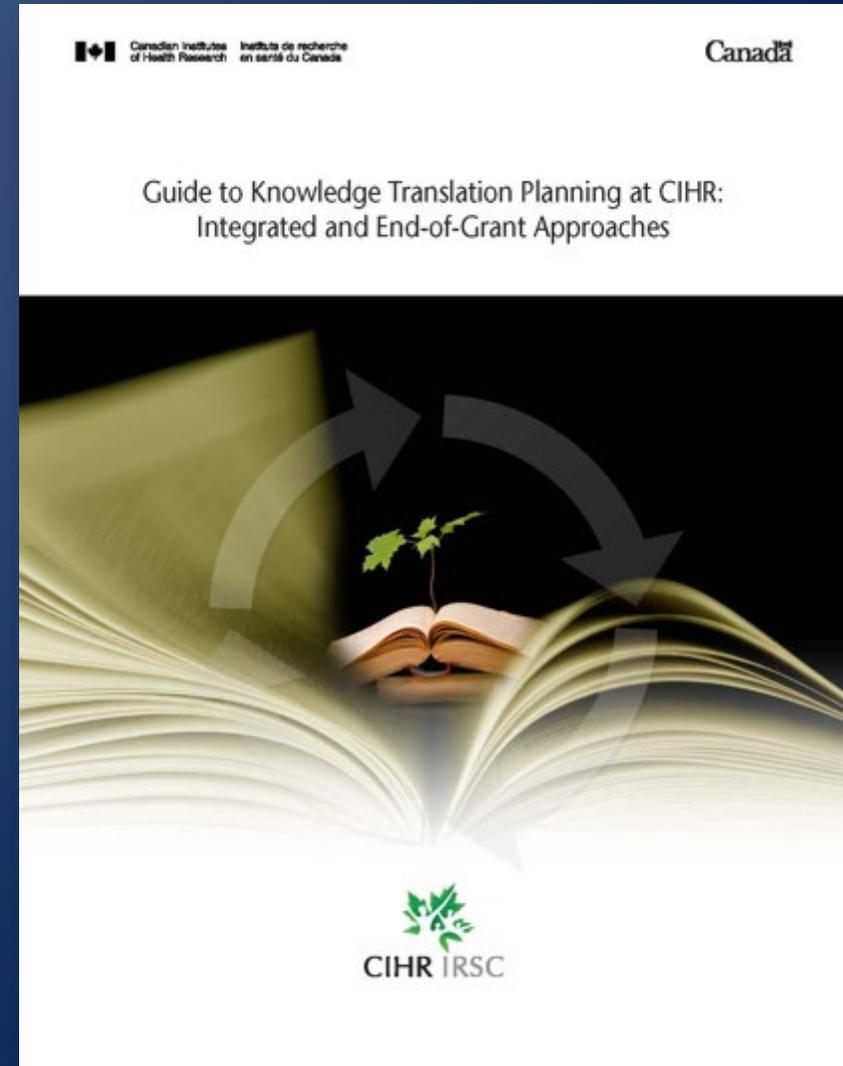


Information source: Balas E, Boren S. Managing Clinical Knowledge for Health Care Improvement. In: van Bommel JH, McCray AT, eds. Yearbook of Medical Informatics. Stuttgart: Schattauer-Verlagsgesellschaft mbH, 2000:65–70

“Why are Implementation Teams Important?” <http://implementation.fpg.unc.edu/book/export/html/193>

# Knowledge Translation

“Knowledge Translation is defined as a dynamic and iterative process that includes **synthesis**, **dissemination**, **exchange** and ethically-sound **application** of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system.

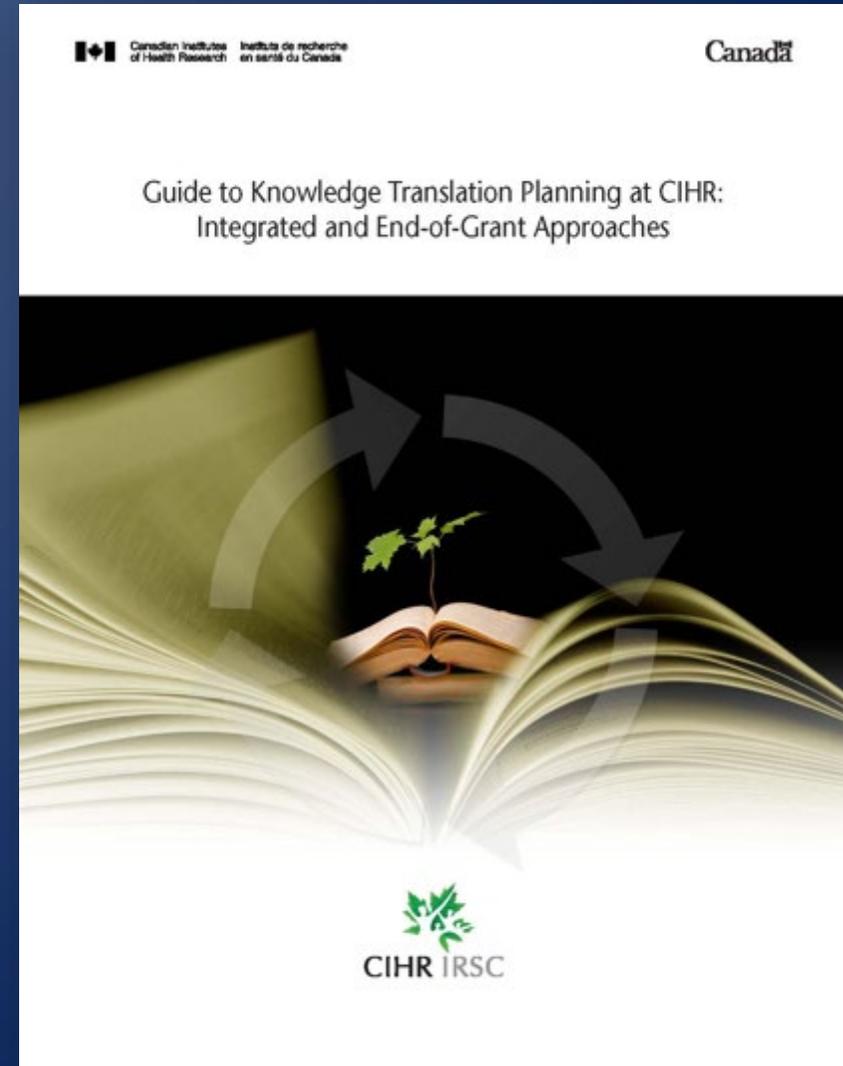


Source: Canadian Institutes of Health Research (CIHR).  
[www.cihr-irsc.gc.ca/e/29418.html](http://www.cihr-irsc.gc.ca/e/29418.html)

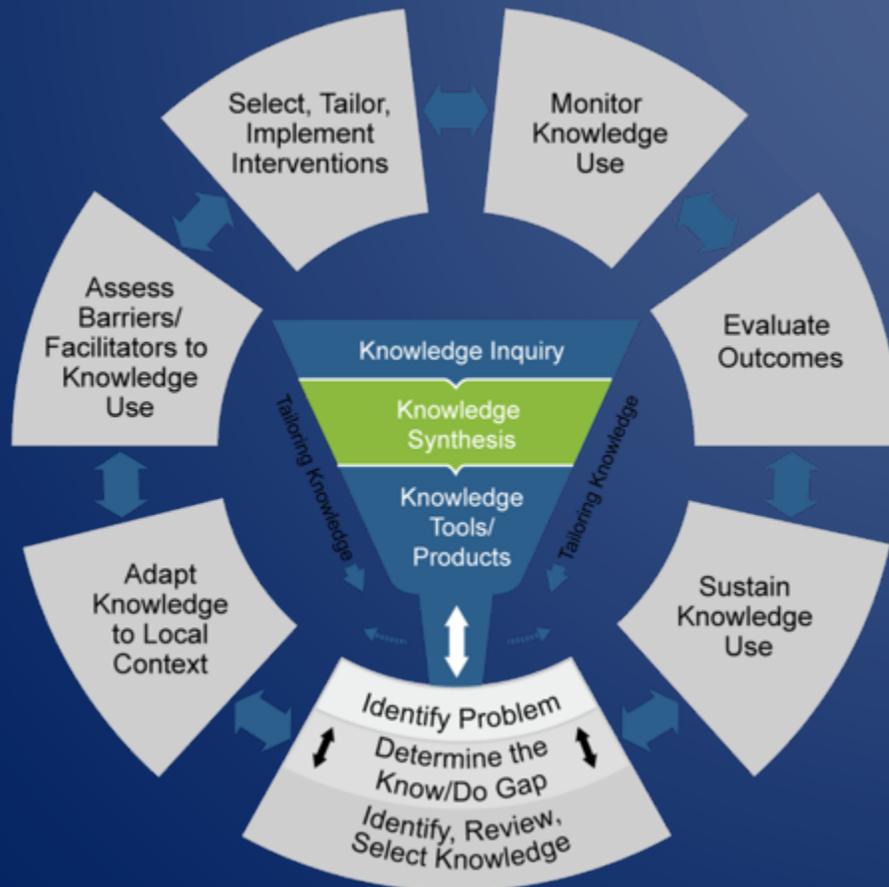
# Knowledge Translation

“This process takes place within a complex **system of interactions between researchers and knowledge users** which may vary in intensity, complexity and level of engagement depending on the nature of the research and the findings as well as the needs of the particular knowledge user.”

— *Canadian Institutes of Health Research (CIHR)*



# Knowledge to Action Framework



**First generation knowledge generated from primary studies**

Examples: single peer-reviewed publication

**Second generation knowledge includes synthesis of knowledge**

Example: systematic reviews, meta-analyses

**Third generation knowledge includes tools and products**

Examples: decision aids, clinical guides, policy briefs, plain language summaries

# Integrated Knowledge Translation

Involves Knowledge User during all research stages and KT activities—from knowledge inquiry and synthesis to dissemination or implementation—to help ensure that knowledge produced is relevant to them.



Inform	Consult	Inform	Collaborate	Empower
Provide with information	Obtain feedback	Work with to develop alternatives	Partner in each aspect of decision making	Decision making authority

Adapted from the International Association of Public Participation (IAP2).  
<http://iap2canada.ca/page-1020549>

# Knowledge Translation Planning Template<sup>©</sup>



**INSTRUCTIONS:** This template was designed to assist with the development of Knowledge Translation (KT) plans for research or non-research projects. It is universally applicable to health and other disciplines. Begin with box (1) and work through to box (13) to address the essential components of the KT planning process. Two e-learning modules are available for additional support: <https://bit.ly/2rh0LZo>

## (1) Project Partners



**Who could benefit from this evidence?**

- Researchers
- Practitioners/service providers
- Public
- Media
- Patients/consumers
- Decision makers
- Policy makers/government
- Private sector/industry
- Research funders
- Volunteer health sector/NGO
- Other:

▶ \_\_\_\_\_

## (2) Partner Engagement



**When will partner or knowledge user (KU) engagement happen?**

### Integrated KT

- From idea formulation straight through
- After idea formulation & straight through

### End of Grant

- At point of dissemination & project end
- Beyond the project

**Note:** Not all partners will be engaged to the same extent or at the same point in time. Some will be hired for specific activities.

## (3) Partner Roles



**What will partner(s) or KUs bring to the project? How will they assist with developing, implementing or evaluating the KT plan?**

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**Note:** Capture their specific roles in letters of support to funders, if requested.

## (4) KT Expertise



**Do you require KT expertise and how will this be accessed?**

- Scientist(s) with KT expertise
- Consultant with KT expertise
- Knowledge broker/specialist
- KT supports within the organization(s)
- KT supports within partner organization(s)
- KT supports hired for specific task(s)

**Note:** If your KT involves *implementation* for practice or behaviour change, include an implementation specialist or scientist.

# KT Planning Template

## 5. Knowledge Users

- Who could benefit from this evidence?

## 6. Main Messages

- SMIT, BLAM, Supporting messages (2 or 3, at most)

## 7. KT Goals

- For each KU: awareness, aid decision making, inform research, facilitate policy change, behavior change

## 8. KT Strategies

- Dependent on goals
- Role based, educational, technological, arts based, commercialization, technology transfer

## 9. KT Process

- When will it occur? Integrated or End of Grant?

## 10. KT Evaluation

- How will you know your goals have been achieved?

## 11. Resources

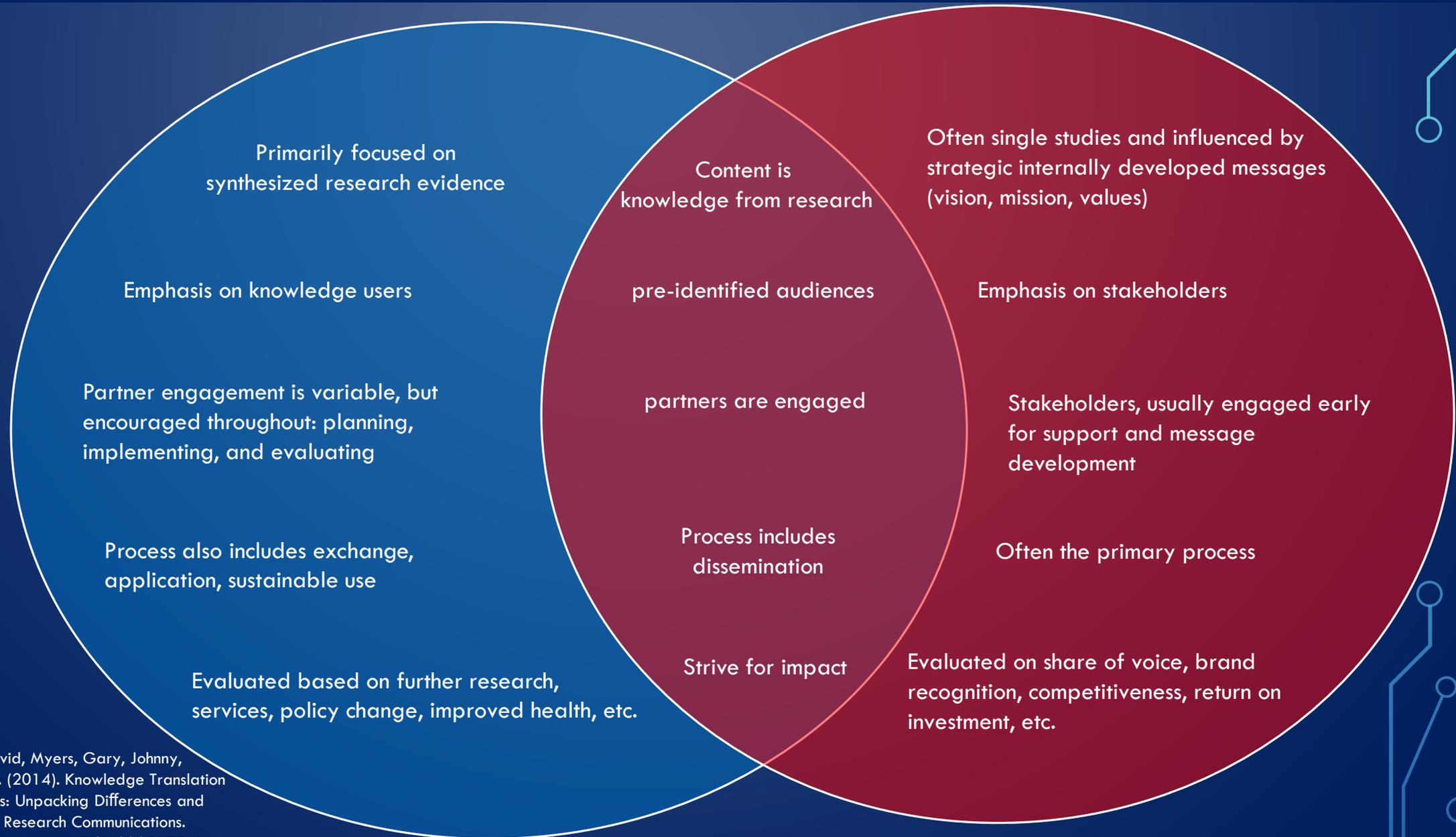
- Governing board, Financial, Management, Web, COMMUNICATIONS

## 12. Budget

## 13. Procedures

- Detail them, using the previous information

# Knowledge Translation vs. Communications



Adapted from:  
Barwick, Melanie, Phipps, David, Myers, Gary, Johnny,  
Michael, Coriandoli, Rossana. (2014). Knowledge Translation  
and Strategic Communications: Unpacking Differences and  
Similarities for Scholarly and Research Communications.  
Scholarly and Research Communication, 5(3): 0305175, 14



# Goals



To excel in the application of genomics, proteomics and bioinformatics techniques to study problems relevant to health and disease, in particular cancer.



Create opportunities for clinical applications of genomics and translational cancer research.

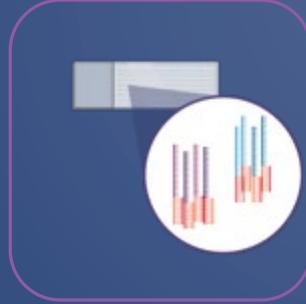


Share access to research methods and infrastructure in collaboration with Canadian and international experts.

# Core Pipelines



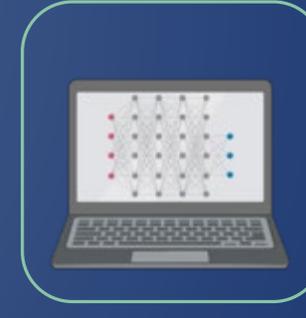
Biospecimen  
Core



Library  
Core



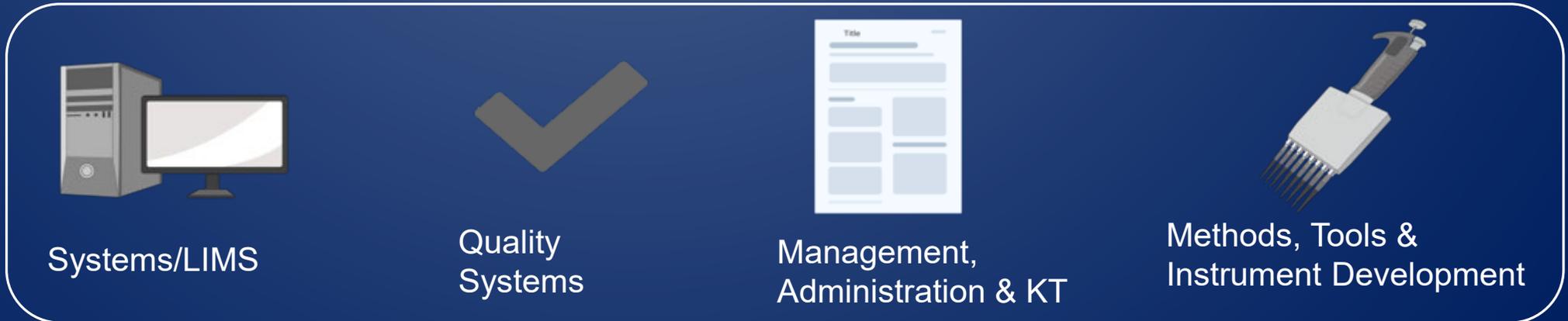
Sequencing



Bioinformatics



Proteomics



Systems/LIMS

Quality  
Systems

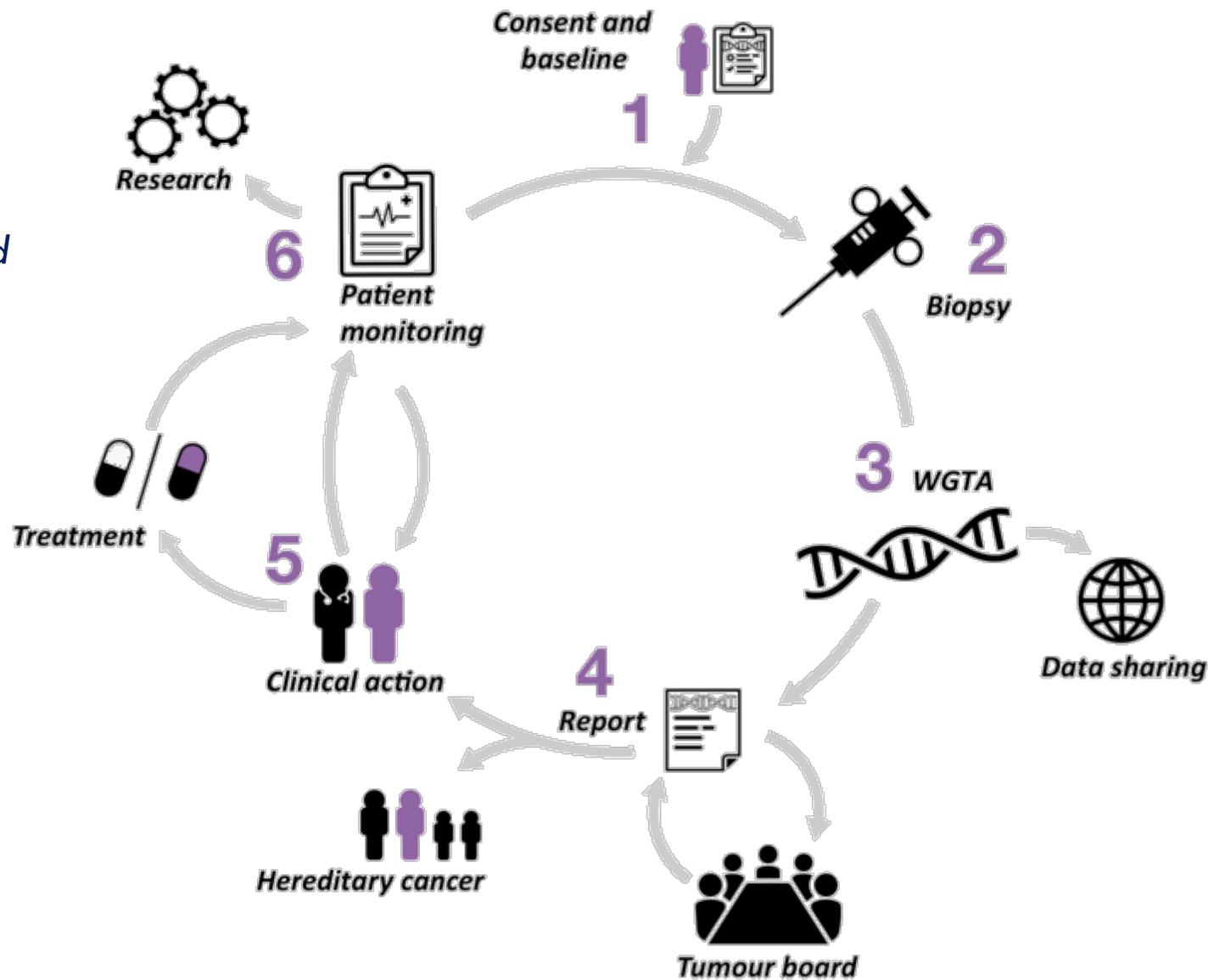
Management,  
Administration & KT

Methods, Tools &  
Instrument Development

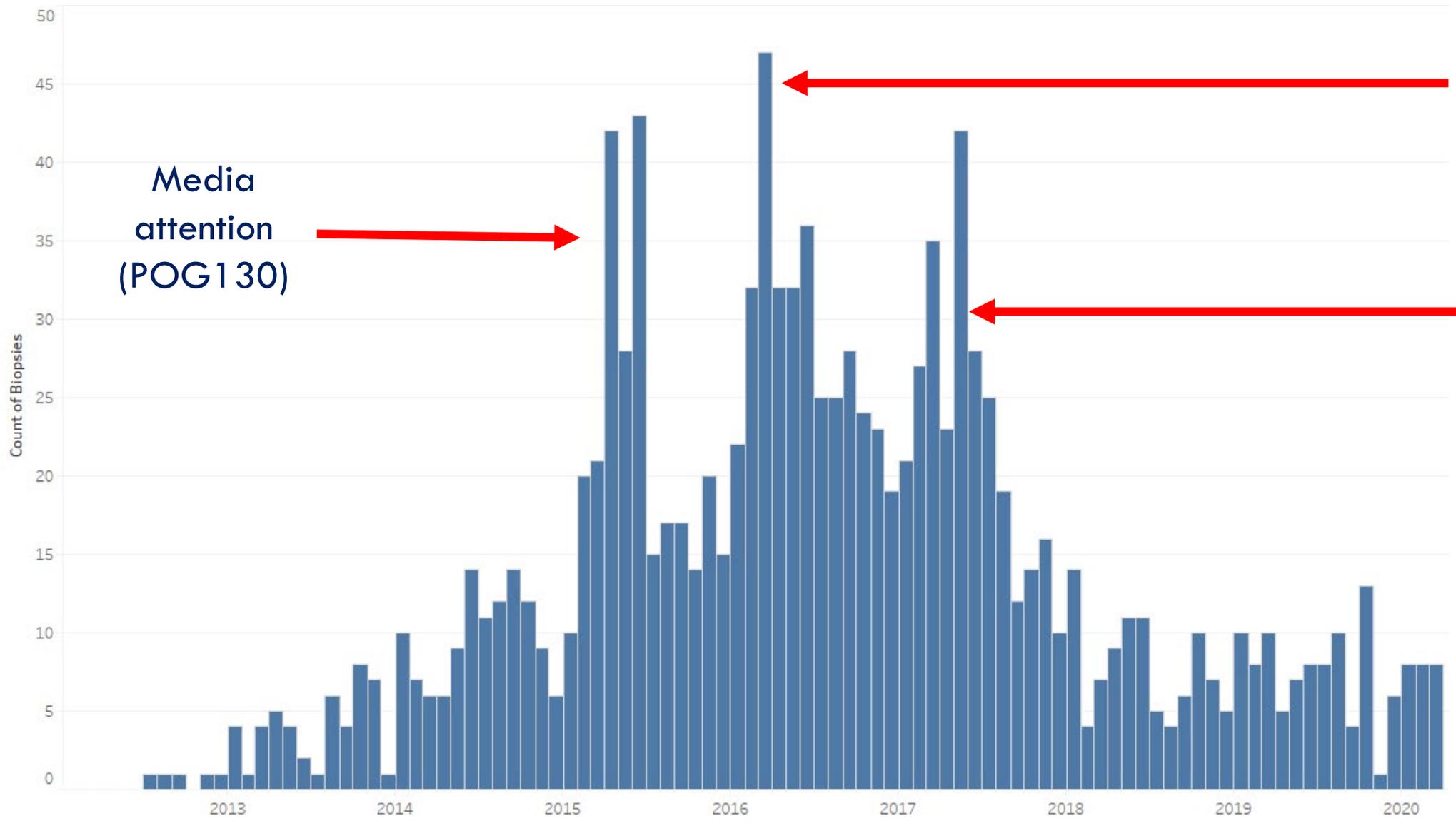
# Personalized OncoGenomics (POG)

*Incurable advanced and metastatic disease.*

*No standard treatment options.*



# POG Biopsys



Media attention (POG130)



BC Premier pledges support



CBC, Nature of Things, Cracking Cancer



# POG animation (Thank you, MSHRBC!)

**13**

- ◀ Differences in our genomes are what make each of us unique...
- ⌘ Tissue, cell, and chromosome call outs fade away. DNA inset enlarges. Full-body view of person appears.

**14**

- ◀ influencing our hair colour...
- ⌘ Basepair color changes, and so does hair colour.

**15**

- ◀ ...height, nose shape, and much more.
- ⌘ Another base color changes, and the person height increases. Another base color changes, and nose shape changes.

**16**

- ◀ Our DNA is unique to us, which is why the cancers that can grow in our bodies are unique to us too.

**17**

- ◀ Sometimes, when the DNA in a cell changes, this can alter the structure of the genome – and this can lead to cancer.
- ⌘ Genome pop up appears. Base pairs change colors / swap out, and color overlay of cancer cell change then fade back to original color.

**18**

- ◀ Cancer occurs when cells grow and divide uncontrollably, leading to the formation of a tumour.
- ⌘ Screen swipes up. Cells undergo division and fill screen.

**19**

**Personalized Oncogenomics:**  
the study of individual cancer cells

- ◀ Personalized OncoGenomics refers to the study of individual cancer genomes.
- ⌘ Personalized Oncogenomics text appears first, followed by “the study of individual cancer cells”

A blue highlight appears under cancer and onco as the rest of the second text types out

**20**

- ◀ In the POG program, scientists compare cancer genomes to get a better understanding of how seemingly different cancers are related, how they start growing and how they can be treated.
- ⌘ Scientists looking at tumour cell growth, and treatment options appearing in the boards behind them.

**21**

- ◀ Eligible patients are enrolled in POG by their oncologists based on specific criteria, which you can learn more about on the POG website.
- ⌘ Patient getting enrolled at doctor’s office, with patient chart inset appearing in centre as checkmarks appear on criteria.

**VISUAL CHANGE:** Show personalizedoncogenomics.org on screen.

**22**

- ◀ Once enrolled, a patient’s tumour samples are sent to BC Cancer’s Genome Sciences Centre for DNA analysis.
- ⌘ Icon floats above slide indicating tumor DNA mounted on cell slide. Scientists places slide in sequencer.

(Didn’t go into the level of detail indicating that this is purified DNA. Reused the cell tumor visuals to connect it with gene in the next slide).

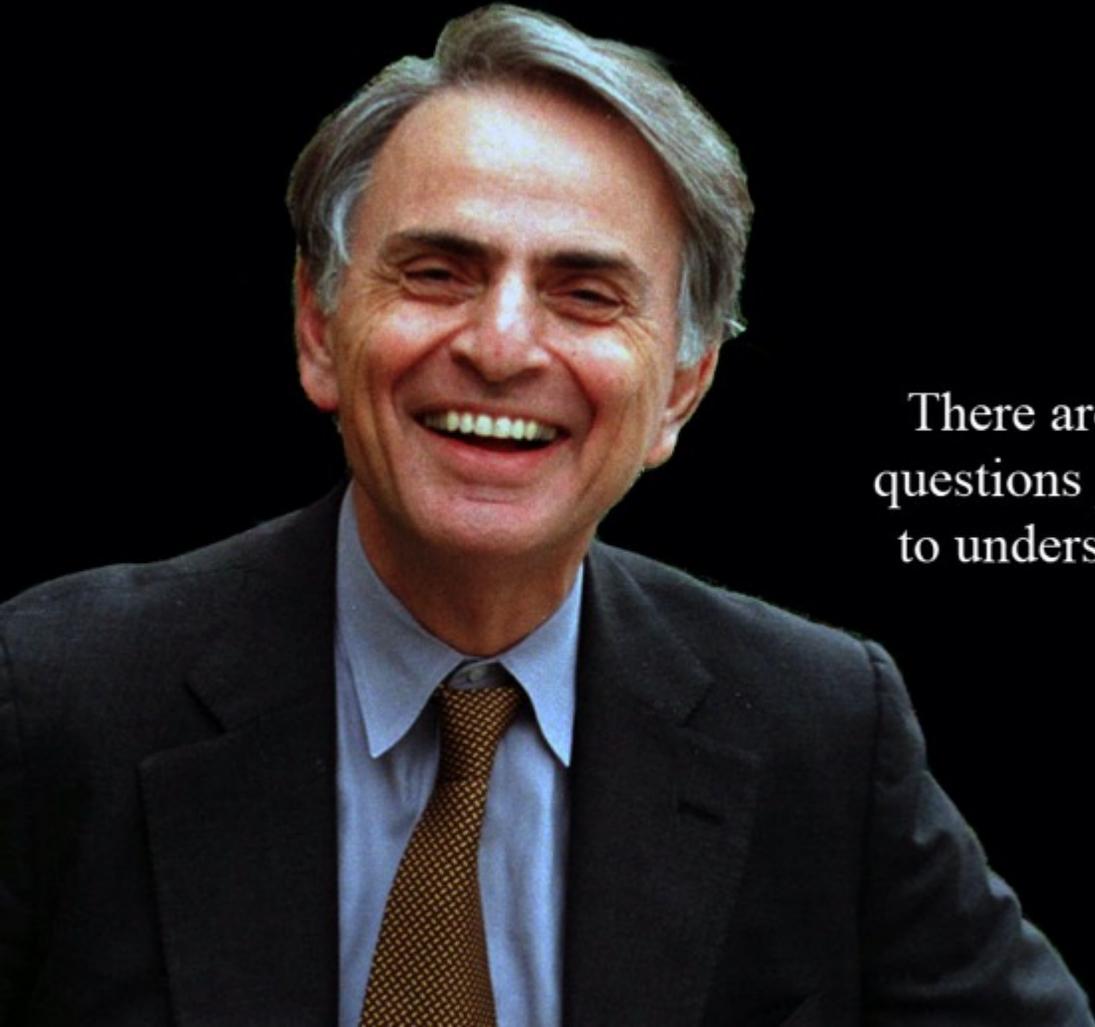
**23**

- ◀ Here, scientists use powerful technology, known as genome sequencing, to uncover alterations in tumour DNA.
- ⌘ Zoom out to see see genome sequencer uncovering tumor DNA alterations.

**24**

- ◀ This information is shared with a patient’s oncologist who meets with a team of scientists and clinicians to discuss the results. Sometimes the information influences a patient’s prognosis and potential treatment options.
- ⌘ **SUGGESTED VISUALS:** Show this in an auditorium to illustrate the size of POG Tumor Boards (usually about 50 experts).

# Questions?



There are naive questions, tedious questions, ill-phrased questions, questions put after inadequate self-criticism. But every question is a cry to understand the world. There is no such thing as a dumb question.

- Carl Sagan

*The Demon-Haunted World*