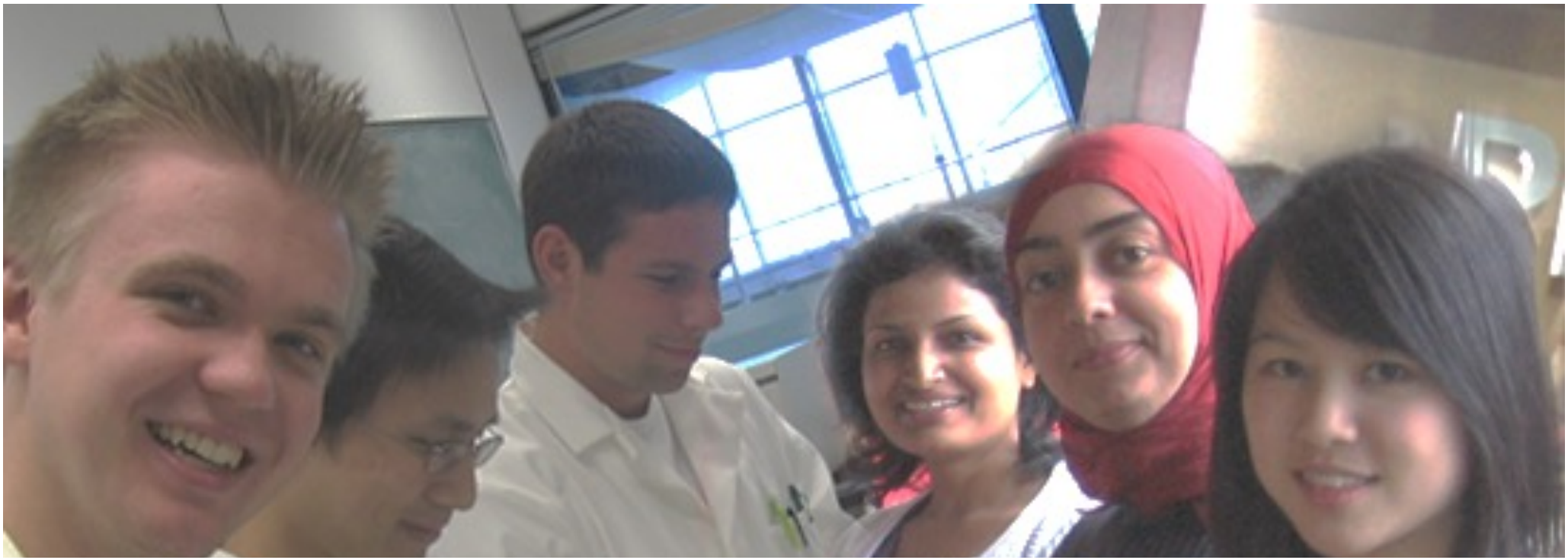
Your Summer Research Program at FOMD

Think Boldly

Dream Big

Be Responsible



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Associate Director Education, Neuroscience and Mental Health Institute

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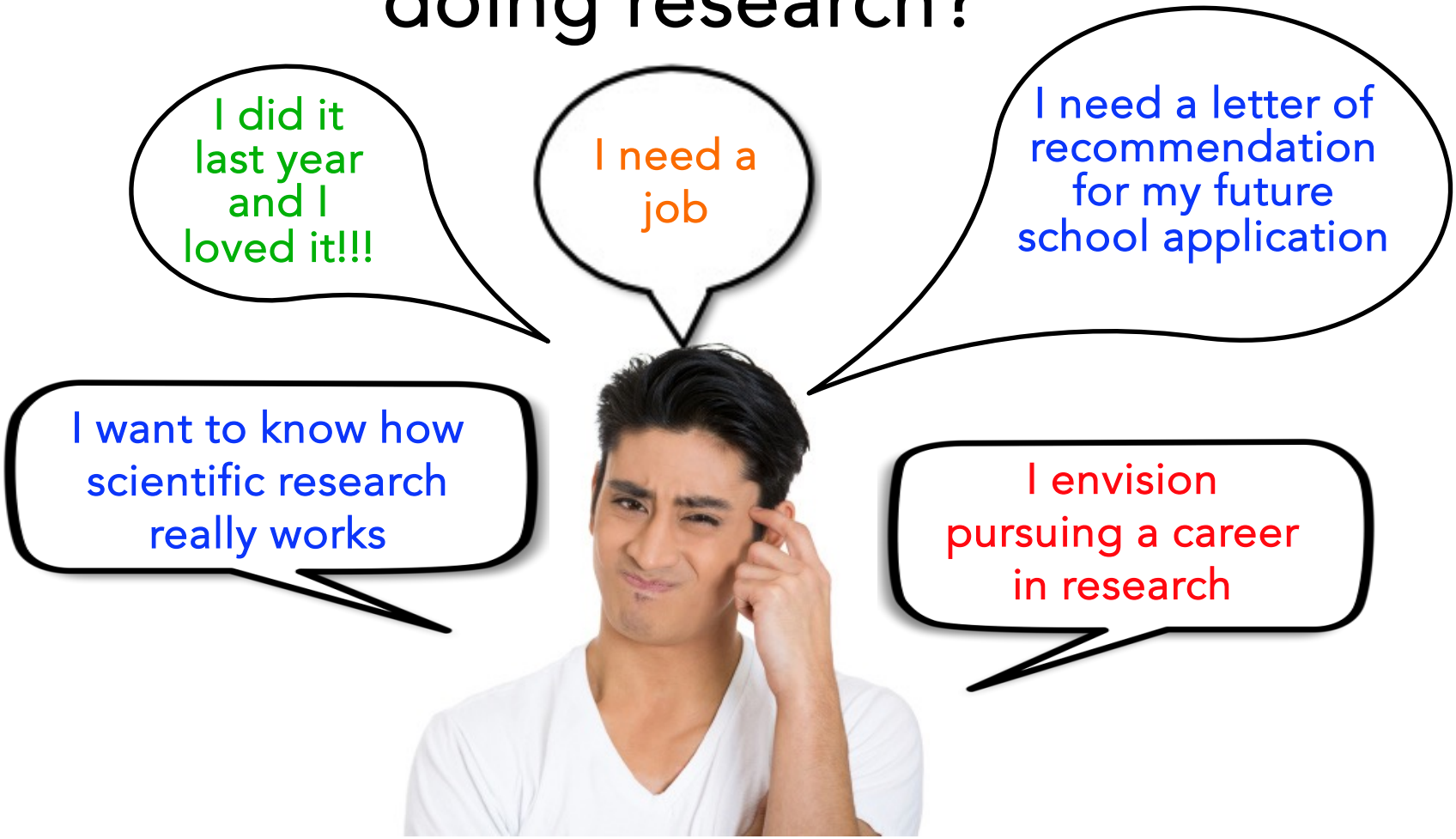
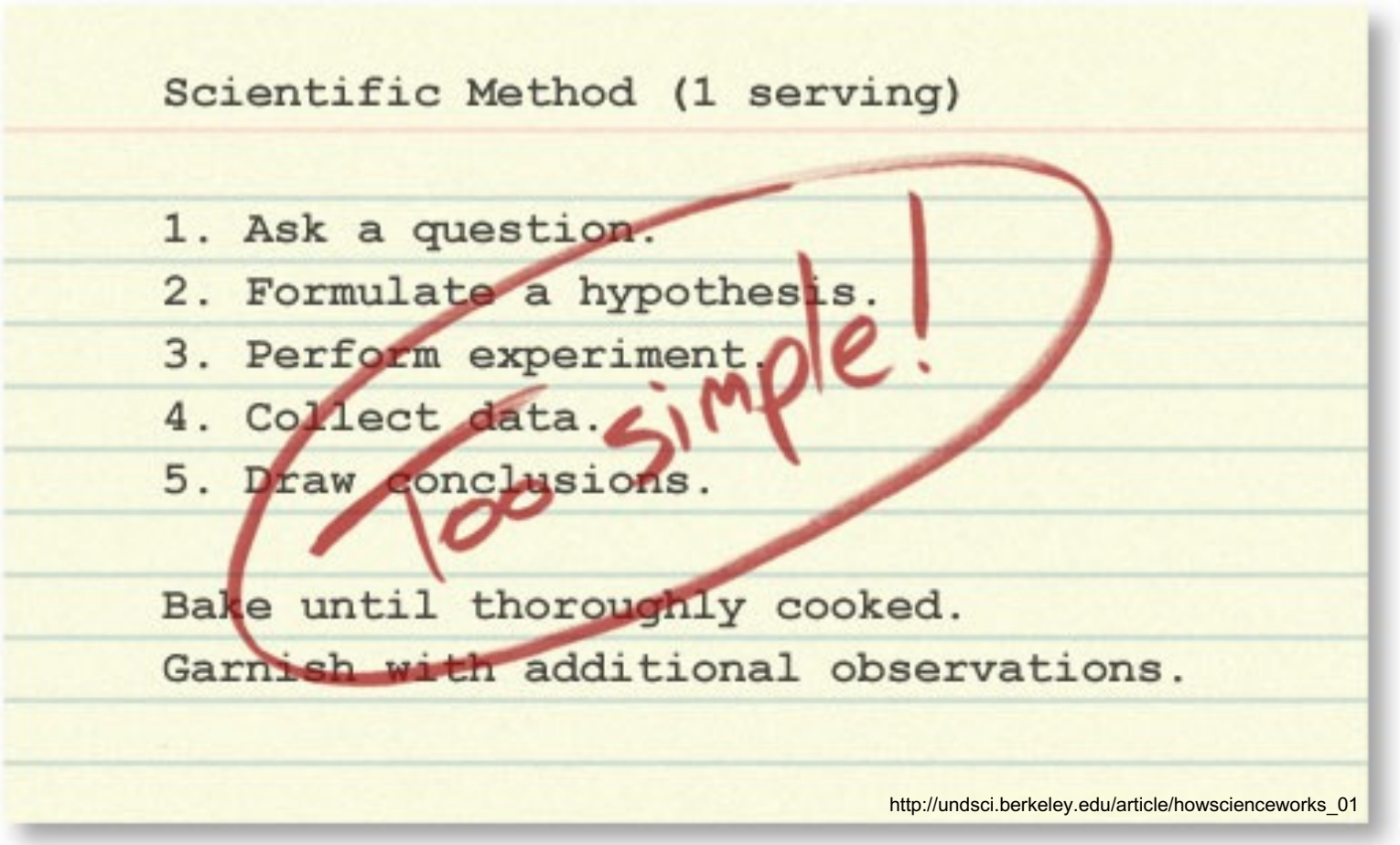
Email: elena.chaves@ualberta.ca

Why would you spend your summer doing research?



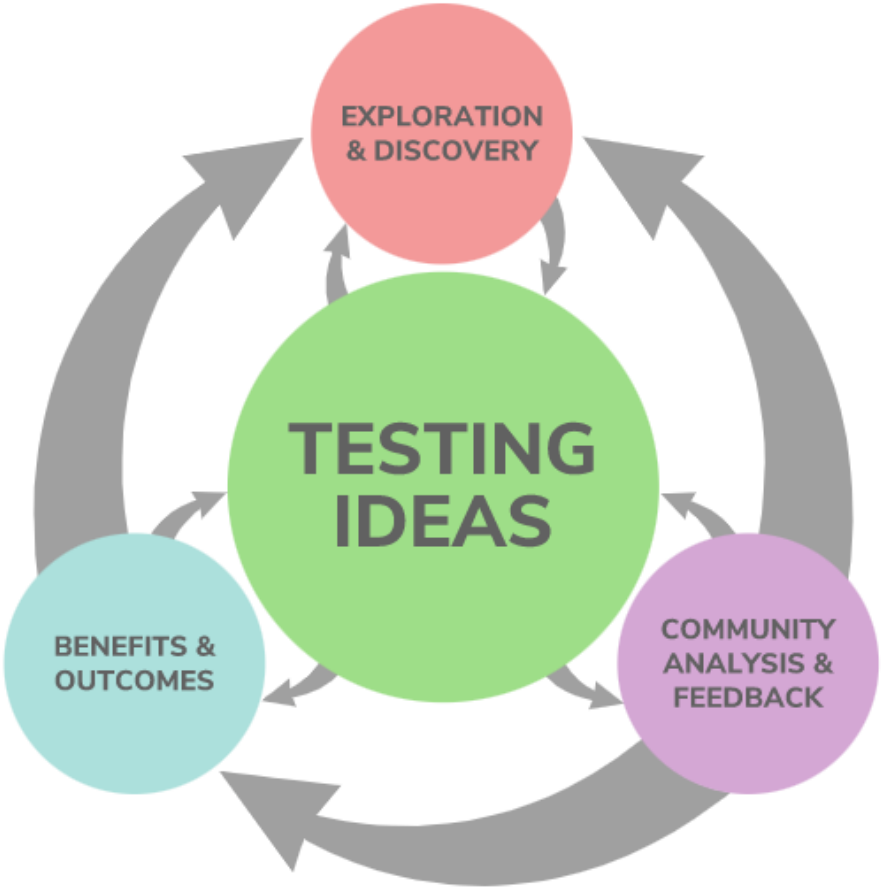
What can you get from a Summer Research at FoMD?

The Scientific Method



Is this how science really works?

The Real Process of Science



http://www.understandingscience.org

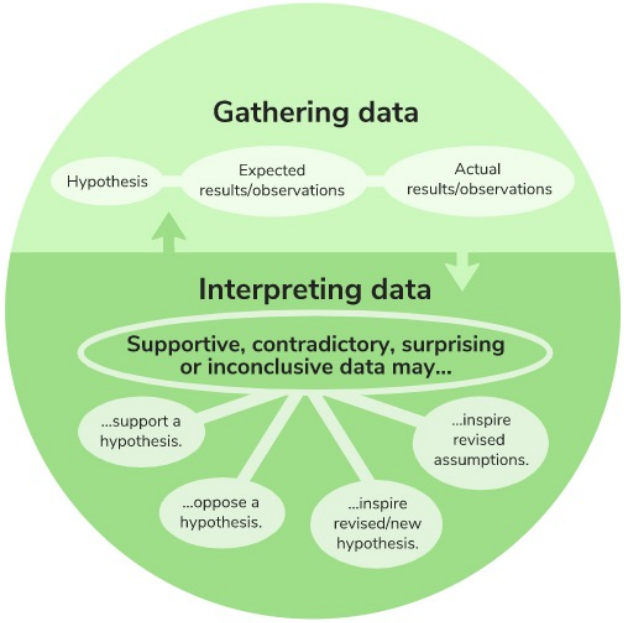
Exploration and Discovery

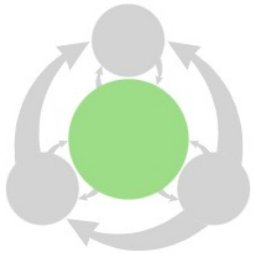
http://undsci.berkeley.edu

Making observations and forming questions are key to the process of science

Testing Ideas

http://www.understandingscience.org

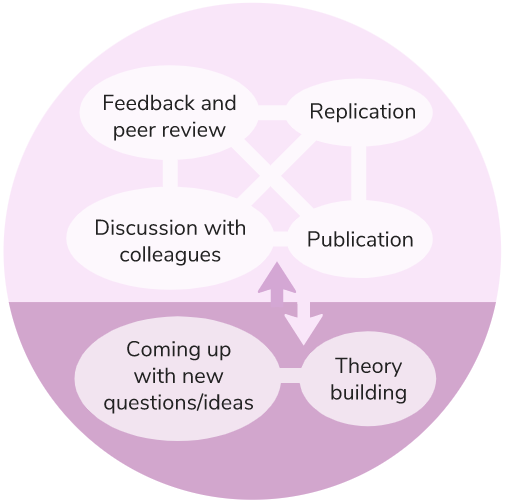


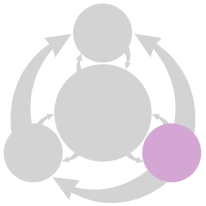


- Testing hypotheses and theories is at the core of the process of science
- We use data to evaluate possible explanations, keeping only those that are supported by evidence

Community Analysis and Feedback

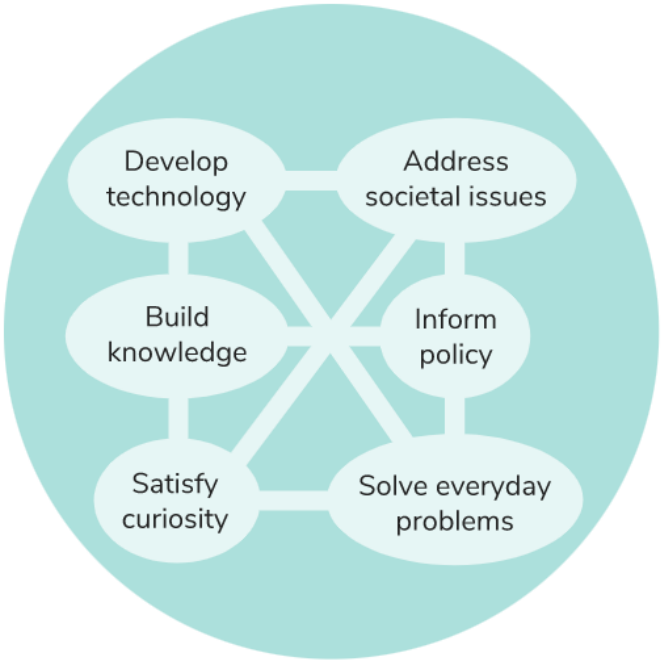
http://www.understandingscience.org





- Community interactions are essential to the process of science
- Scientists must share their research for it to be evaluated and built upon by other scientists
- The scientific community helps ensure science's accuracy

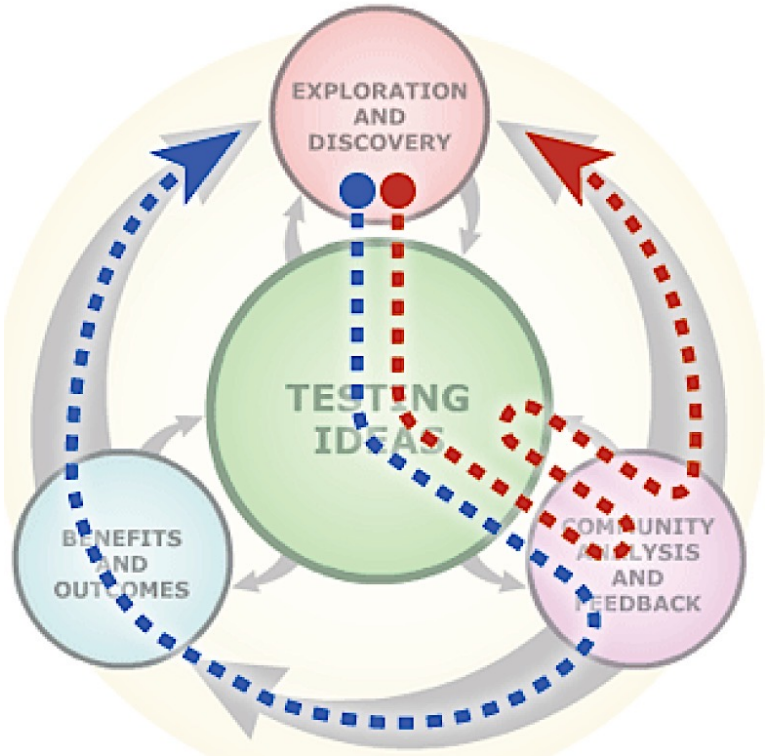
Benefits and Outcomes



The process of science influences society and is influenced by society

http://www.understandingscience.org

The Process of Science is Not Pre-Determined



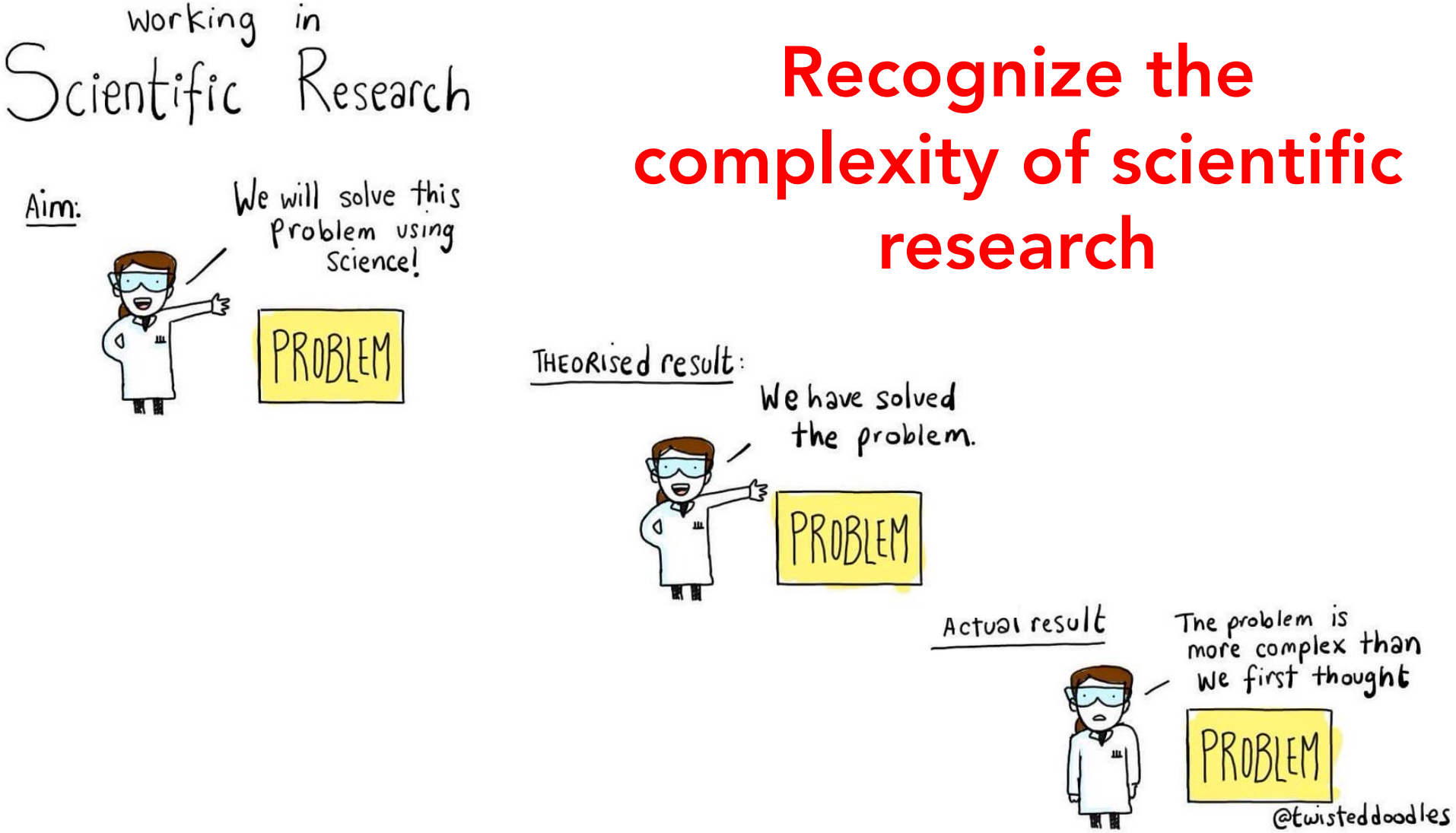
http://www.understandingscience.org

What can you get from a Summer Research at FoMD?

Enrich your perspective on scientific research

Learn how science really works

Recognize the complexity of scientific research




BECOME COMPETENT AT
PERFORMING EXPERIMENTS

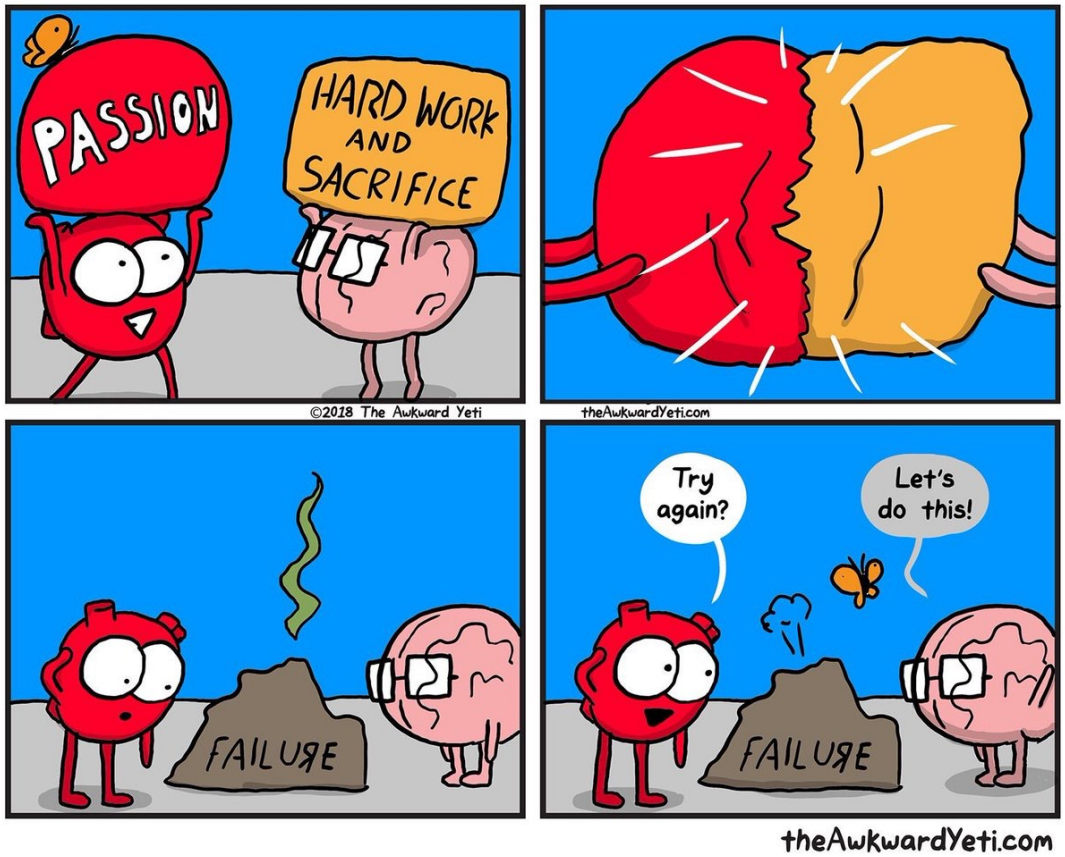
Understand the inherent uncertainty of Science

Science is founded on uncertainty. Each time we learn something new and surprising, the astonishment comes with the realization that we were wrong before.

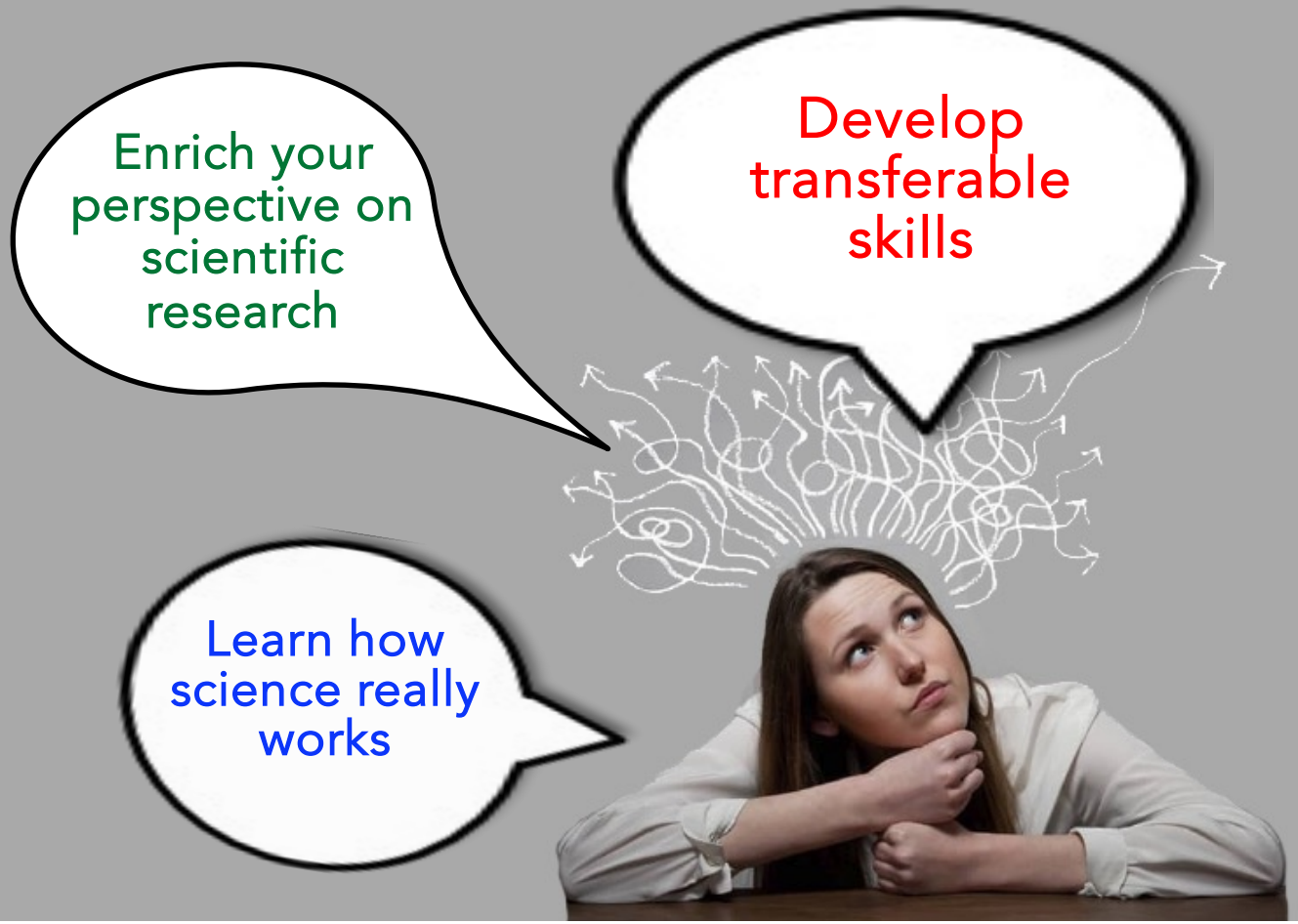
Lewis Thomas

American physician, researcher, author, and teacher best known for his essays, which contain reflections on a wide range of topics in biology.

Appreciate the importance of perseverance in scientific research



What can you get from a Summer Research at FoMD?



Transferable Skills

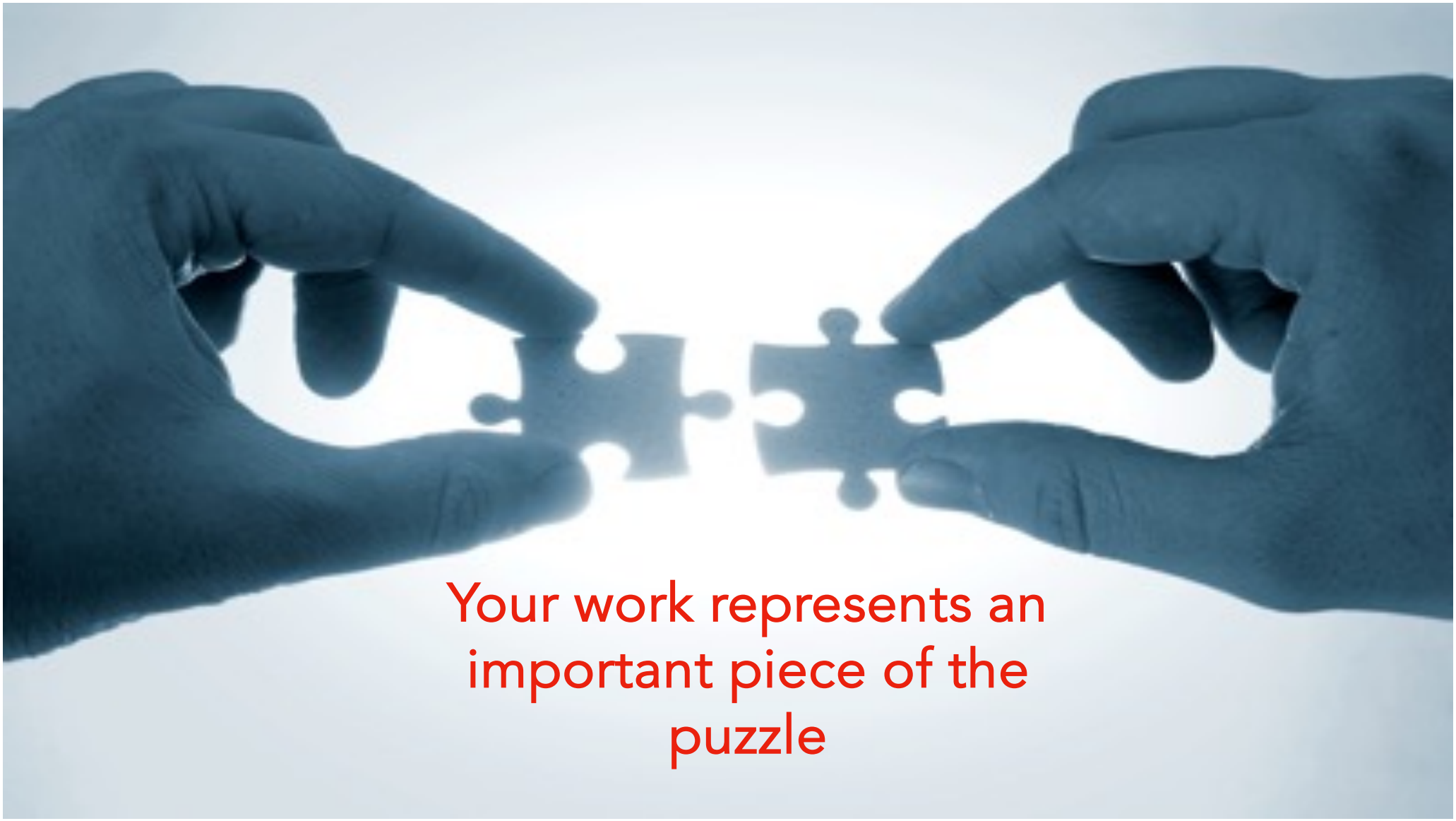
Skills learned in one context (for example research) that are useful in another (*e.g.* future employment in research, business etc.).

IMPROVE YOUR ORGANIZATION SKILLS

IMPROVE YOUR COMMUNICATION SKILLS

Image: Chesapeake Bay Program / Flickr / CC BY 2.0

You are trying to answer an important scientific question


Your work represents an important piece of the puzzle

GROW AS A CRITICAL THINKER

reserve judging until they have all the facts

are curious

are aware of their own biases

are open to change their opinions based on new information

question ideas and assumptions rather than accepting them at face value


Think Boldly
Dream Big

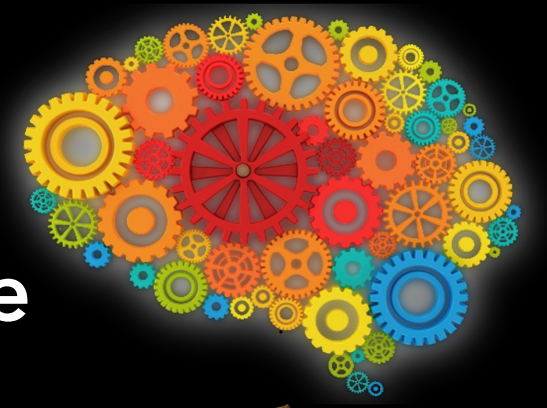
Be Creative

https://www.forbes.com/

Creativity

coming up with new ideas and innovative solutions to problems

thinking outside the box



expressing ideas in unique ways

In time you would develop original research ideas

What can you get from a Summer Research at FoMD?

Enrich your perspective on scientific research

Develop transferable skills

Realize that scientific research is not for you

Learn how science really works

Become an advocate for science

Science advocates make sure that scientific discoveries and information are easy to understand for everyone, not just experts

People who understand science better can tell the difference between reliable information and false claims, which helps stop the spread of misinformation

Science advocates

Speak up for science. *Nature* **517**, 231-233, doi:10.1038/nj7533-231a (2015).

Science advocates help create a society that appreciates and supports science and makes smart decisions using proven facts

People who understand science better are more likely to support science education and funding for research, which helps new scientific ideas and discoveries develop

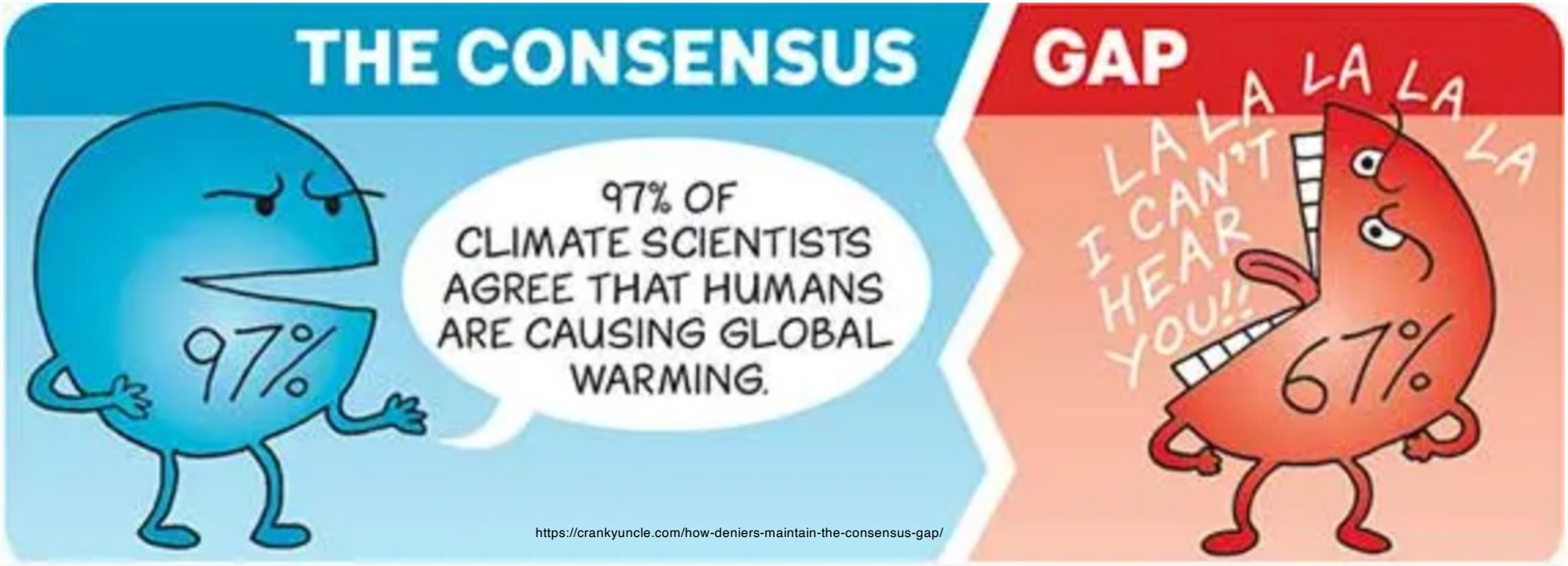
Science advocates work to bridge the gap between scientific communities and the public

THE "CONSENSUS GAP"

THE PUBLIC THINK...

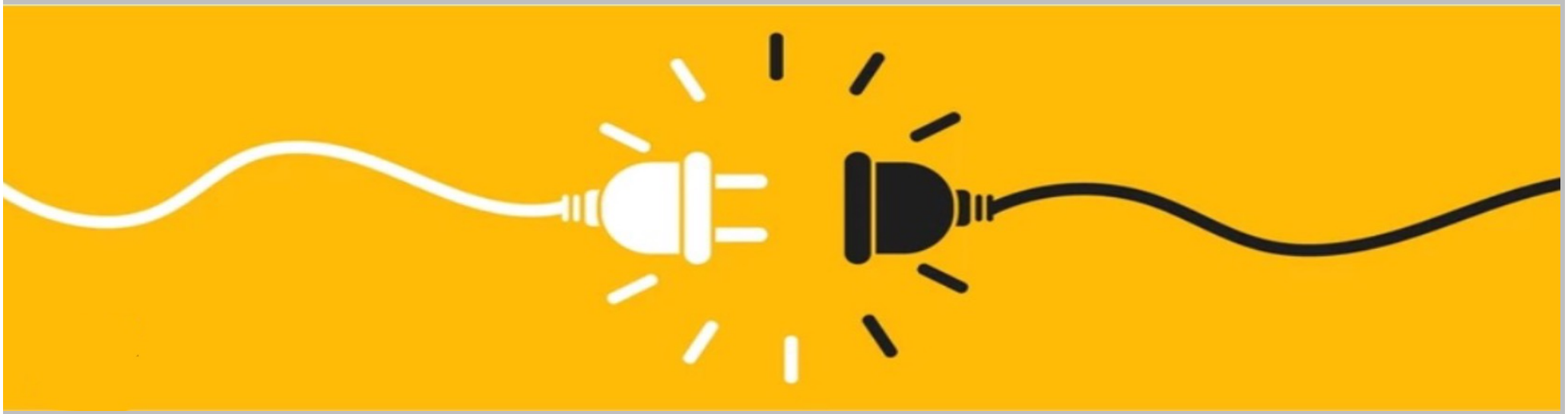
IN REALITY...

The Importance of Closing the consensus Gap



When people don’t realize there is scientific consensus they are less likely to support climate action

Lack of Understanding Of Science

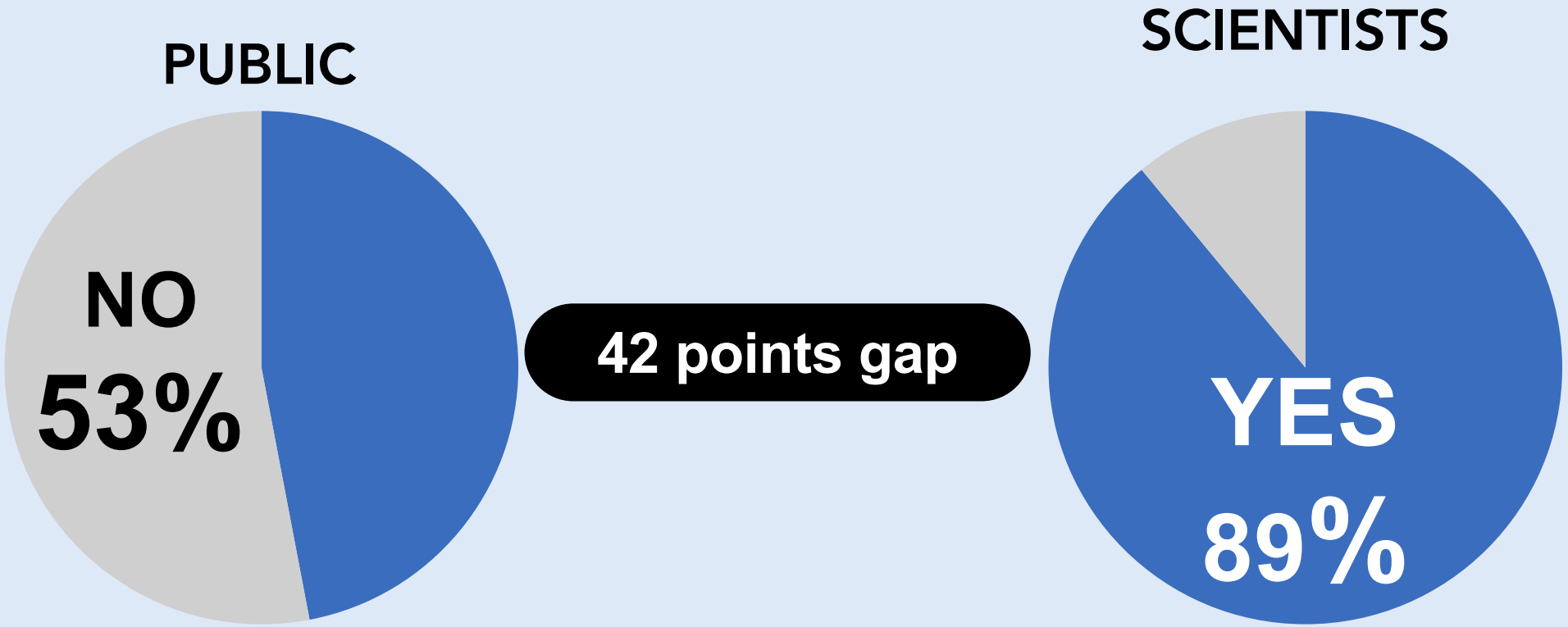


Disconnect between public opinion and the scientific consensus on several science-related topics

Is it safe to eat genetically modified food?

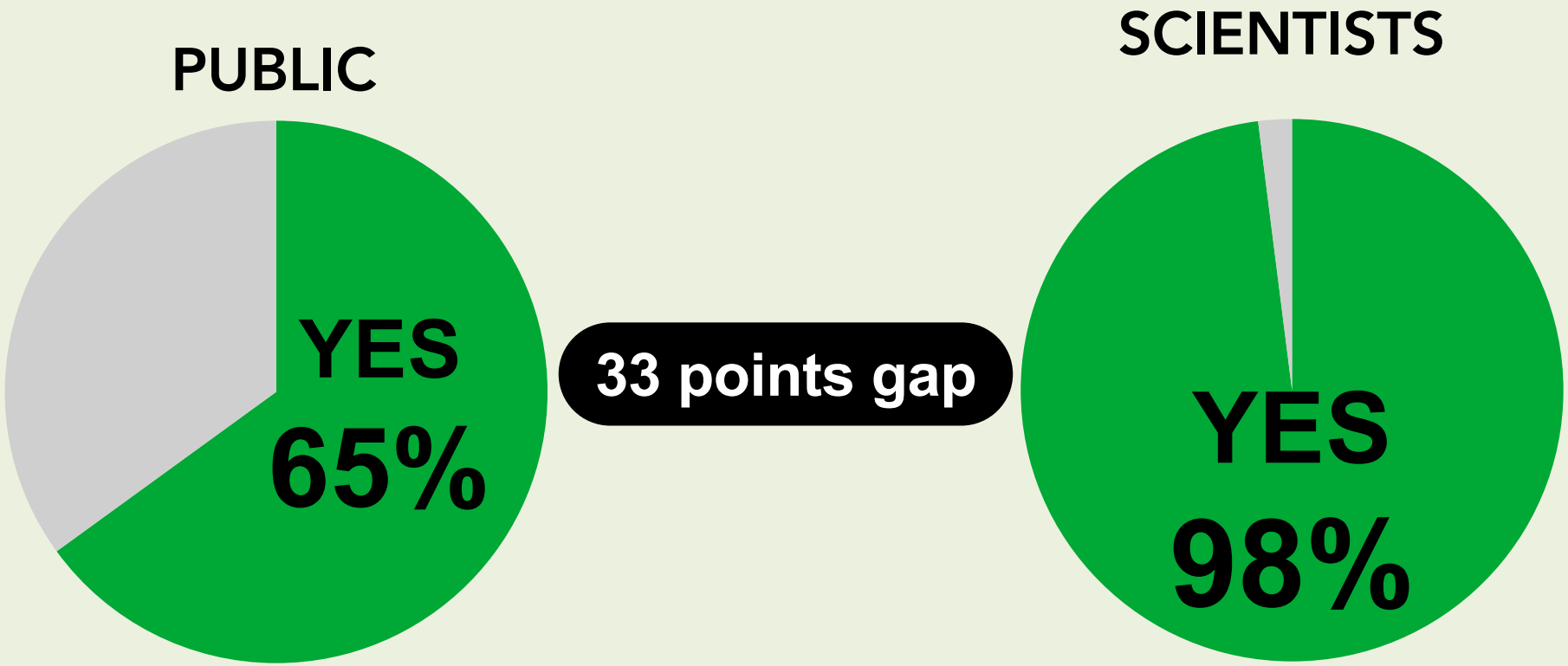
http://www.pewinternet.org

Favor use of animals in research



http://www.pewinternet.org

Humans have evolved over time



http://www.pewinternet.org

Barriers for Closing the Gap

Concerns about an underinformed or even misinformed public when it comes to scientific issues

"Online falsehoods create polarized belief systems in major nations"

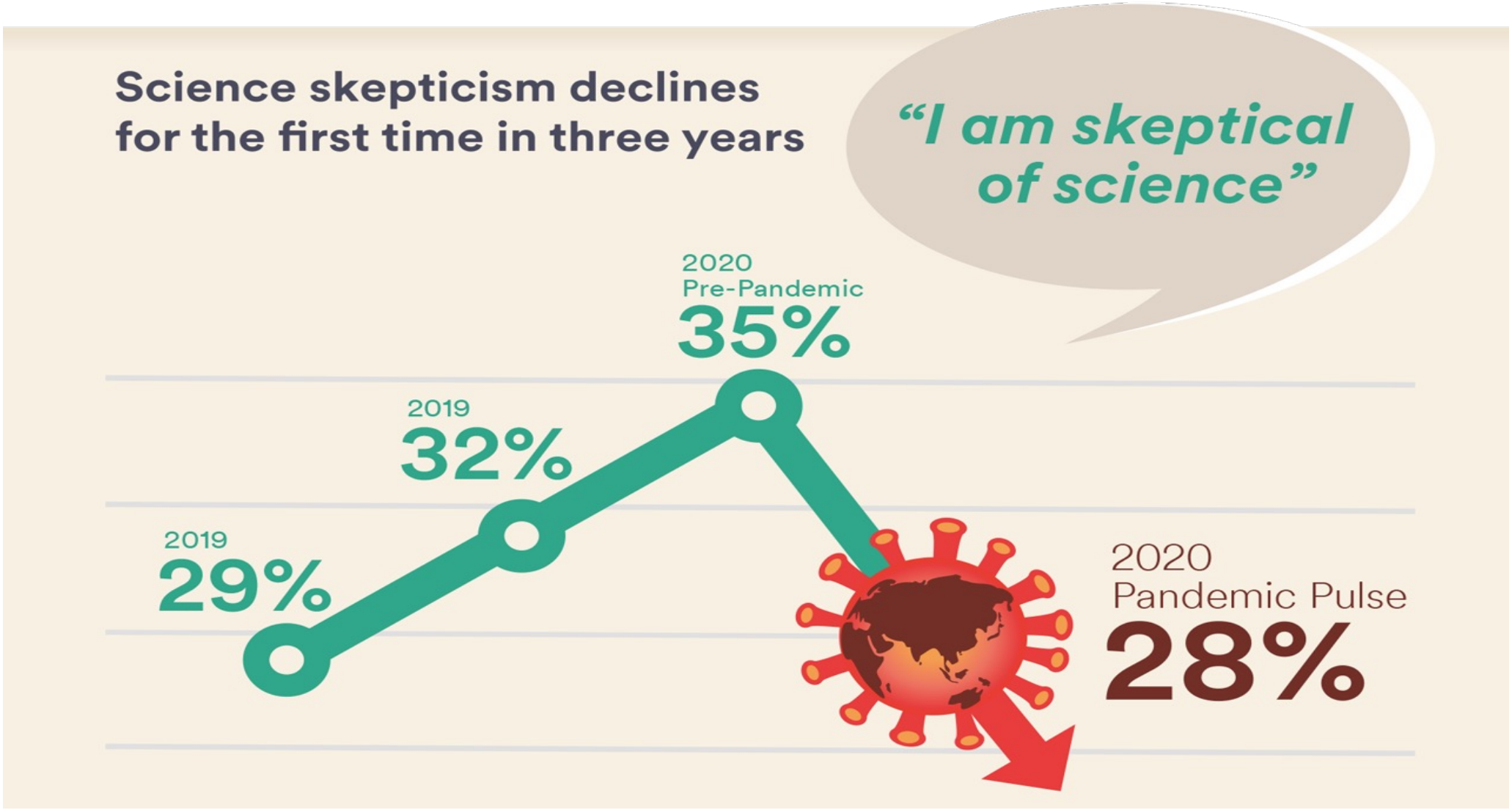
Prof Sander van der Linden

https://yourmist.streamlit.app/

Barriers for Closing the Gap

The majority of policy makers and people in positions of power are not scientists

Risk of policy makers following the will of misinformed members of the public



2023 3M State of Science Index survey https://www.3m.com/

https://www.washingtonpost.com/brand-studio/wp/2020/10/23/feature/could-the-pandemic-renew-public-trust-in-science/

Be Responsible

https://www.the-scientist.com

Number 1 Responsibility:
HONESTY

No matter which path you choose, the summer research program at the FoMD will have a significant and lasting impact on your future