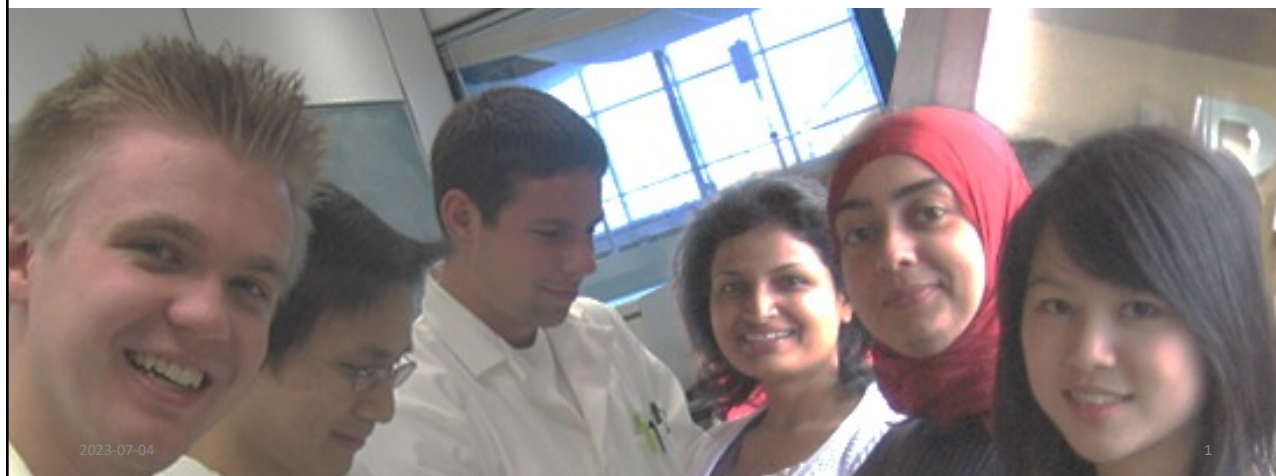


Your Summer Research Program at FOMD

Think Boldly

Dream Big

Be Responsible



1

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Associate Director Education, Neuroscience and Mental Health Institute

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Why would you spend your summer doing research?

I did it last year and I loved it!!!

I need a job

I need a letter of recommendation for my future school application

I want to know how scientific research really works

I envision pursuing a career in research

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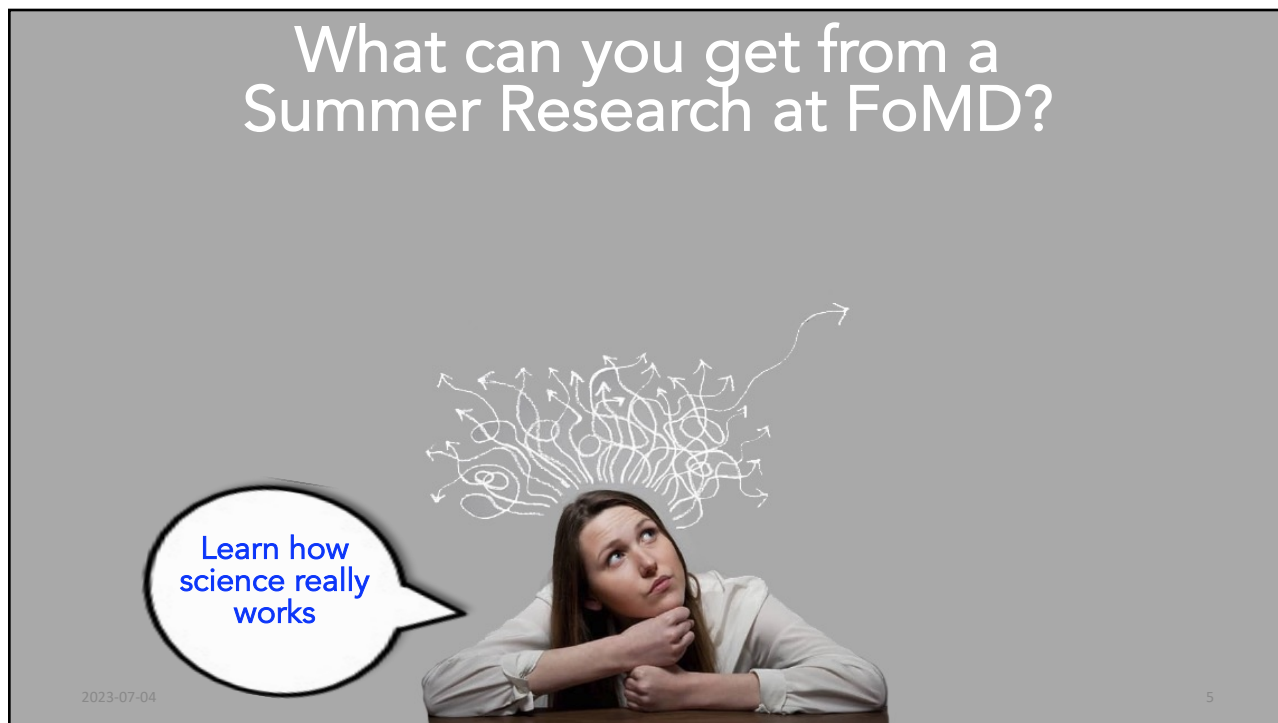
What Can You Expect from Your Summer Research?

I HAVE NO IDEA
WHAT'S GOING
TO HAPPEN.

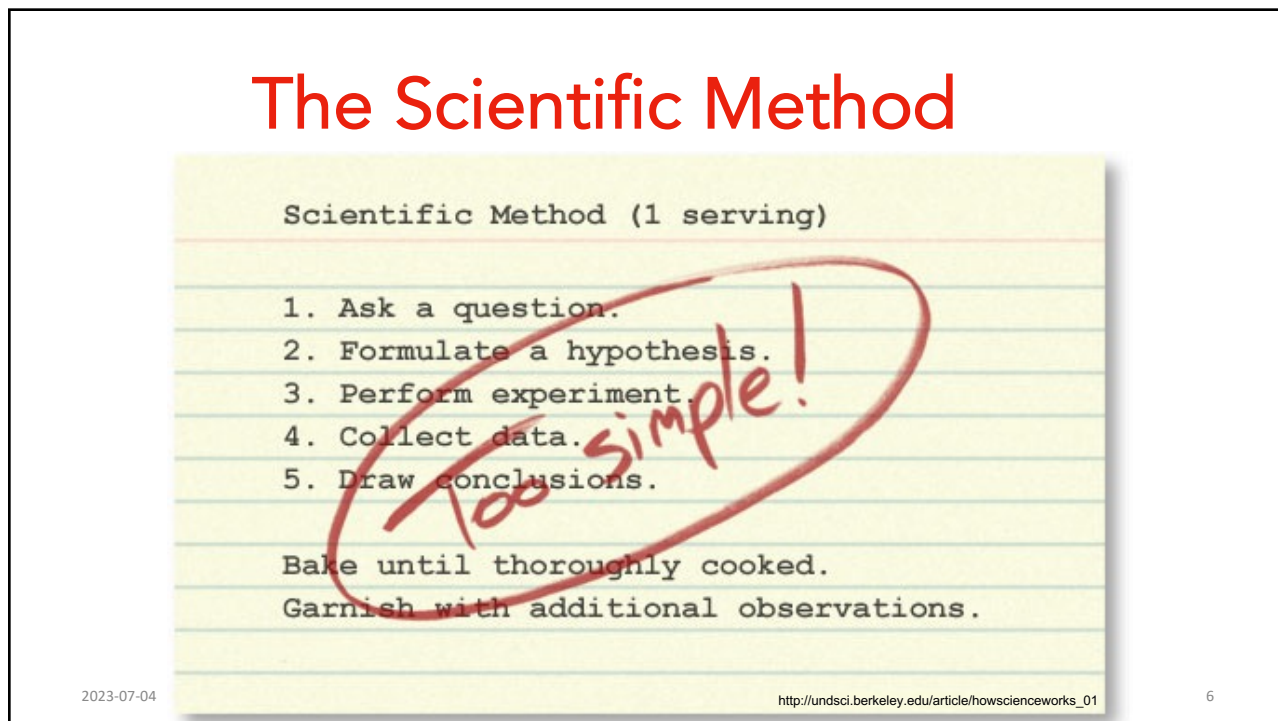
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Finally done with the first two steps of The Scientific Method! Now for one simple experiment, and I can prove that my hypothesis is right!



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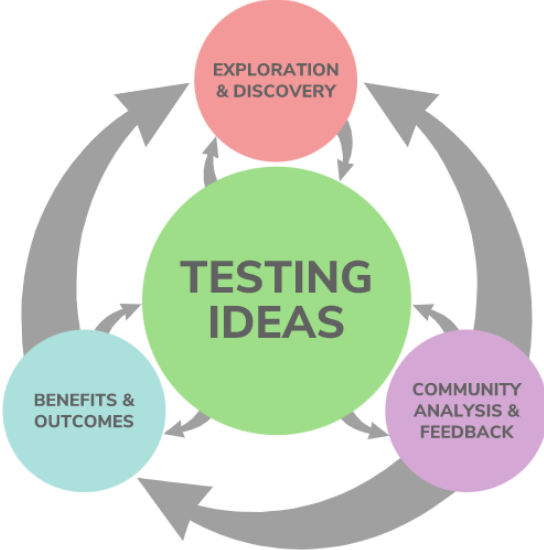
Is this how science really works?

7

The cartoon depicts a scientist with brown hair and safety goggles, holding a test tube and a pipette. A large, red, distressed 'WRONG' stamp is superimposed over the scientist's face. The scientist's expression is one of triumph, with a wide, toothy grin. The background is a simple grey gradient.

7

The Real Process of Science



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<http://www.understandingscience.org>

The diagram illustrates a cyclical process of science. At the center is a large green circle labeled 'TESTING IDEAS'. Surrounding it are three smaller circles: a red one at the top labeled 'EXPLORATION & DISCOVERY', a purple one at the bottom right labeled 'COMMUNITY ANALYSIS & FEEDBACK', and a teal one at the bottom left labeled 'BENEFITS & OUTCOMES'. Grey arrows connect these circles in a clockwise direction, forming a continuous loop around the central 'TESTING IDEAS' circle.

8

Exploration and Discovery

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

9

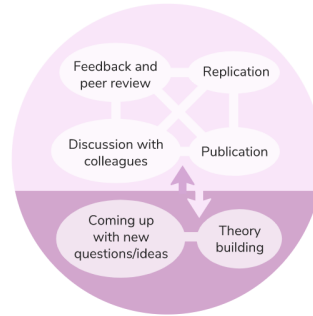
Testing Ideas

- 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

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Community Analysis and Feedback

<http://www.understandingscience.org>



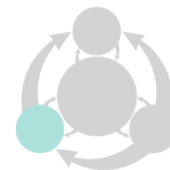
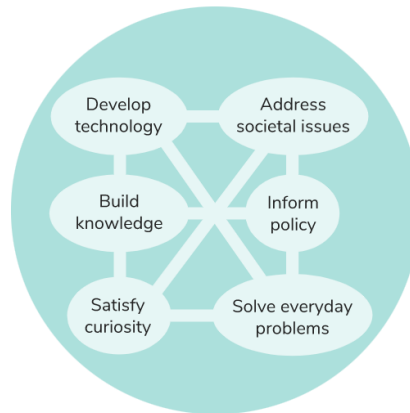
- Community interactions are essential to the process of science
- Scientists must share their research for it to be evaluated and built upon by other scientists
- The scientific community helps ensure science’s accuracy

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Benefits and Outcomes



The process of science influences society and is influenced by society

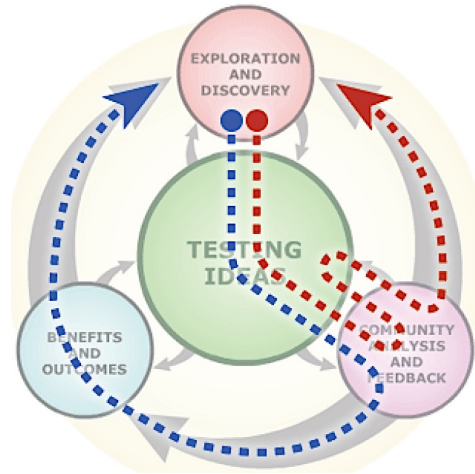
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<http://www.understandingscience.org>

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The Process of Science is Not Pre-Determined



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<http://www.understandingscience.org>

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What can you get from a Summer Research at FoMD?

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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.

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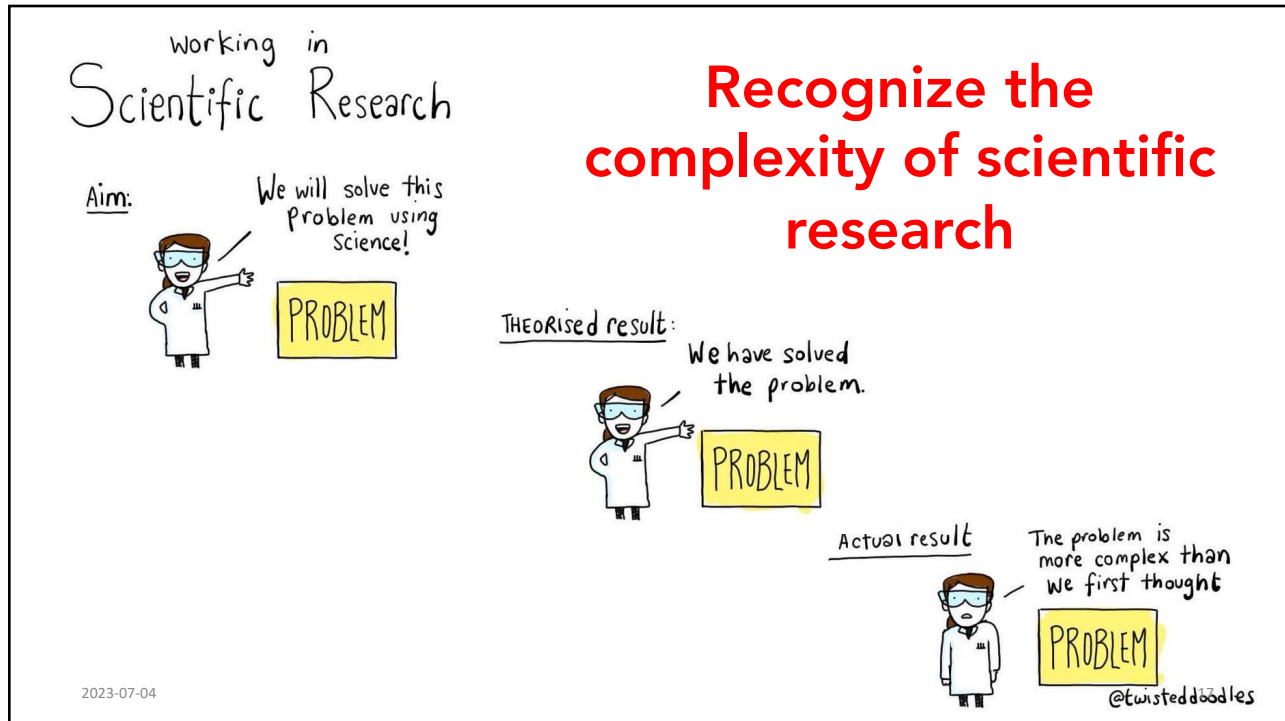
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BECOME COMPETENT AT PERFORMING EXPERIMENTS

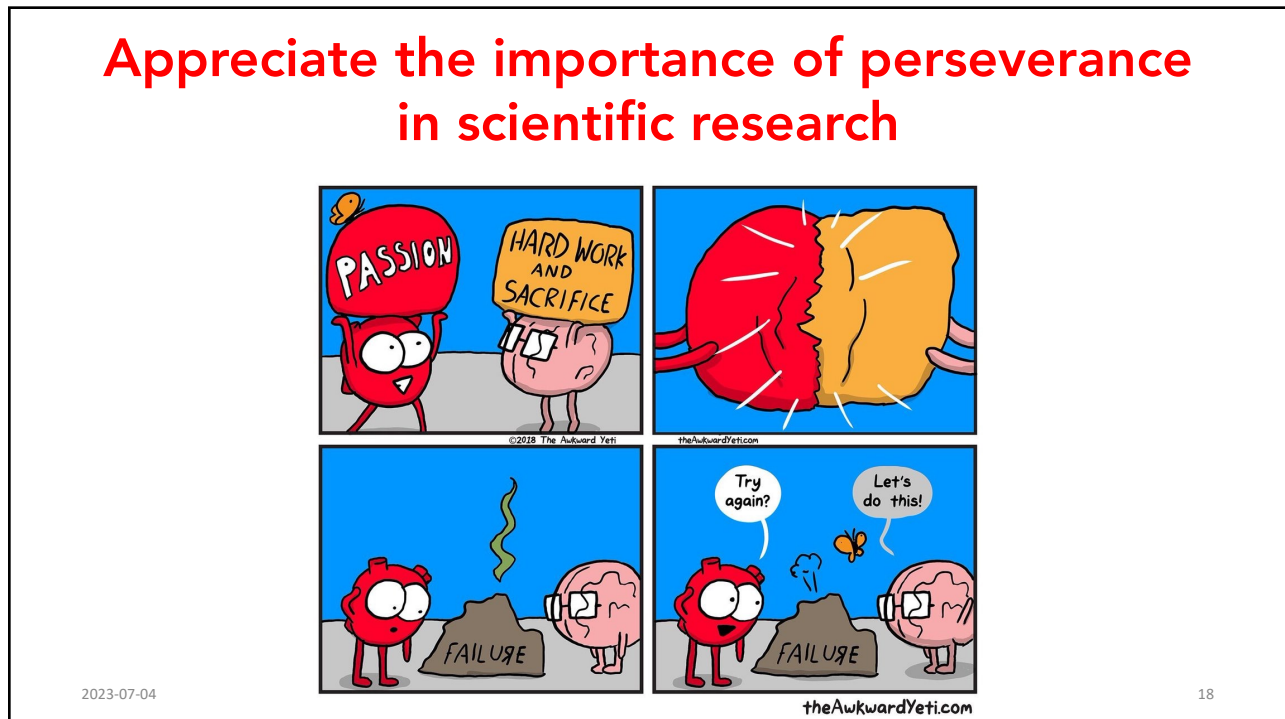


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What can you get from a Summer Research at FoMD?

Enrich your perspective on scientific research

Develop transferable skills

Learn how science really works

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IMPROVE YOUR ORGANIZATION SKILLS

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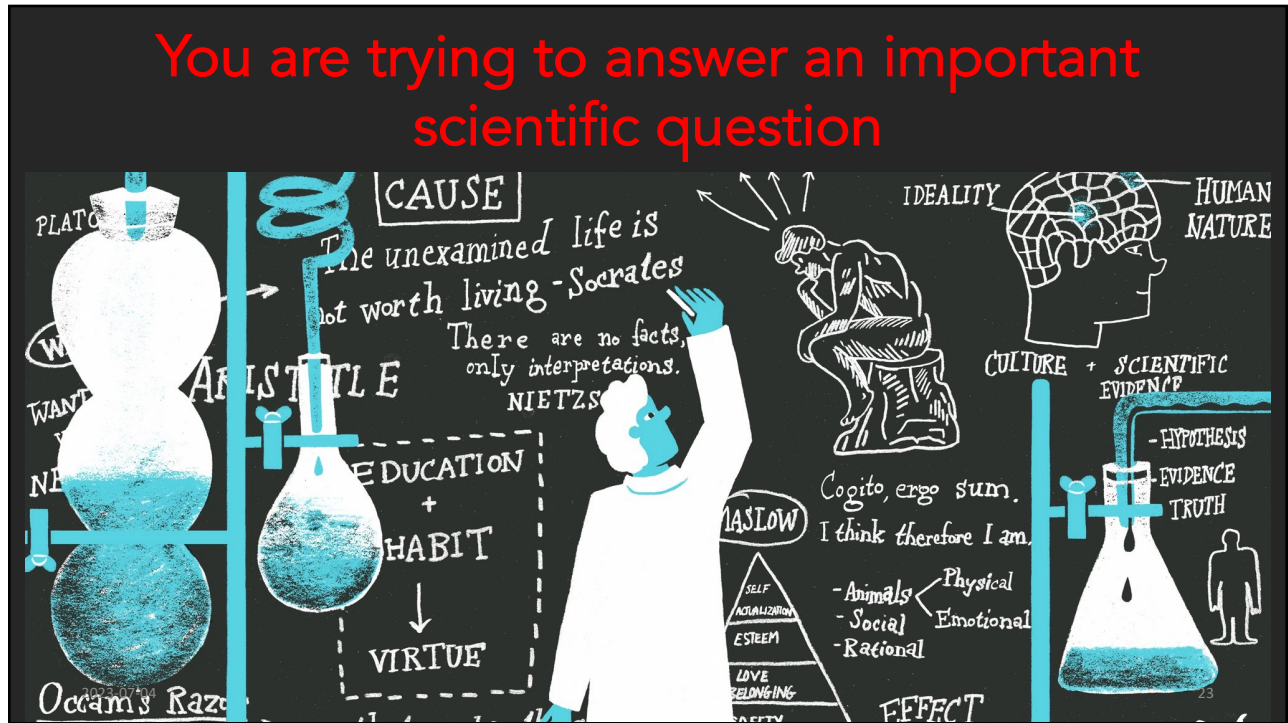
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GROW AS A CRITICAL THINKER


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



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Think Boldly

Dream Big

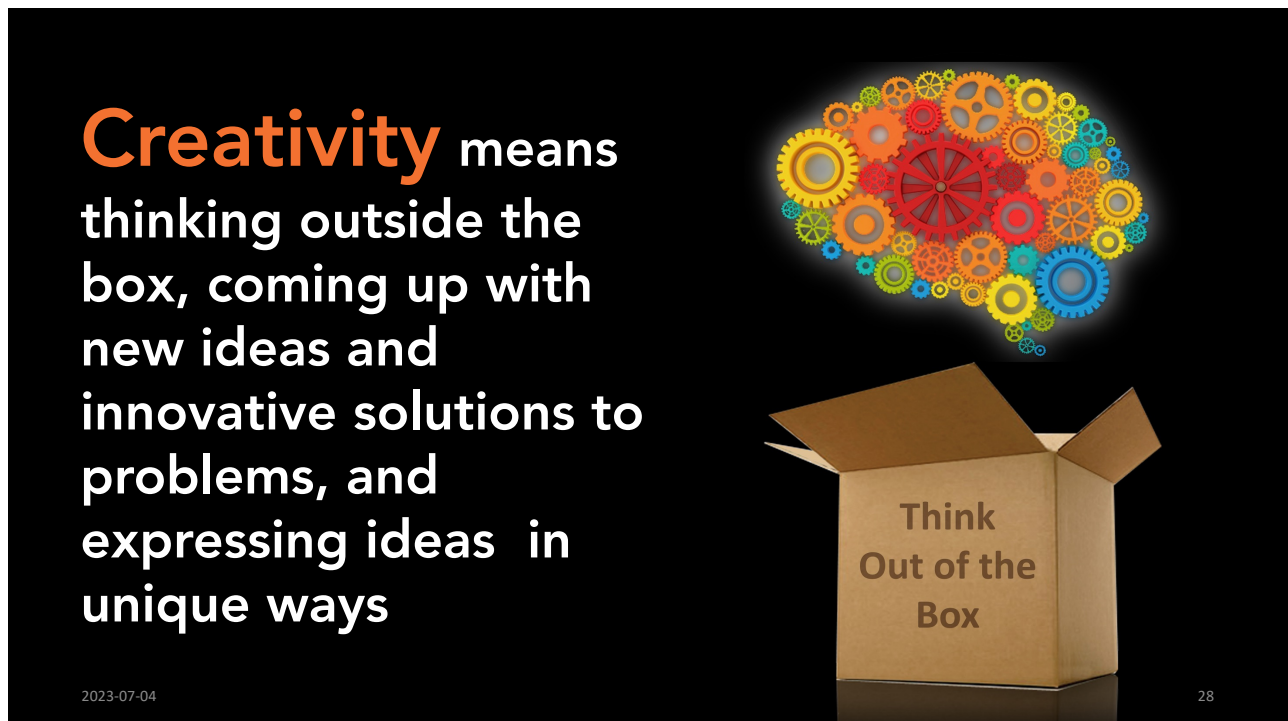


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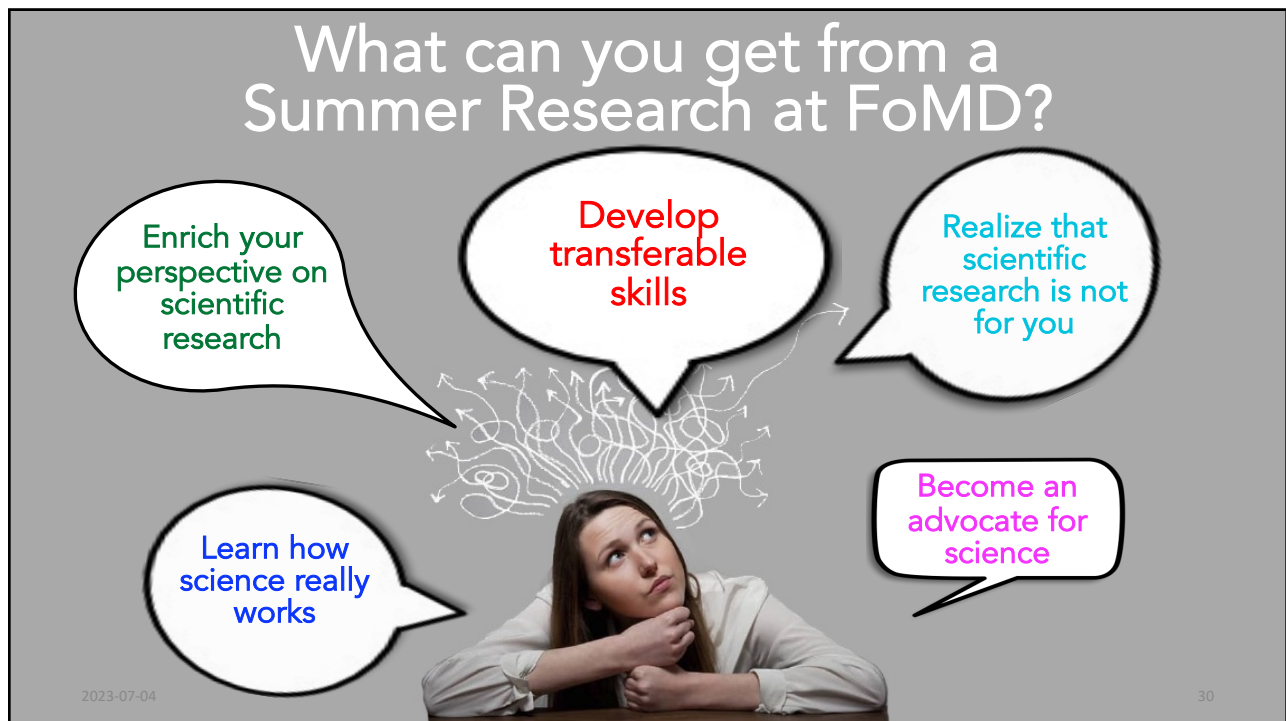


Will I ever have my own research ideas?

In time you would develop original research ideas

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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

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

“Online falsehoods create polarized belief systems in major nations”

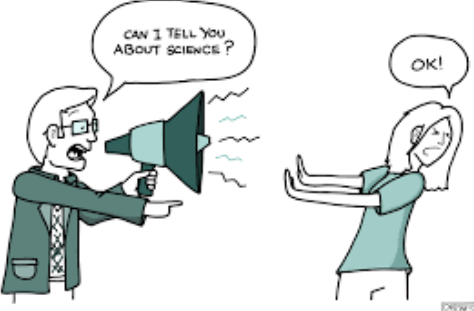
Prof Sander van der Linden

<https://yourmist.streamlit.app/>

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The Importance of Being Science Advocates

Declining Levels of Trust Threaten Public Support for Science



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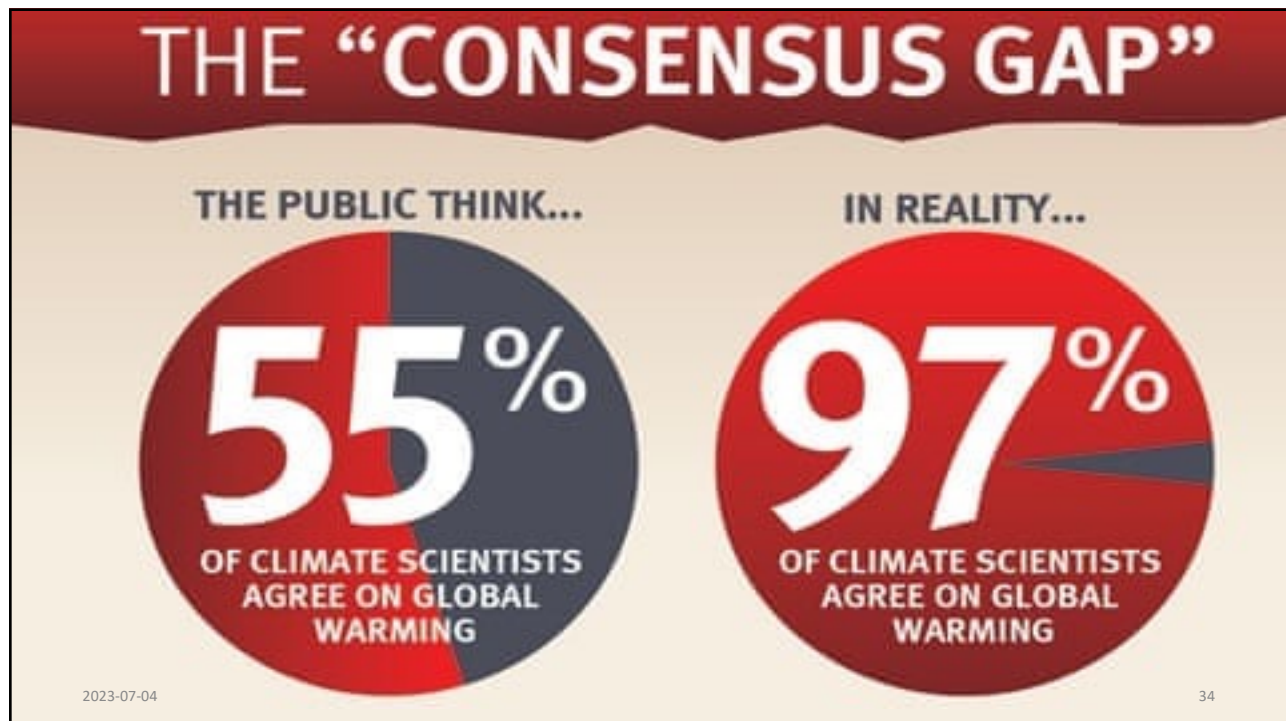
Lack of Understanding Of Science

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

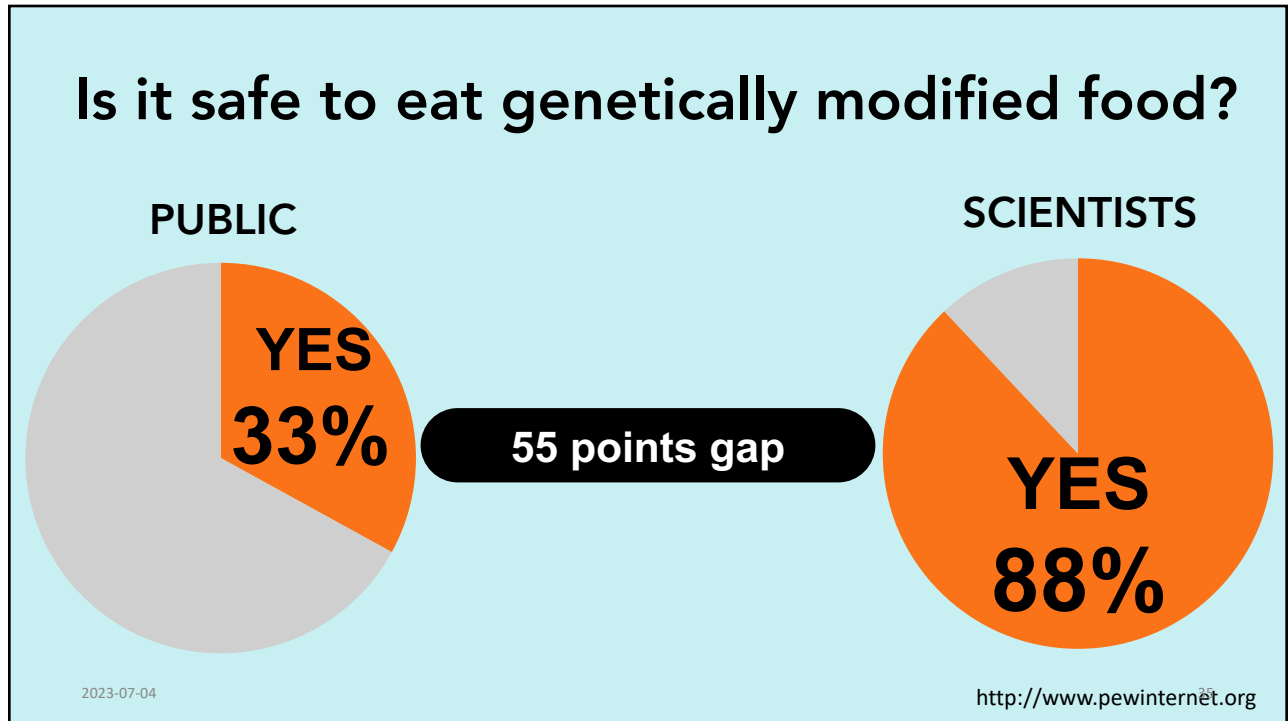
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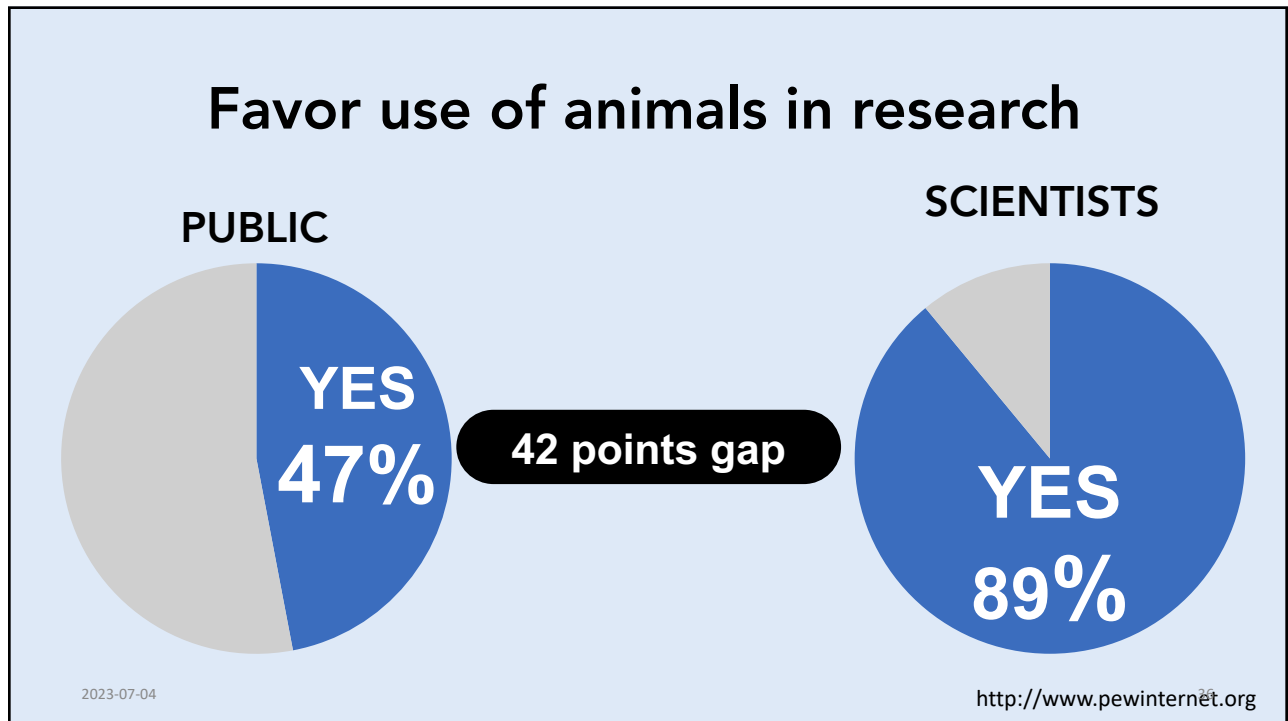
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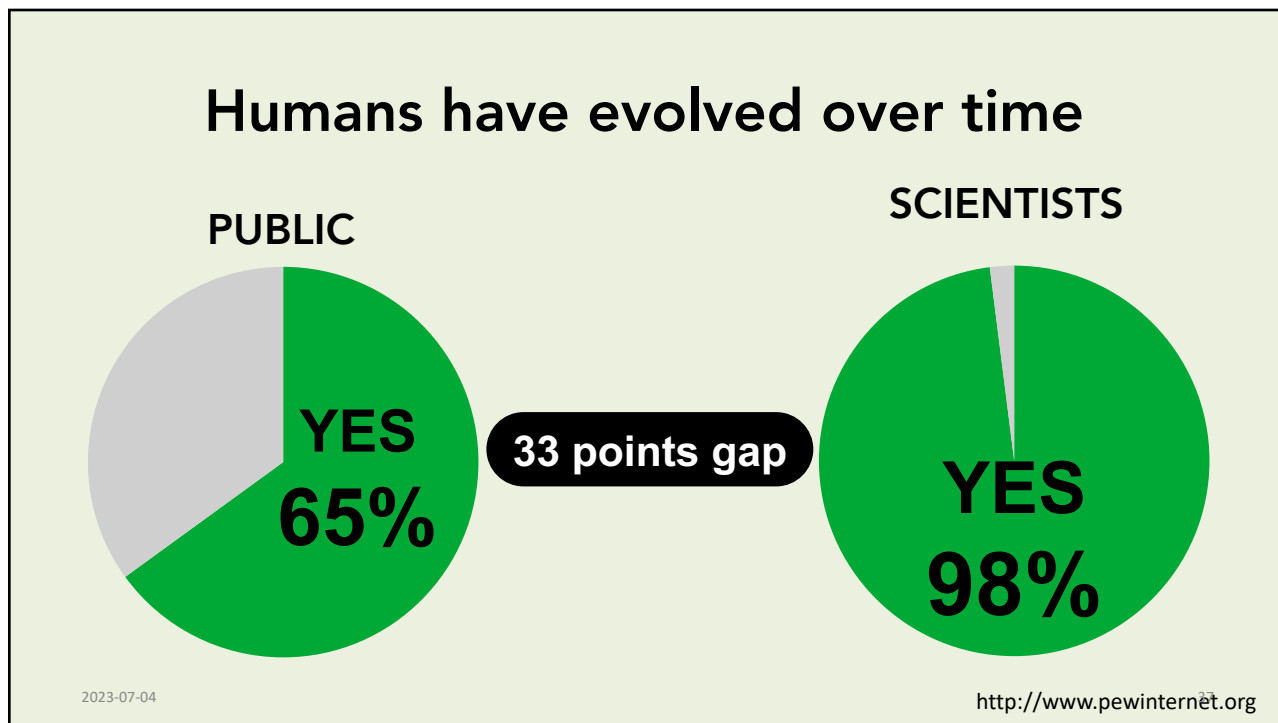
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The Importance of Being Science Advocates

Declining Levels of Trust Threaten Public Support for Science

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

Research is funded with money from the taxpayer

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

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"Speaking up for the importance of science to society is our only hope..."

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Leshner, A. I. Bridging the opinion gap. *Science* 347, 459, doi:10.1126/science.aaa7477 (2015).

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Be Responsible

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<https://www.the-scientist.com>

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Number 1 Responsibility: **HONESTY**



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Whatever path you follow, the summer research at the FoMD will make a true and lasting impact in your future



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