



NLIT '24
SUMMIT
A StoryLAB@PNNL Workshop

Getting ready to tell Your Story

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PNNL is operated by Battelle for the U.S. Department of Energy



THE CHALLENGE:

Scientists and Engineers need to convey information that their audiences may not be prepared to receive.



Communicate across professional boundaries



Converse with those who have a limited scientific background



Explain complex ideas simply and succinctly

THE SOLUTION:

storyLAB
@PNNL



A vehicle for sharing the excitement of scientific discovery and innovation

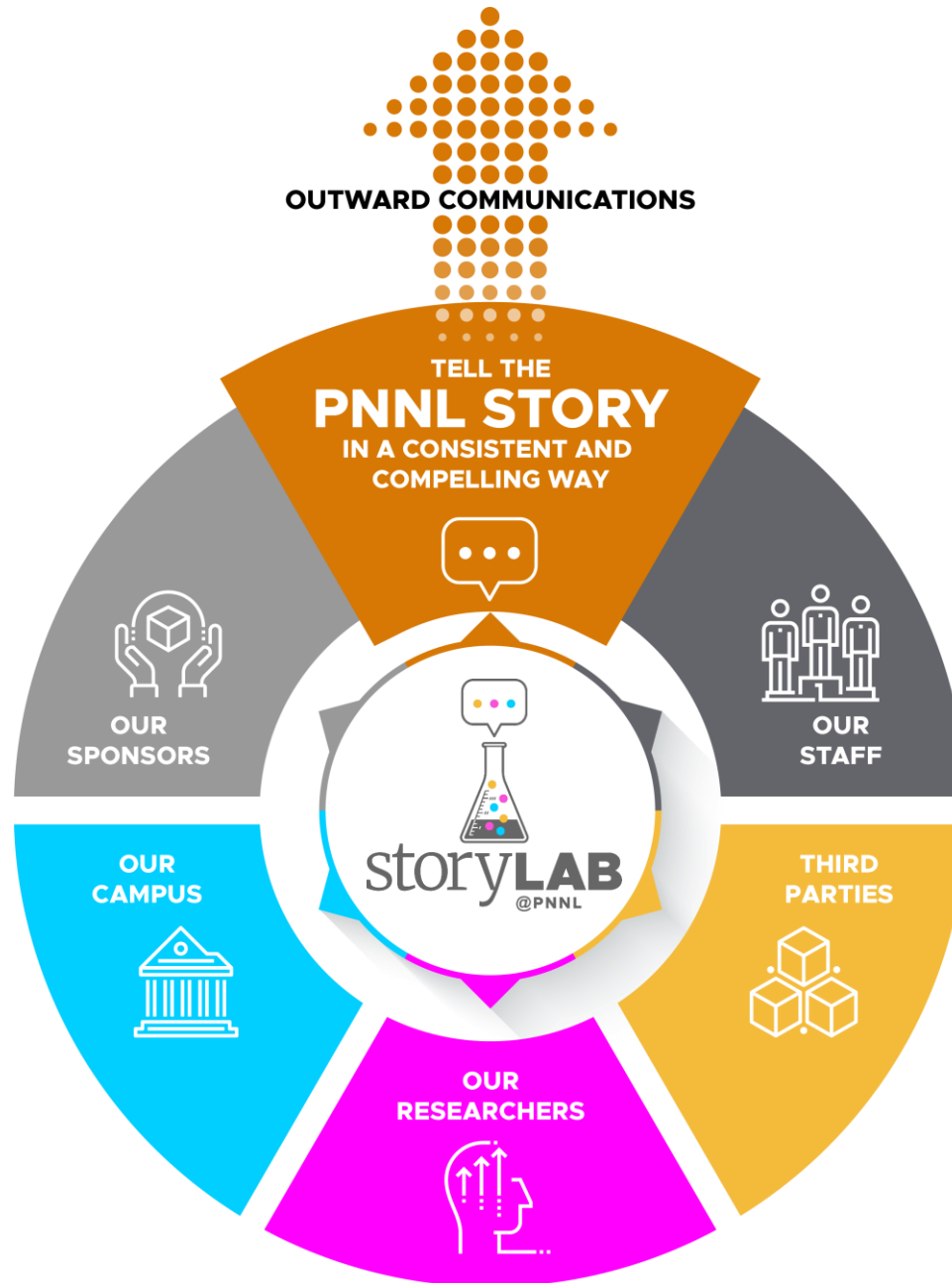


A training program to help PNNL staff sharpen their storytelling and communications skills



A tool to move PNNL's research impact stories out of the lab and into the world

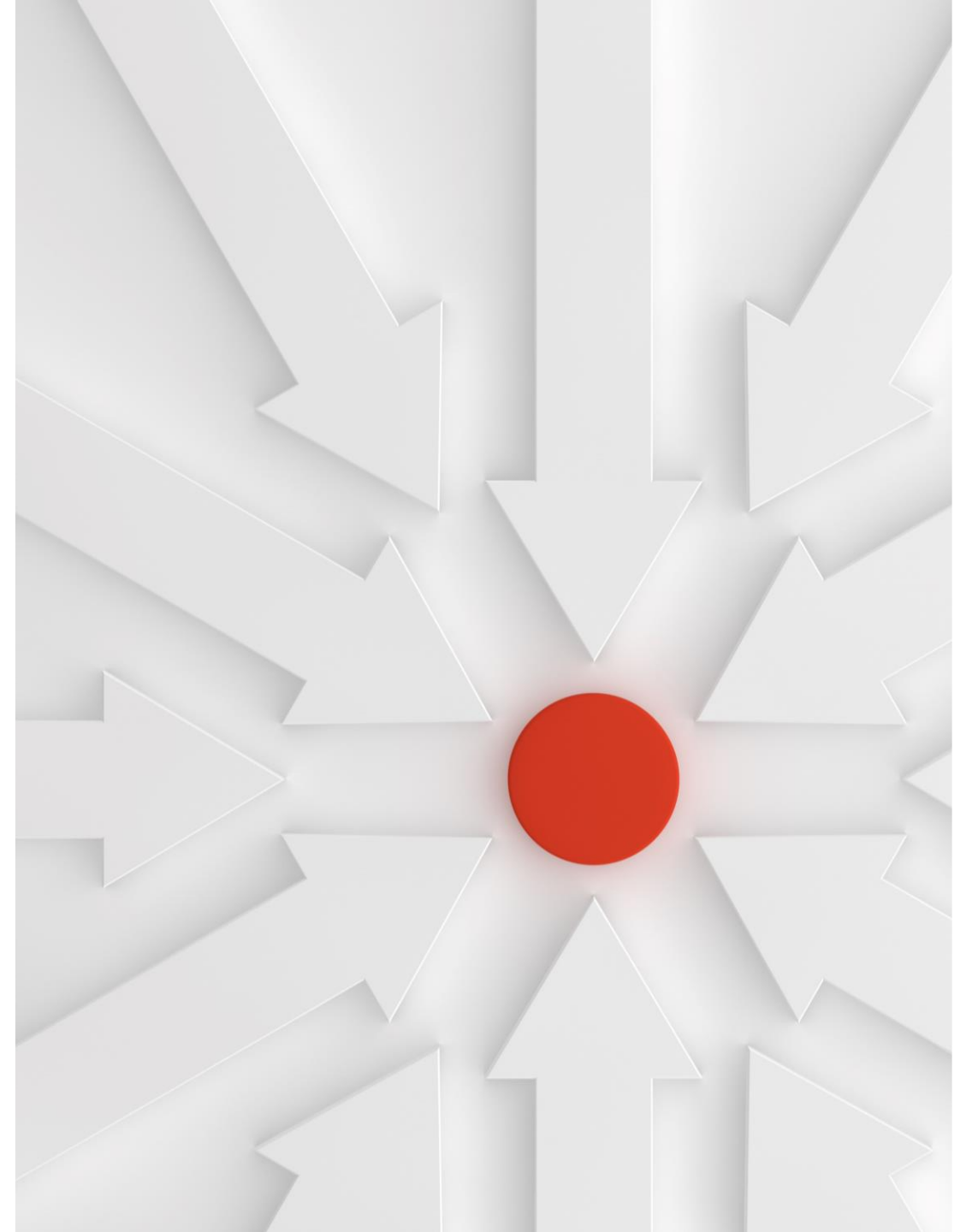
We need to
tell powerful,
consistent
stories about
PNNL to
audiences
inside and
outside the
laboratory



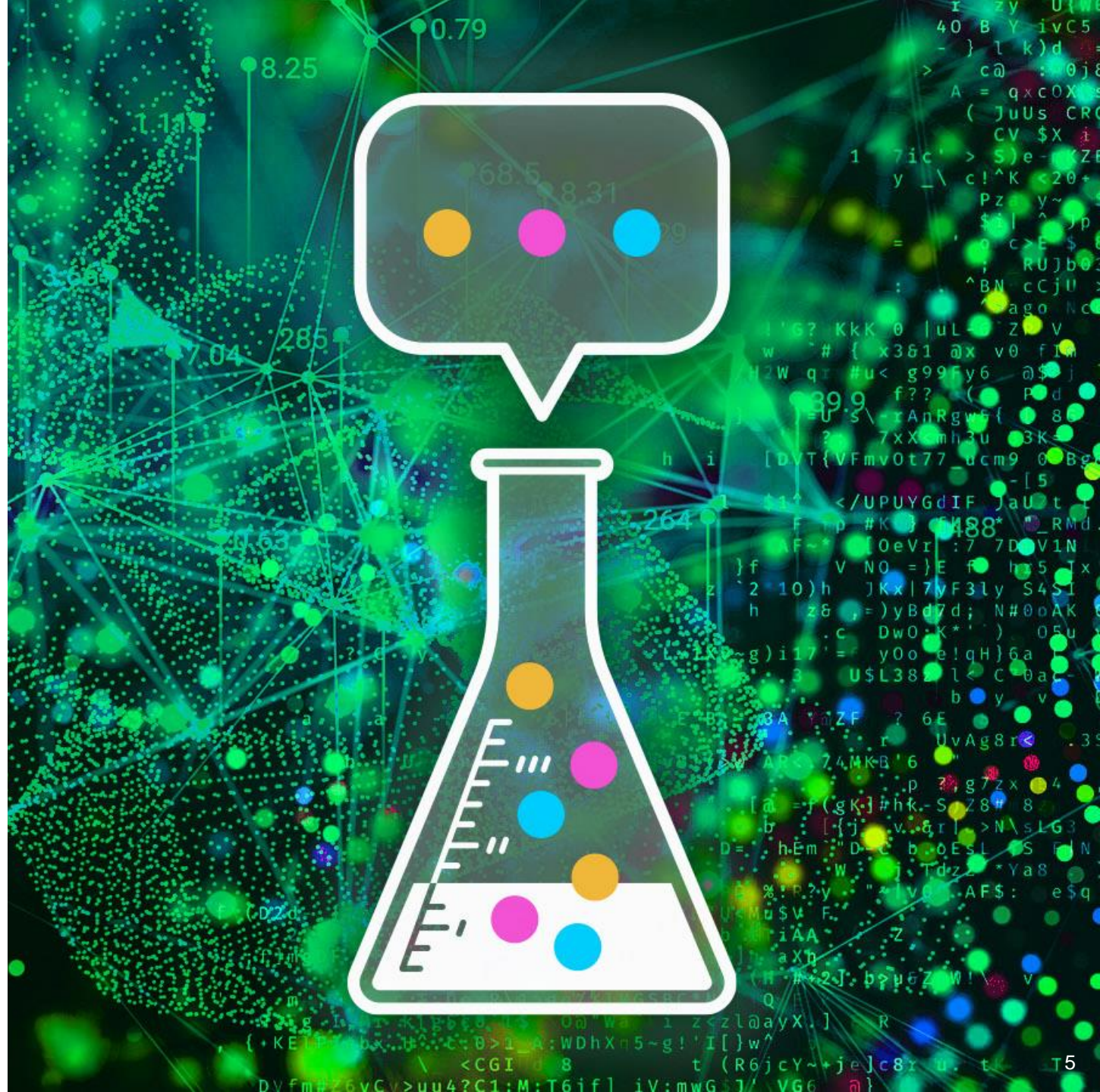
We have a
deep bench of
potential PNNL
storytellers:
**OUR RESEARCH
STAFF**

Target outcomes for this workshop

1. **Set the stage** for your message
2. **Know** the audience
3. **Consider** the format and purpose
 - Pitch (1- to 2-minute story)
 - Flash talk
 - Technical talk
4. **Create** a compelling framework
5. **Get tips and tools** for effective visual communication



What's the opportunity?





WHO ARE YOU?
WHERE ARE YOU
COMING FROM?

Your input, please

What brings you here today?

What is your main goal? Why do you need to tell stories?

Give better talks, posters, presentations

Communicate more effectively with peers, partners

Convince others of the value of your work

Part of a larger NLIT system of learning

Learn what others are doing well

Engage skeptical audiences

Other

Your input, please

What brings you here today?

Can you connect with your audience in a way that is accessible and excites them about your work?

Make this effort sustainable, expandable

May miss an opportunity

Need to convince others of the capability / methodology

Need to secure funding

Want to find key partners, contributors

Other



story**LAB**
@PNNL

WHO IS YOUR
AUDIENCE?
**WHY WOULD THEY
BE INTERESTED?**

Your input, please

What brings you here today?

Who are your key stakeholders?

Collaborators / partners

Funders / administrators

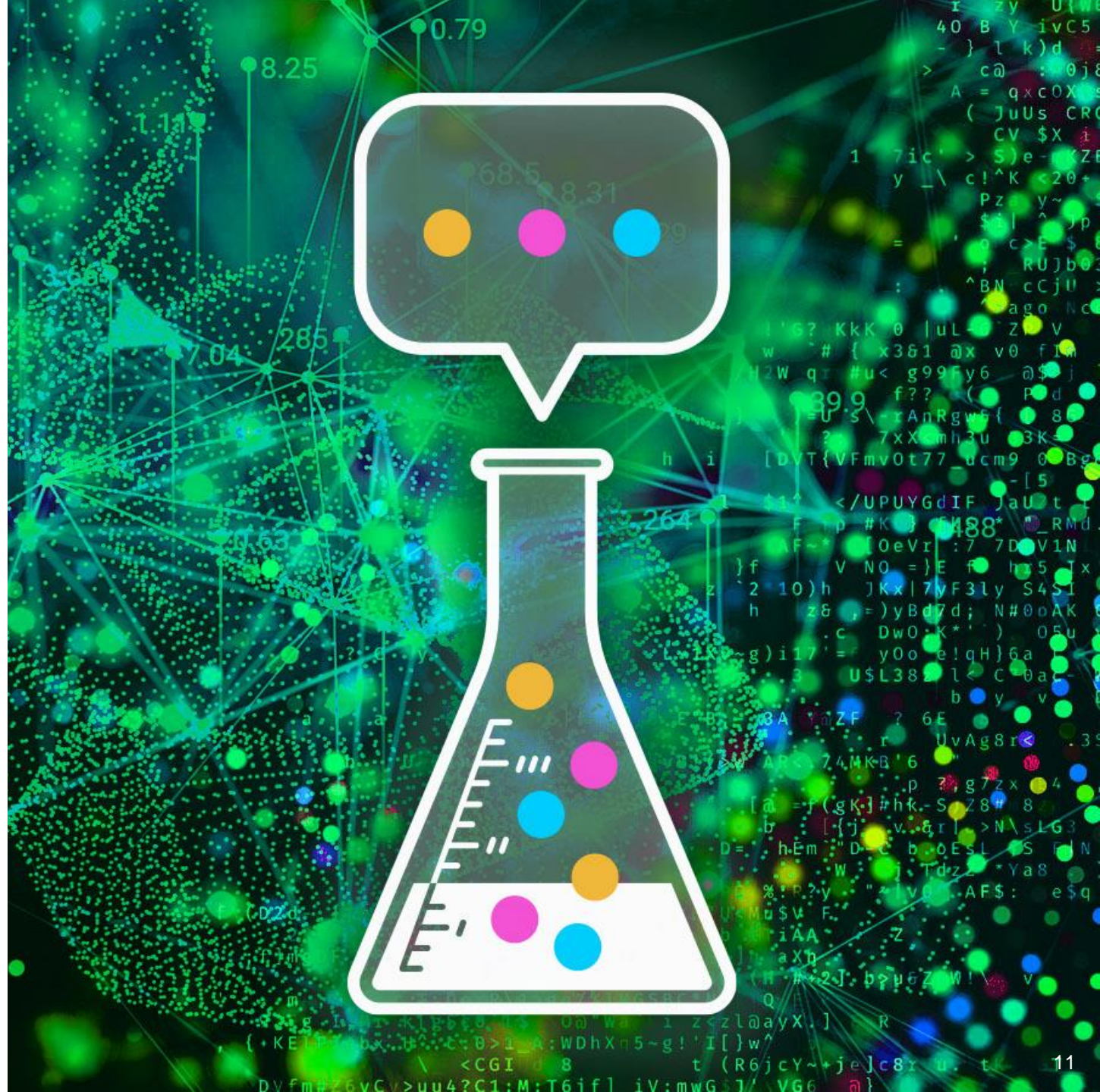
Leads of programs and projects

Decision makers / approvers

Other

What's the frequency, Kenneth?

Presentation formats and purpose



NLIT '24 presentation formats

Develop a story framework (1- to 2-minute pitch style)—a starting point for a technical or flash talk



One speaker
30 minutes
(20 + 10 Q&A)



One speaker
15 minutes
(10 + 5 Q&A)



All speakers
30 minutes

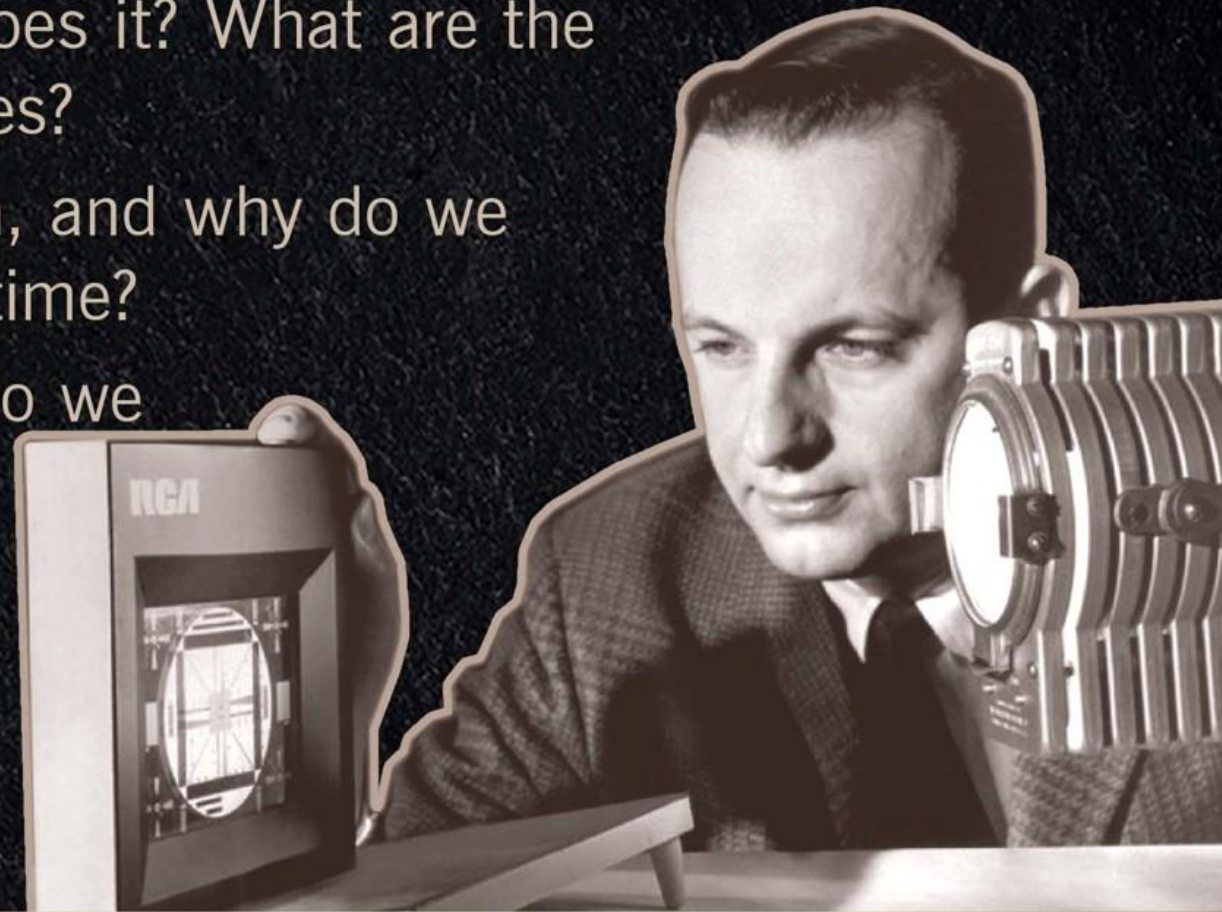


60-120 minutes



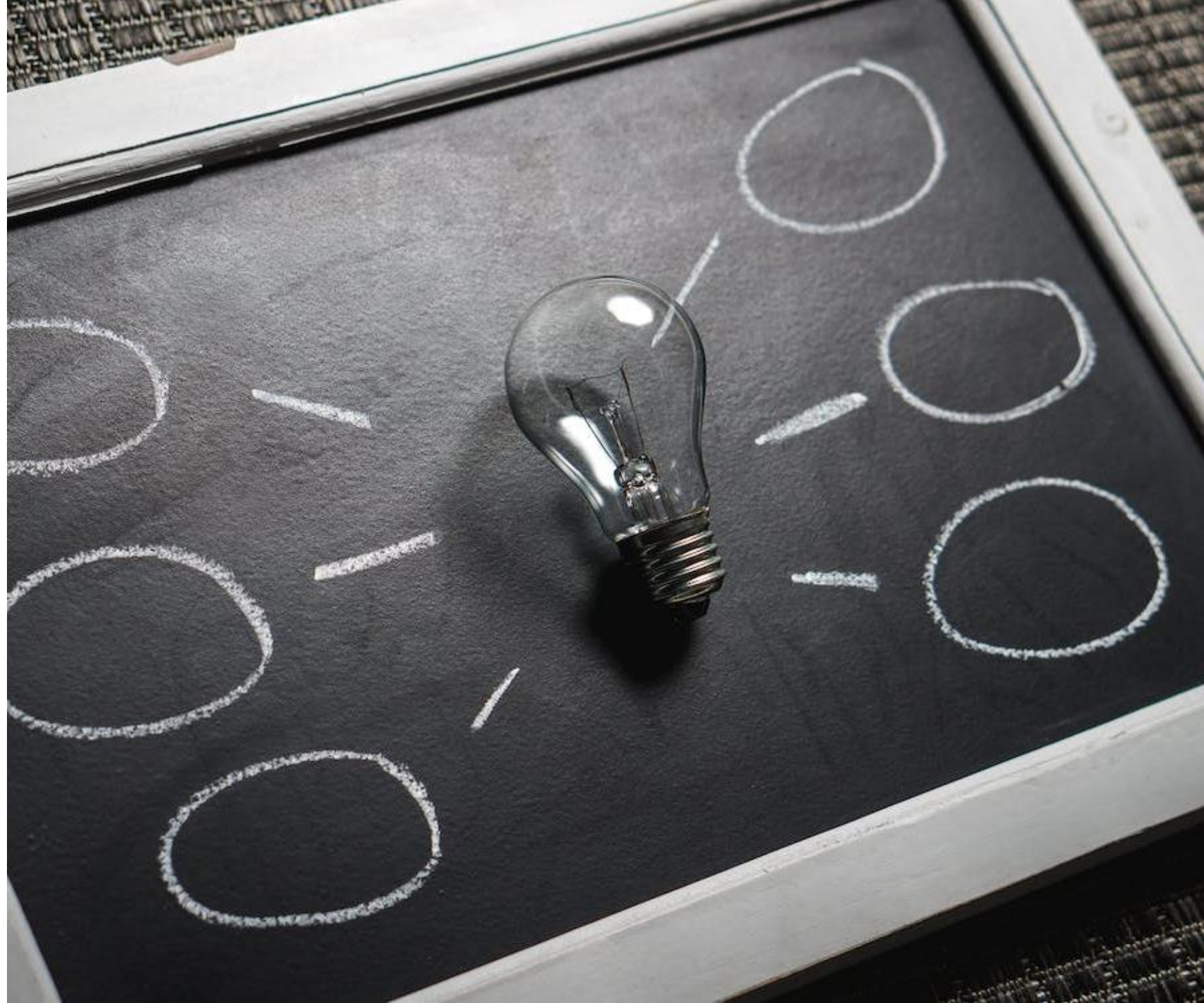
A few speakers
30 minutes

1. What are we trying to do?
2. How is it done today and who does it? What are the limitations of the present approaches?
3. What is new about our approach, and why do we think we can be successful at this time?
4. If we succeed, what difference do we think it will make?
5. How long do we think it will take, and what are our mid-term and final exams? How much will it cost?



George Heilmeier
DARPA Director 1975-1977

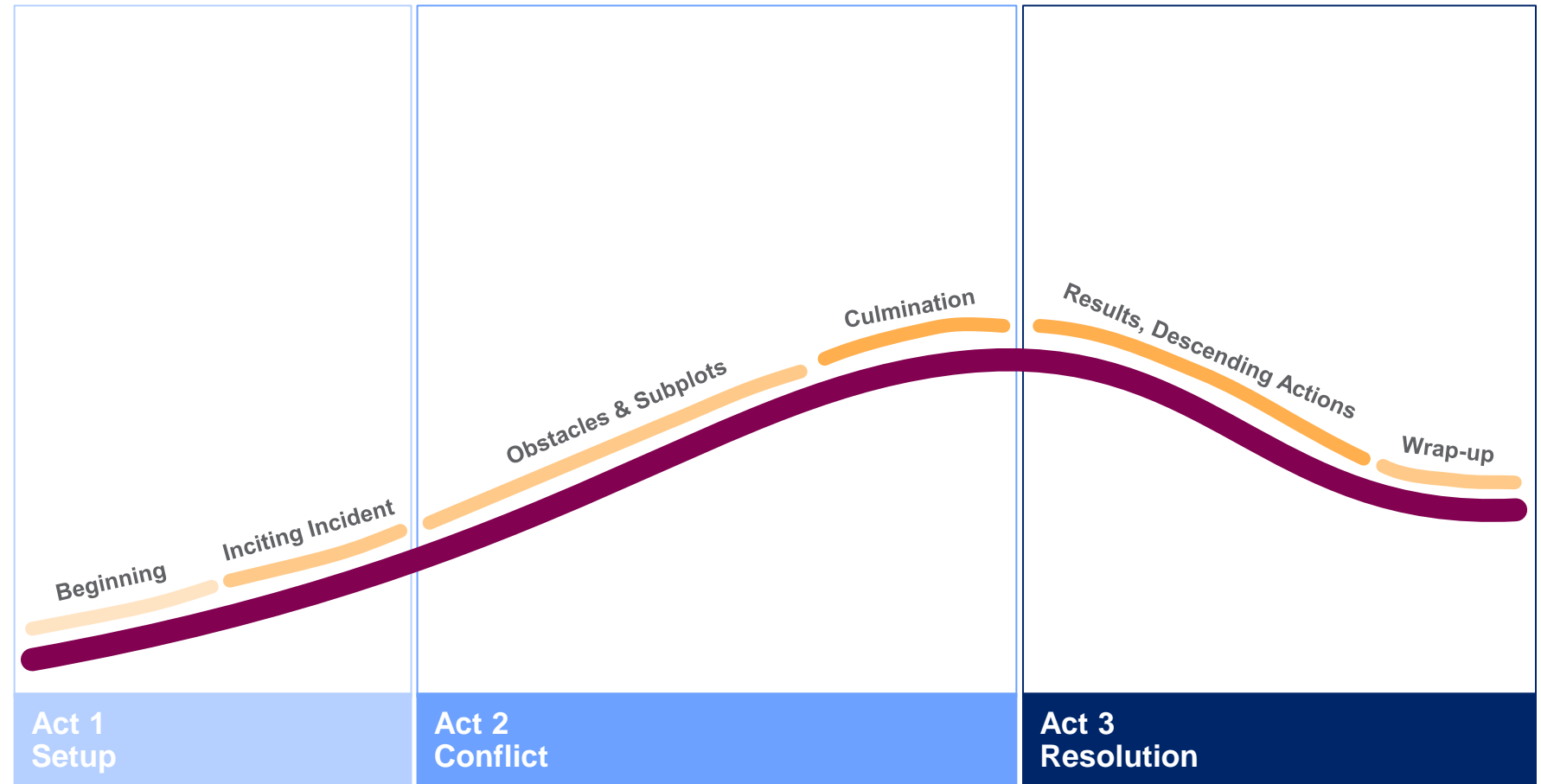
What's
your **one**
audience
takeaway?



Will your one audience takeaway be **memorable** by the end of your message?

You'll want them to get from A to B

- What journey can help your takeaway message stick?



Just getting started

Three approaches to
consider—choose one

(and don't cram in more)

Wonder

Imagine if you/we
could just...

Journey

It became clear we
needed to explore...

Cliffhanger

People think this is
as far as we can go
here. But is it really?

+ your story

What's the story?



STORY MAPPING

WHO IS
YOUR
AUDIENCE?

WHAT IS
YOUR GOAL
WITH
THEM?

WHAT
WOULD
EXCITE
THEM?

WHAT
CHALLENGES
DO YOU
FACE?

HOW WILL
YOU
ACHIEVE
YOUR GOAL?



STORY MAPPING: Apollo Space Program

Who is
your
audience?

The
American
people.

(others
watching:
the USSR,
the world)



What is
your goal
with them?

Convince the
public of U.S.
technological
superiority.

Earn the
opportunity to
put a man on
the moon and
bring him
back safely.



What would
excite
them?

Achieving
innovation
and mission
success in
an objective
so ambitious
it had never
been
attained.



What
challenges
do you face?

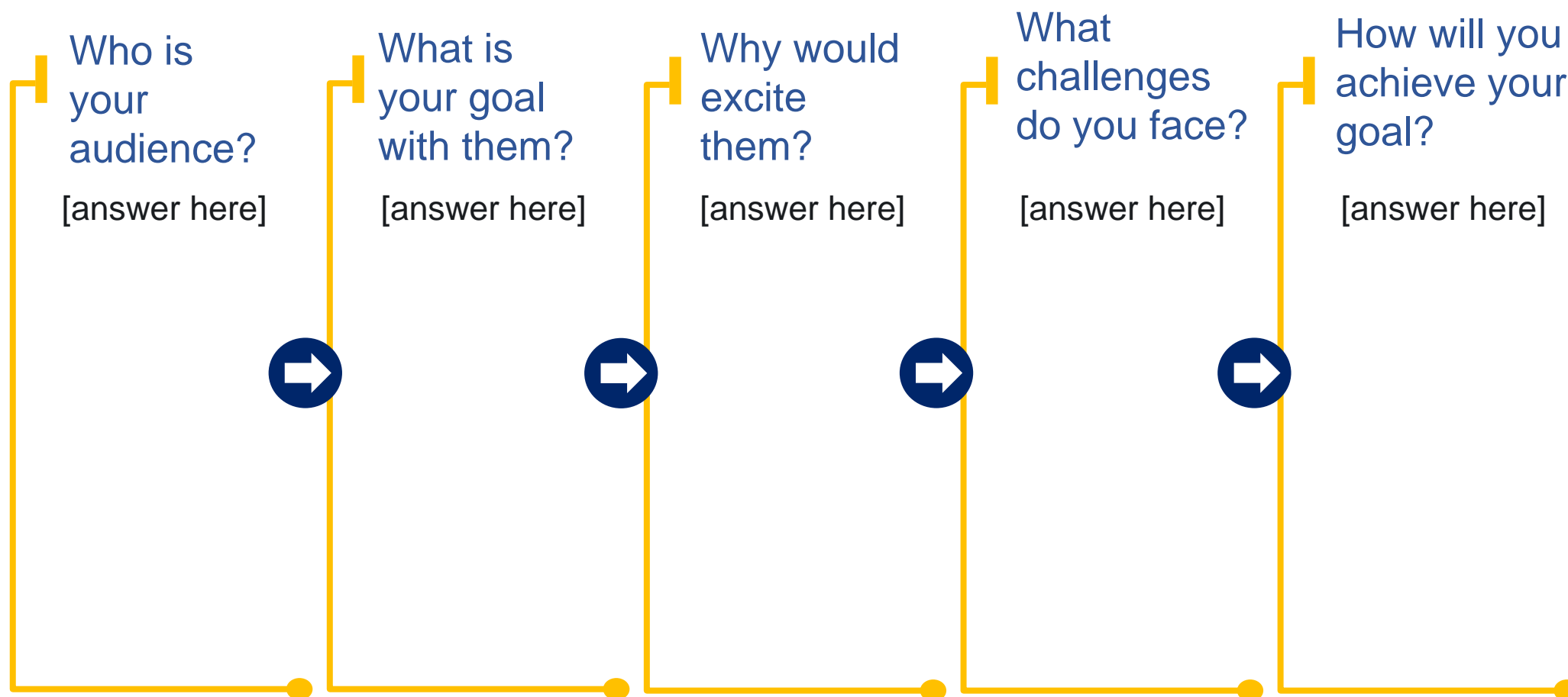
Convincing
the public
that this is a
feasible
goal, that
taxpayer
dollars
would be
used well in
reaching for
the moon.



How will you
achieve your
goal?

Massive
awareness and
motivation
campaign that
wins over hearts
and a commitment
of federal
resources
(funding, intellect,
a new federal
agency, etc.).

STORY MAPPING: [your subject matter]



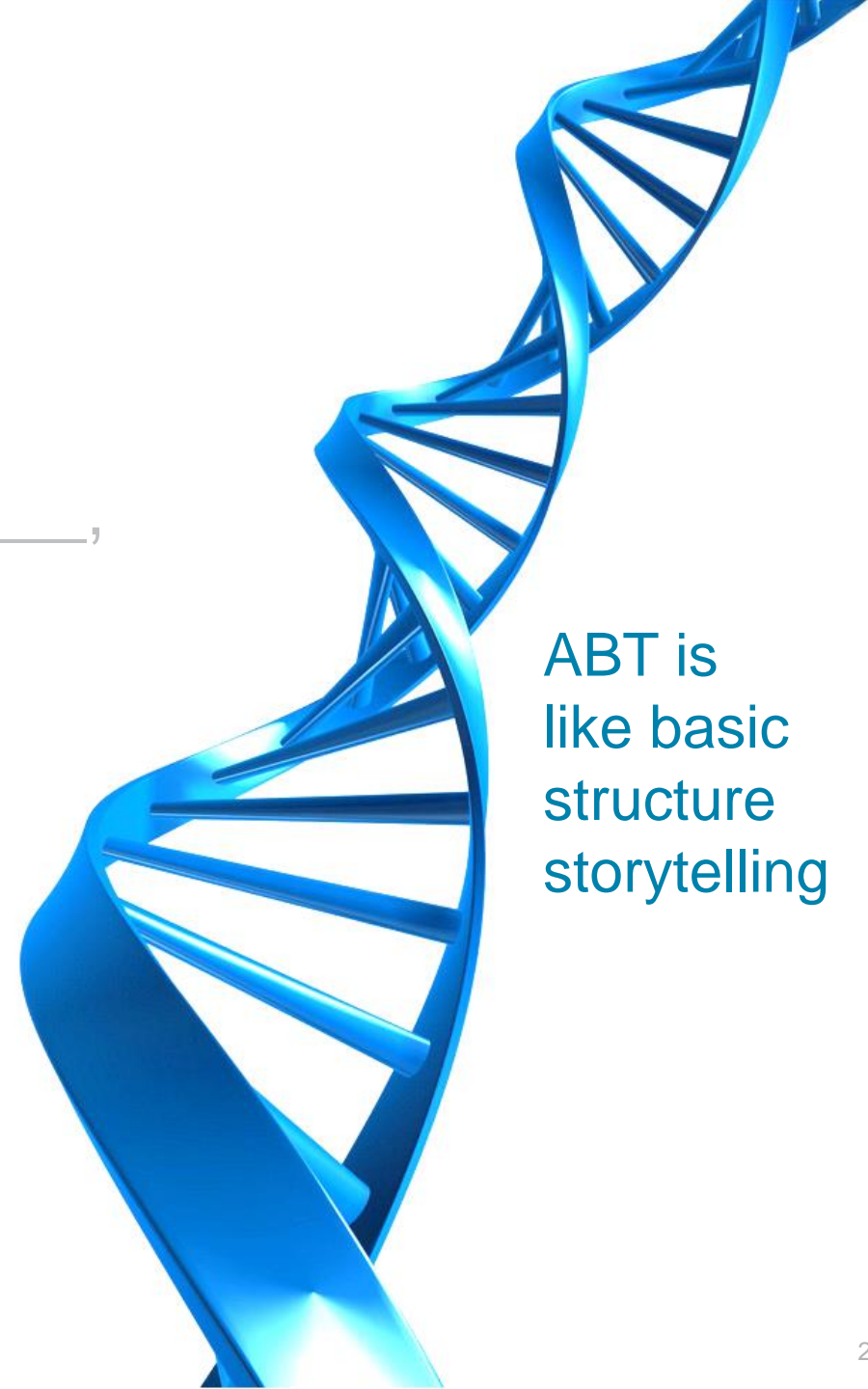
Story crafting: “ABT”

_____ AND _____,

BUT _____.

THEREFORE, _____.

ABT is
like basic
structure
storytelling



Story crafting: “ABT”

The USSR stunned the world
by launching Sputnik.

AND

We need to show the world that the
U.S. is not technologically inferior in
the space race by going to the moon.

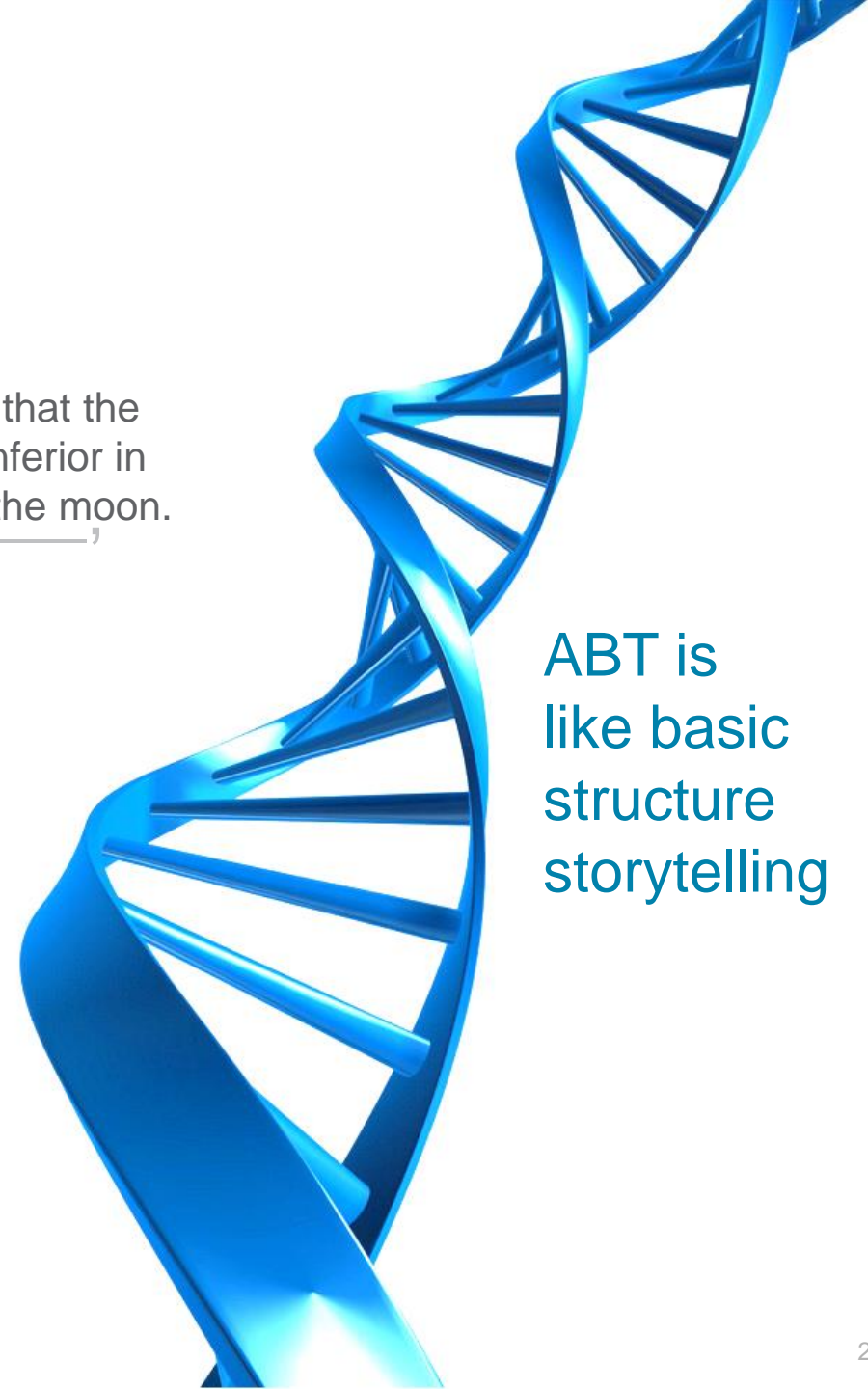
BUT

No one has ever attempted to go to the moon
— it’s very difficult challenge. And the world
is watching.

THEREFORE,

We intend to commit resources and
build up a federal agency dedicated
to achieving this goal.

ABT is
like basic
structure
storytelling



Building on your story

The USSR stunned the world by launching Sputnik **AND** We intended to show the world that the U.S. is not technologically inferior in the space race by going to the moon. The U.S. was caught off guard and there was great concern across the nation that the U.S. was losing the space race.

BUT No one had ever attempted to go to the moon, and it presented a very difficult challenge. While the world was watching, JFK's pledge to put a man on the moon was incredibly bold and risky.

THEREFORE, The U.S. proceeded to make a huge commitment of resources to achieve its goal. It invested \$20 billion in the Apollo program—\$236 billion in today's dollars—and the largest project ever undertaken by the U.S. government.



Facility and organization story crafting with “ABT”



We need to transform our energy systems to make them more resilient and sustainable **AND** we have promising science that is pointing the way to that future.

BUT we still face many challenges in fundamental sciences to lay a foundation for technologies to meet these future needs.

THEREFORE, we worked with DOE to build ESC to realize our vision of a clean energy future by accelerating the pace of progress in chemistry, materials science, energy storage, and quantum information sciences technologies.

Story crafting: “ABT”

[your text here]

[your text here]


_____ AND _____,

[your text here]

BUT _____.

[your text here]

THEREFORE, _____.



ABT is
like basic
structure
storytelling

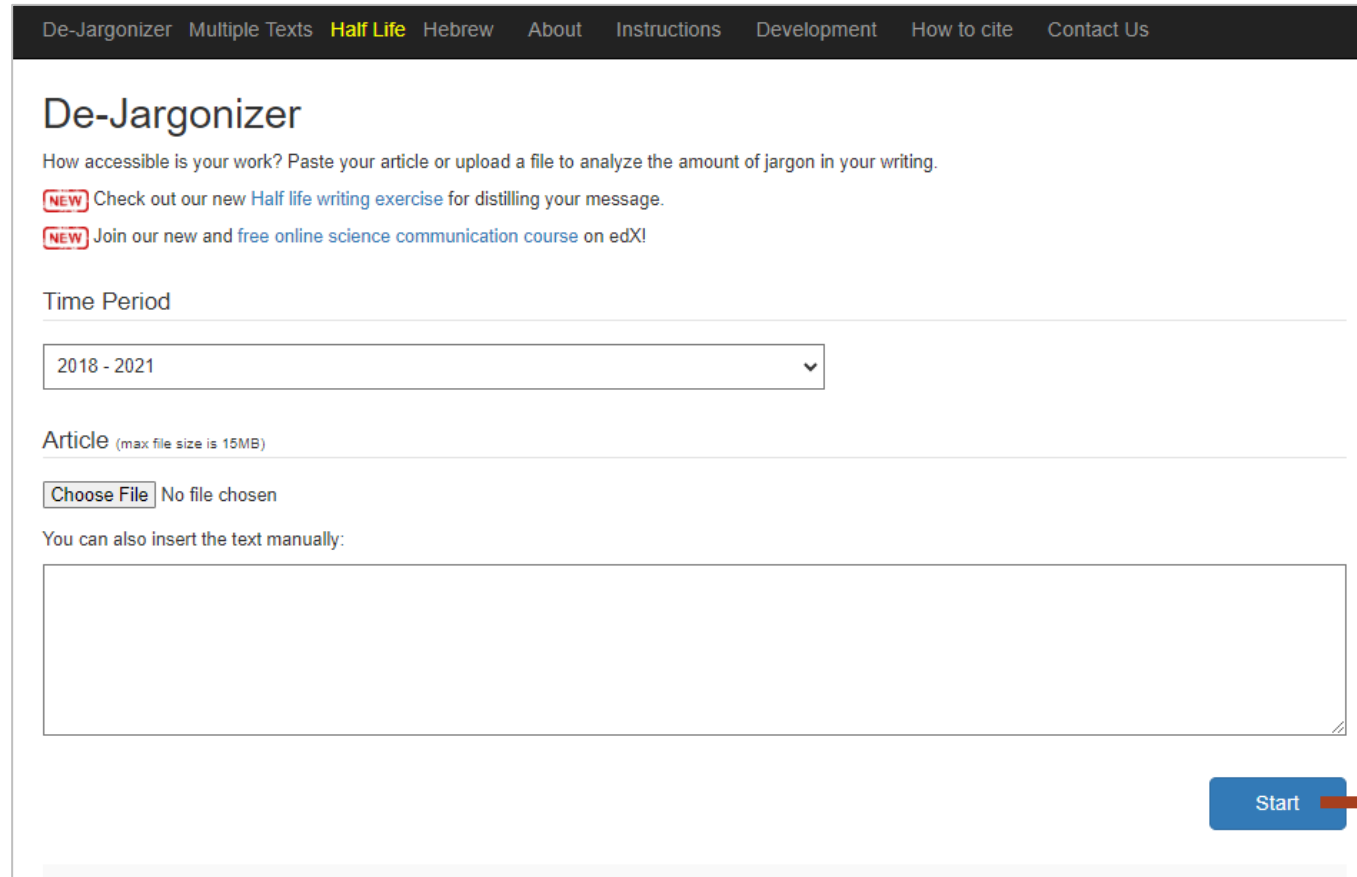


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**GET RID OF
JARGON**

Confirm your content is audience appropriate

1. Check your content through the free De-Jargonizer tool at **scienceandpublic.com**



De-Jargonizer Multiple Texts **Half Life** Hebrew About Instructions Development How to cite Contact Us

De-Jargonizer

How accessible is your work? Paste your article or upload a file to analyze the amount of jargon in your writing.

NEW Check out our new [Half life writing exercise](#) for distilling your message.

NEW Join our new and [free online science communication course](#) on edX!

Time Period

2018 - 2021

Article (max file size is 15MB)

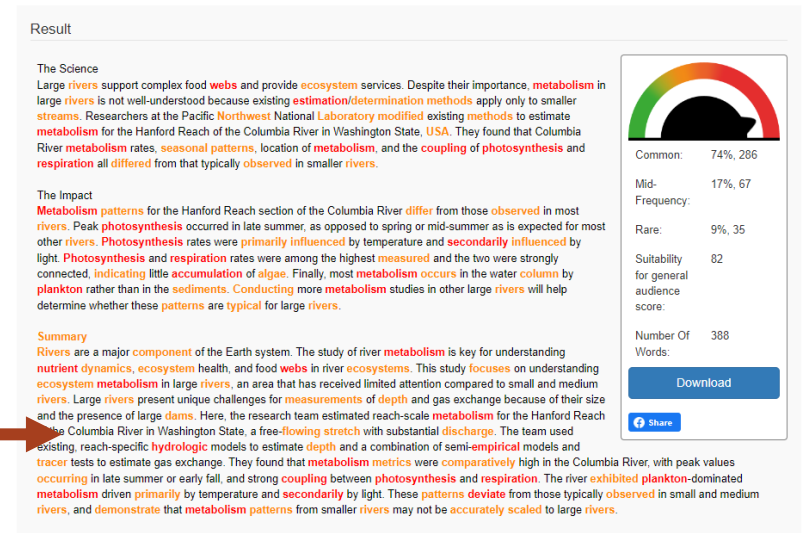
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You can also insert the text manually:

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2. Check your content through your organization's content review system.

(e.g. PNNL has Information Release and Declassification processes)



Result

The Science
Large rivers support complex food webs and provide ecosystem services. Despite their importance, metabolism in large rivers is not well-understood because existing estimation/determination methods apply only to smaller streams. Researchers at the Pacific Northwest National Laboratory modified existing methods to estimate metabolism for the Hanford Reach of the Columbia River in Washington State, USA. They found that Columbia River metabolism rates, seasonal patterns, location of metabolism, and the coupling of photosynthesis and respiration all differed from that typically observed in smaller rivers.

The Impact
Metabolism patterns for the Hanford Reach section of the Columbia River differ from those observed in most rivers. Peak photosynthesis occurred in late summer, as opposed to spring or mid-summer as is expected for most other rivers. Photosynthesis rates were primarily influenced by temperature and secondarily influenced by light. Photosynthesis and respiration rates were among the highest measured and the two were strongly connected, indicating little accumulation of algae. Finally, most metabolism occurs in the water column by plankton rather than in the sediments. Conducting more metabolism studies in other large rivers will help determine whether these patterns are typical for large rivers.

Summary
Rivers are a major component of the Earth system. The study of river metabolism is key for understanding nutrient dynamics, ecosystem health, and food webs in river ecosystems. This study focuses on understanding ecosystem metabolism in large rivers, an area that has received limited attention compared to small and medium rivers. Large rivers present unique challenges for measurements of depth and gas exchange because of their size and the presence of large dams. Here, the research team estimated reach-scale metabolism for the Hanford Reach of the Columbia River in Washington State, a free-flowing stretch with substantial discharge. The team used existing, reach-specific hydrologic models to estimate depth and a combination of semi-empirical models and tracer tests to estimate gas exchange. They found that metabolism metrics were comparatively high in the Columbia River, with peak values occurring in late summer or early fall, and strong coupling between photosynthesis and respiration. The river exhibited plankton-dominated metabolism driven primarily by temperature and secondarily by light. These patterns deviate from those typically observed in small and medium rivers, and demonstrate that metabolism patterns from smaller rivers may not be accurately scaled to large rivers.

Common: 74%, 286
Mid-Frequency: 17%, 67
Rare: 9%, 35
Suitability for general audience score: 82
Number Of Words: 388

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Visualize
the
story...



What's the conversation?

Story crafting

Consider the audience

collaborator
sponsor advisors
peers
manager
partner

Map out what they need
to hear and take away



Start to build your story



**Practice,
practice,
practice**



Feedback session

Last week
of March?





**Questions
for us?**



**Pacific
Northwest**
NATIONAL LABORATORY

CONTACT US!



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