

NSF CI COMPASS WEBINAR

Leadership in STEM Professions

Strategies to achieve "disciplined interdisciplinarity" (Barton, 2001)

Amy Koerber, Ph.D.

Senior Associate Dean for Administrative & Academic Affairs

College of Media & Communication, Texas Tech University



Why does this matter?

*Complex problems require that we work and think
across disciplinary boundaries*

Starting with a story

The power of thinking across disciplinary boundaries

- ***Hormone***

1905: From Greek "to set in motion"

- **Origin**

Classical scholar conversing with scientist

- **Impact**

Genesis of endocrinology--> new paradigm for understanding women's health (and the human body more generally)



One hospital lowered its median
response time for heart attack from
93 minutes to 71 minutes.

"Communication and operational changes at hospitals, and within EMS systems, play key role in recent drop in the death rate from heart attacks."



Yale heart attack study:

- ☆ Most important recent improvements in heart attack care have involved communication--not medical advancements
 - ✓ mobile technologies to communicate with whole team simultaneously
 - ✓ paramedics perform ECG and send results to ER before patient arrives

Theatre and STEM

A conversation for World Theatre Day about theatre and science communication.

MARCH 27, 2021



An audio conversation

• • •

What is Science Theatre?

Architecture Tips

Commercial Architecture Posts

Trends in Architecture

HOW BUILDINGS AFFECT OUR HEALTH

By Tyler Kirk

January 10, 2024

Think Architecture understands that buildings have a noticeable impact on our health. As experts in the field, we understand the importance of healthy buildings and healthy architecture in improving the well-being of individuals and communities. This post explores how architecture can affect your health and why you need the right architect for healthy construction.

A close-up photograph of a person's hands, heavily coated in thick, brown, wet mud. The hands are positioned to shape a piece of pottery on a pottery wheel. The wheel is a circular, flat surface, also covered in the same brown mud. The background is a white, slightly textured surface, possibly a table or a large container, which has some mud splatters on it. The lighting is bright, highlighting the texture of the mud and the skin.

My experience?

*"Disciplined interdisciplinarity" doesn't just happen
because you put a lot of disciplines together;
it requires effective leadership.*

relevant leadership experience

2002–08

Assistant Professor in
TCR (English/Arts &
Sciences)

2014–17

Professor & Director of
TCR program
(English/Arts &
Sciences)

2019–25

Professor & Associate
Dean for Administration
& Finance (CoMC)

June 1, 2026

Beginning
appointment as Dean
of Arts & Sciences at
Texas Woman's
University

2008–14

Associate Professor in
TCR (English/Arts &
Sciences), Editor of
*Technical
Communication
Quarterly*

2017–19

Professor & Associate
Dean for Faculty
Success (CoMC)

2025

Professor & Senior Associate Dean
for Administrative & Academic
Affairs (CoMC)

timeline

THE PREDATORY PARADOX

ETHICS, POLITICS, AND PRACTICES
IN CONTEMPORARY SCHOLARLY
PUBLISHING

AMY KOERBER, JESSE C. STARKEY,
KARIN ARDON-DRYER, R. GLENN CUMMINS,
LYOMBE EKO, AND KERK F. KEE

HYSTERIA

TO

Hormones

Breast or

?



Contemporary Controversies in
Infant-Feeding Policy and Practice

relevant research experience

highlights:

- Science/health communication, focus on marginalized knowledge
- Three scholarly books
- 30+ peer-reviewed articles and chapters
- 2019–24: PI on NSF grant



**Diverse
Knowledge =
Better
Knowledge**

Feminist
standpoint theory
Strong objectivity

A few lessons I have learned...

- 1 Embracing paradox**
- 2 Leading with "passionate detachment"**
- 3 Seeing beauty in constraint**
- 4 Reconsidering impact**

LESSON #1

Embracing paradox

"contradictory yet inter-related elements that exist simultaneously and persist over time" (Smith & Lewis, 2011)

Industry trends favoring specialized skills over "soft" skills



2013

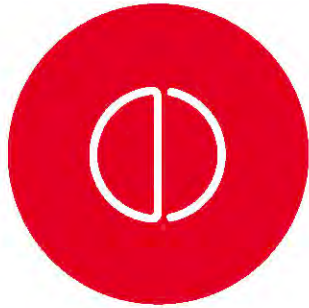
Survey showed that 27% of college graduates were in jobs directly related to their major.



2023

Similar survey showed that 46% of college graduates were in jobs directly related to their major.

BUT half life for specialized skills is declining



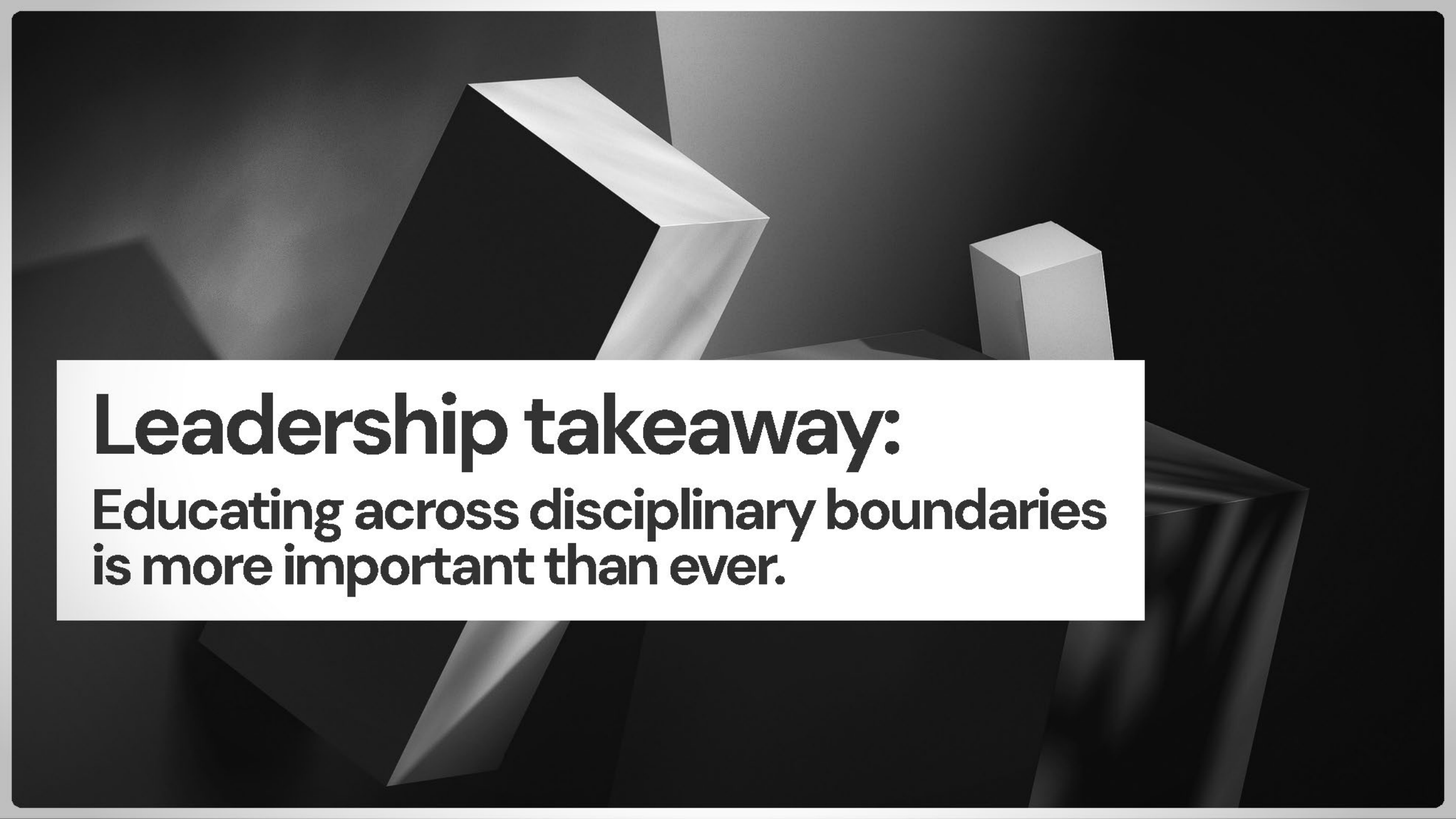
1980

Specialized skills half
life after graduation = 10
years



2030

Specialized skills half
after graduation < 2
years



Leadership takeaway:

**Educating across disciplinary boundaries
is more important than ever.**

LESSON #2

Leading with "passionate detachment"

"...only partial perspective promises objective vision"

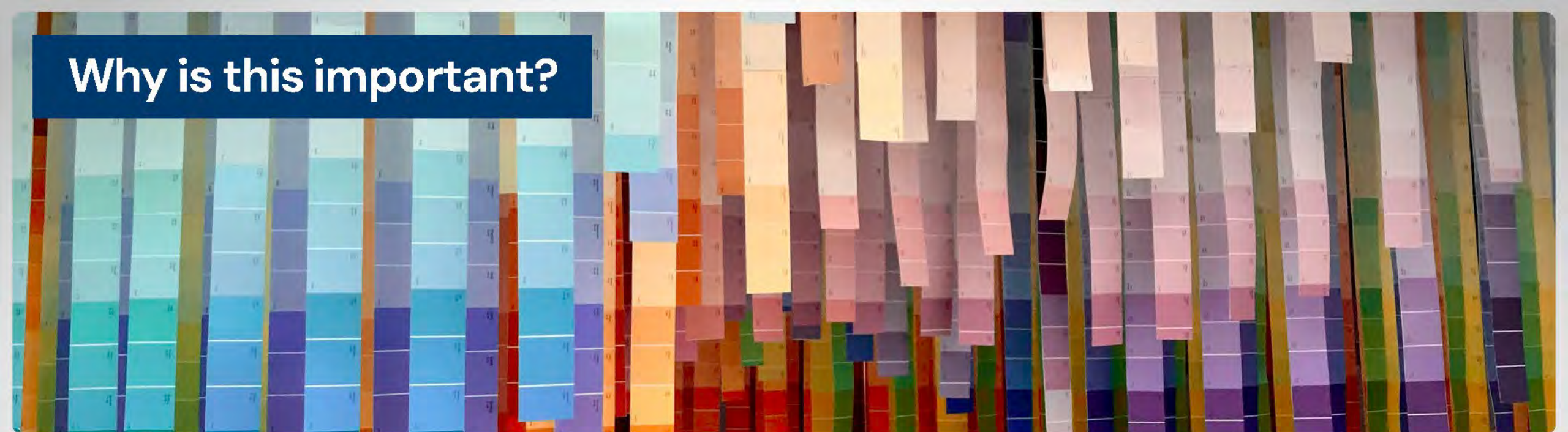
(Haraway, 1988)

Why is this important?



- **cost of ineffective listening:**

2021 survey of 400 companies with 100K+ employees --> \$62.4 million/year

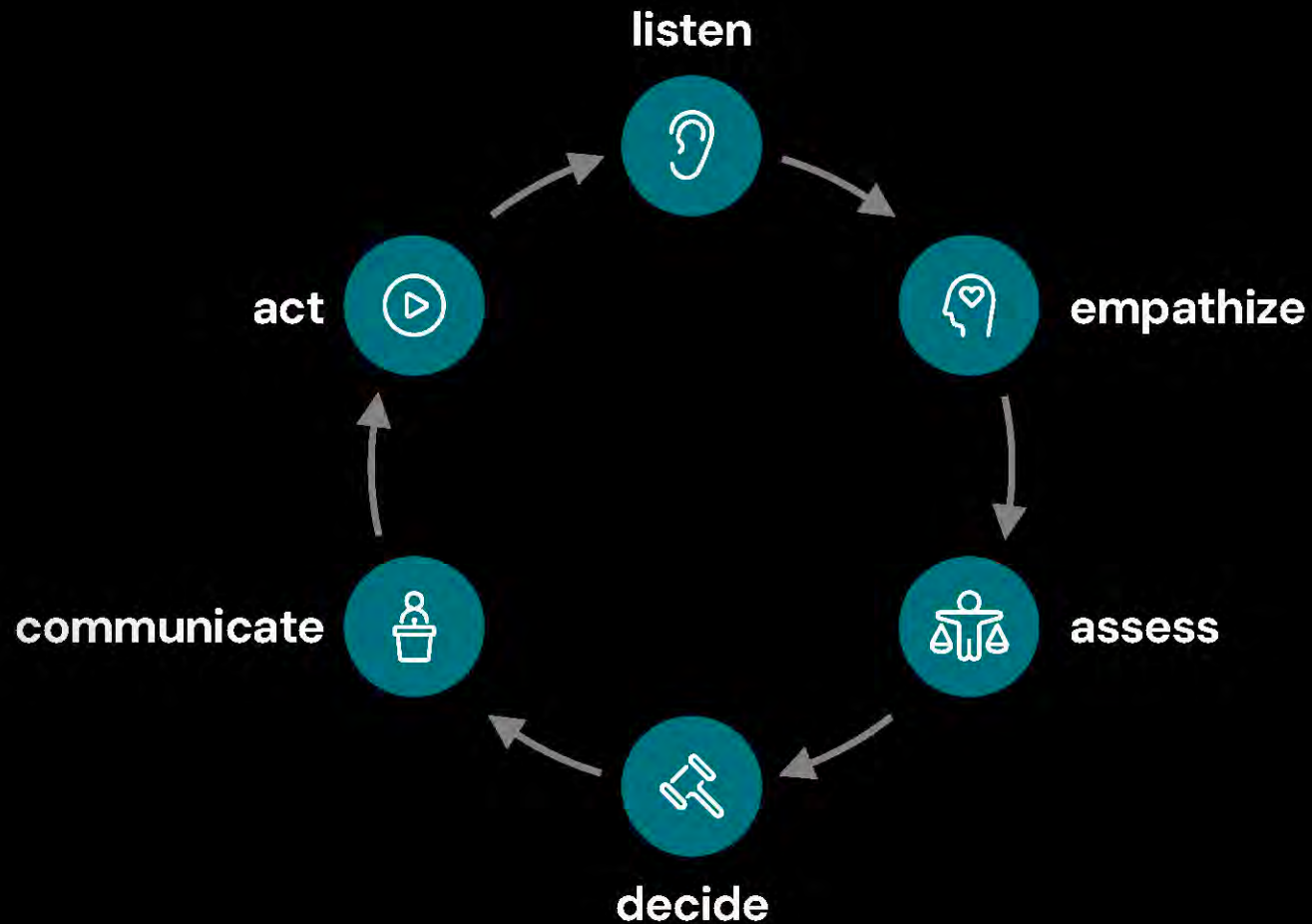


Why is this important?

- **listening fosters diverse and inclusive organizations:**

"Most leaders are natural talkers who thrive at casting vision, motivating the troops and presenting important data in an informative way, but the type of leaders needed to foster inclusivity are next-level listeners who know how to listen as well as they speak."
(*Forbes Magazine*, June 2024)

What does effective listening look like in leadership practice?



- **L**isten
- **E**mpathize
- **A**ssess
- **D**ecide

- **C**ommunicate
- **A**ct



Leadership takeaway:

**Diversity makes an organization excellent,
and specific forms of leadership
communication foster diversity.**

LESSON #3

Seeing beauty in constraint

moving from "we can't because..." to "we can if..."

(Morgan & Barden, 2015)

MONEYWATCH

More than half of college graduates are working in jobs that don't require degrees



By Megan Cerullo
Edited By Anne Marie Lee



"Enrollment cliff"

2021:

A million fewer students were enrolled in college in the U.S. than just before the pandemic

2025-29:

Number of college-bound students in the U.S. will decrease by 400,000

"Making the Bachelor's Degree More Valuable"

2023 report by Burning Glass Institute

- **expand skills and career planning**
Build on existing success through dedicated internships
- **break the B.A. into smaller, usable credentials**
Could include microcredentials and prior learning credit
- **consider alternative formats**
Accelerated bachelor's can incorporate professional experience
- **continually review curriculum to keep pace with industry**
"Skills translation": Need to ensure our vocabulary keeps pace with industry trends



B.A. Wage Premium

Some good news we can build on



B.A. Wage premium

25% premium within one year of graduation



degree versus experience

B.A. is worth more than four years' experience for a non-B.A. employee



skills matter

"The B.A.'s with the biggest wage premium have a mix of foundational and specialized skills."



Leadership takeaway:
Comfort zones are over-rated (and they are hard to come by anyway).

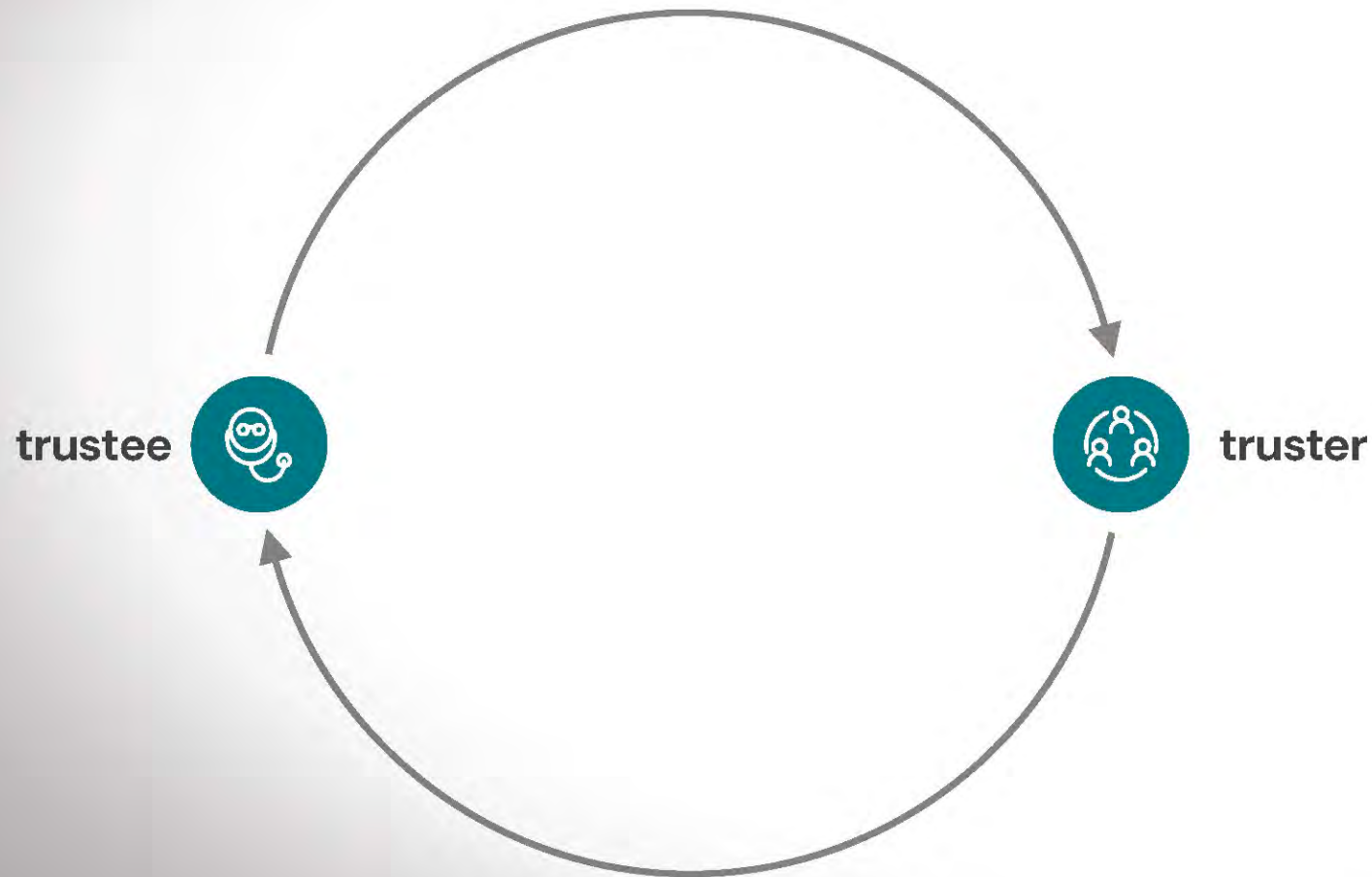
LESSON #4

Reconsidering impact

"consider...qualitative indicators of research impact, such as
influence on policy and practice"

(San Francisco Declaration on Research Assessment [DORA], 2012)

Loss of public trust in science (Deslatte, 2020; Nahum, Drekonja, & Alpern, 2021; Sisk & Baker, 2019)



- **trust as dynamic relationship**
 - Communication is central: where is the breakdown?
(Kjeldsen et al., 2022)

Impact-Genome/AP-NORC Poll

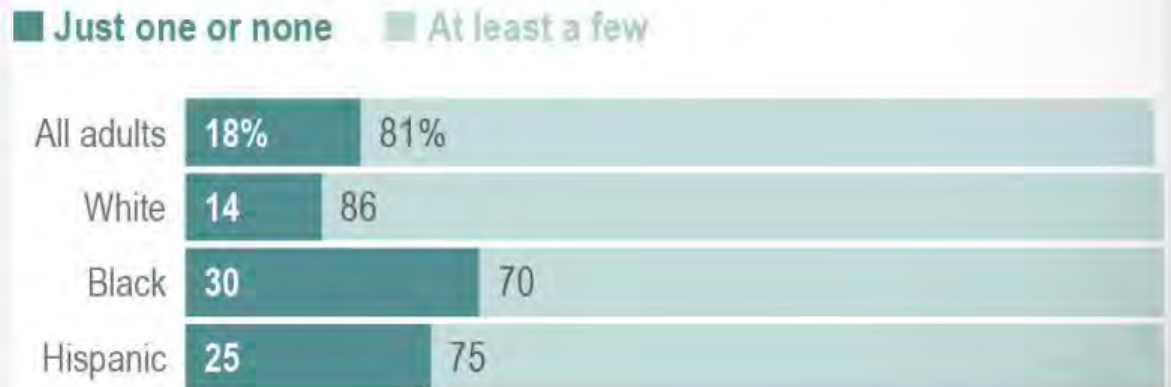
2021

- **declining trust in individuals**
 - US population: 18% have 0-1 people they trust
 - downward trend over last few decades

About 1 in 5 Americans have few people to trust for personal support

An Impact Genome/AP-NORC poll finds 18% of Americans say they have only one person or no one they can rely on for personal support. Black and Hispanic Americans are especially likely to say so.

If you needed personal support, how many trustworthy people outside of your household could you go to for help?



Results based on interviews with 2,314 U.S. adults conducted March 25–April 15. The margin of error is ± 2.9 percentage points for the full sample.

Source: AP-NORC Center for Public Affairs Research

Establishment Leaders Not Trusted to Tell Us the Truth

Percent who worry

GLOBAL 28  Significant change

63% 

Government leaders

61% 

Business leaders

64% 

Journalists and reporters

are purposely trying to mislead people by saying things they know are false or gross exaggerations

2024 Edelman Trust Barometer. © 2024 Edelman. All rights reserved. Data collected from 2024 Edelman Trust Barometer survey. For more information, visit www.edelman.com/trust. 

Dispersion of Authority: Peers on Par With Scientists

Percent trust

GLOBAL 26 Excl. China, Saudi Arabia

 Distrust (1-49)  Neutral (50-59)  Trust (60-100)

I trust each to tell me the truth about new innovations and technologies



2024 Edelman Trust Barometer. © 2024 Edelman. All rights reserved. Data collected from 2024 Edelman Trust Barometer survey. For more information, visit www.edelman.com/trust. 

Edelman Trust Barometer 2024:

Respondents trust their own peers as much as scientists for information on new innovations

Edelman Trust Barometer 2024:

42% of US respondents believe scientists do not know how to communicate with "people like me"

2024 Edelman Trust Barometer

P. 28

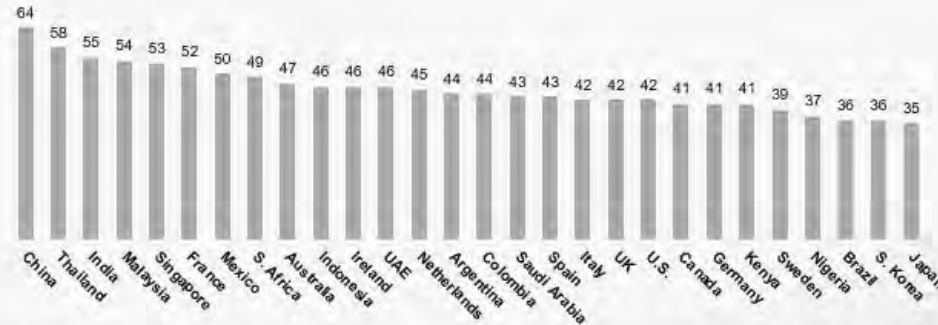
Make the Science Transparent and Accessible to the Public

Percent who agree

GLOBAL 28

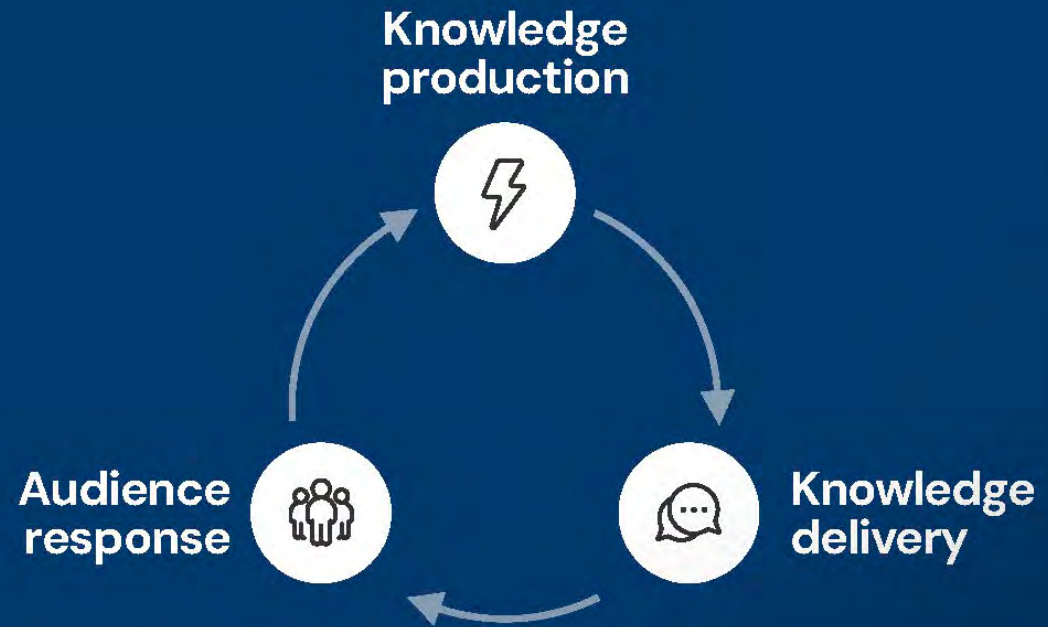
Scientists do not know how to
communicate with people like me

45%



how can we make better knowledge?

With information circulating more widely and quickly than ever before, scholars across the disciplines are realizing that effective delivery of scientific knowledge to diverse audiences cannot be separated from production of that knowledge.





Examples from my own research

Empowering women

First two books: *Breast or Bottle* and *From Hysteria to Hormones*

Scholars in the Global South

Third book: *Predatory Paradox*

Restoring trust in expertise

Current research on "scientific misinformation"

LOCAL NEWS

'It's been flying off the shelf,' Lubbock pharmacy sees more Vitamin A and Cod Liver Oil purchases amidst West Texas measles outbreak

by: [Julianna Washburn](#)

Posted: Mar 12, 2025 / 04:33 PM CDT



What can we do?

Community research: trust and "technocognition"
(Lewandosky, Ecker, & Cook, 2017)



Leadership takeaway:
We should never forget the larger
purpose of knowledge production.

The image features a dark, silhouetted mountain range in the foreground, with a bright, hazy sky in the background. The word "Questions?" is written in white, bold, sans-serif font on the right side of the image, positioned over the mountain silhouette.

Questions?