Designing, building & sustaining multicultural learning communities

Veronica S Smith, MS
University of Arizona Restruct Built Environment Research Symposium
December 12, 2019

data2insight

@data2insight @uarizona
#uofa   #ArizonaWildcats

the paradox of dualism

by veronica s. smith

101 stewart st. suite 200
seattle, wa. 98101
206 223 1361

abstract:

Women in architecture must continually struggle with the polarization of the profession and everyday life. This paradox is created by Western philosophy's imposed division of spiritual and material into nearly exclusive categories which led to the division of the architectural profession and construction industry in nineteenth century America. The applications of this philosophy, known as Cartesian dualism, prove particularly problematic for women professionals who must live and work within a system that favors the spiritual over the material, while also identifying the spiritual as a male realm. This hierarchy of spiritual over material, culture over nature, male over female does not exist in reality; and, women's life experiences have enabled them to understand better the connectedness and need for balance between these aspects of life.

An examination of the architectural profession's history in the United States reveals the far-reaching affects of dualism including the polarization of work and family, education and experience, architect and user. Interviews with contemporary architects and a survey of Arizona architects reveal that this mode of thinking continues to

century are still trying

and career in ways st

In order to begin

profession, women a

experiences are recog

the concept of archite

Critical evaluation of

will lead to new and

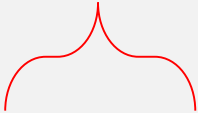# Career map

First business:
Skala

Digital signal processing & basic
biomedical informatics research

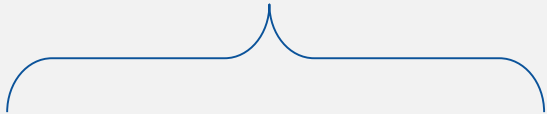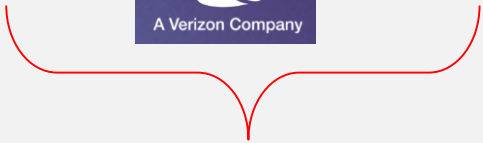**1991**   1995   2000   2005   2010   **2019**
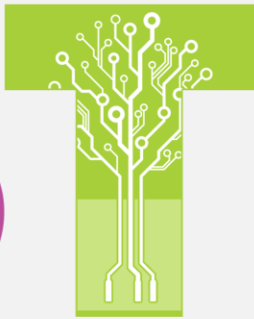
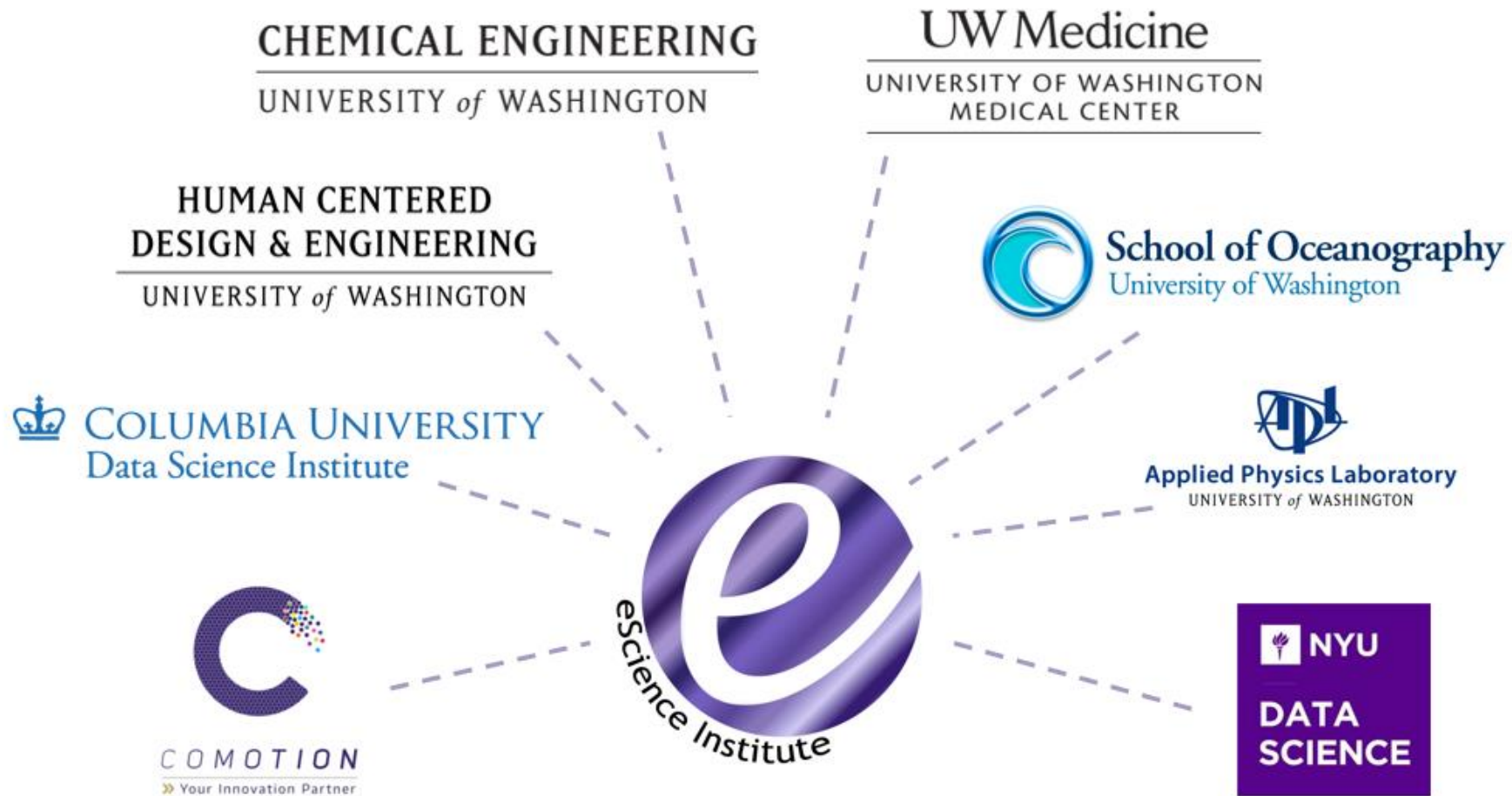Architecture   Human capital   Strategic
measurement,
evaluation &
culturally responsive
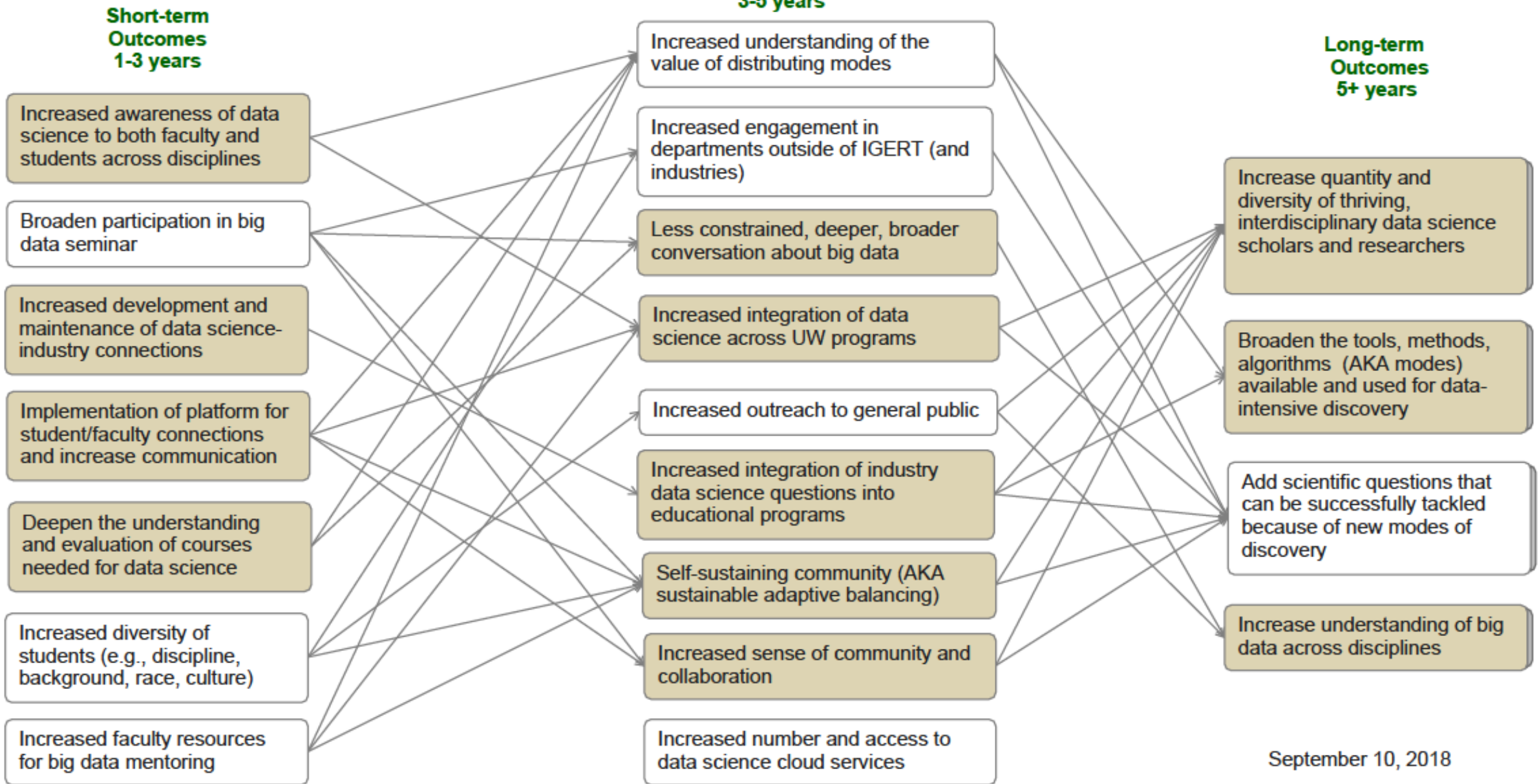team building

iSTEAMM

INQUIRY IS • SCIENCE • TECHNOLOGY • ENGINEERING • ART • MATH   MEDICINE

12345
678910

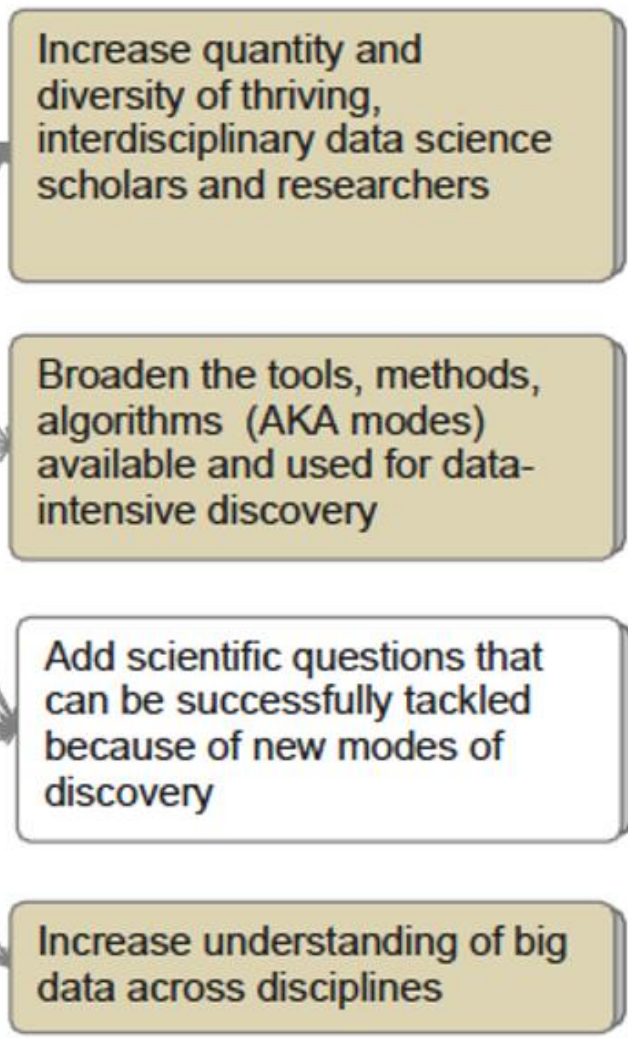# UW Data Science
PhD/Certificate Program

ED & TRAINING THEORY OF CHANGE

Short-term Outcomes 1-3 years

- Increased awareness of data science to both faculty and students across disciplines
- Broaden participation in big data seminar
- Increased development and maintenance of data science-industry connections
- Implementation of platform for student/faculty connections and increase communication
- Deepen the understanding and evaluation of courses needed for data science
- Increased diversity of students (e.g., discipline, background, race, culture)
- Increased faculty resources for big data mentoring

Intermediate Outcomes 3-5 years

- Increased understanding of the value of distributing modes
- Increased engagement in departments outside of IGERT (and industries)
- Less constrained, deeper, broader conversation about big data
- Increased integration of data science across UW programs
- Increased outreach to general public
- Increased integration of industry data science questions into educational programs
- Self-sustaining community (AKA sustainable adaptive balancing)
- Increased sense of community and collaboration
- Increased number and access to data science cloud services

Long-term Outcomes 5+ years

- Increase quantity and diversity of thriving, interdisciplinary data science scholars and researchers
- Broaden the tools, methods, algorithms (AKA modes) available and used for data-intensive discovery
- Add scientific questions that can be successfully tackled because of new modes of discovery
- Increase understanding of big data across disciplines
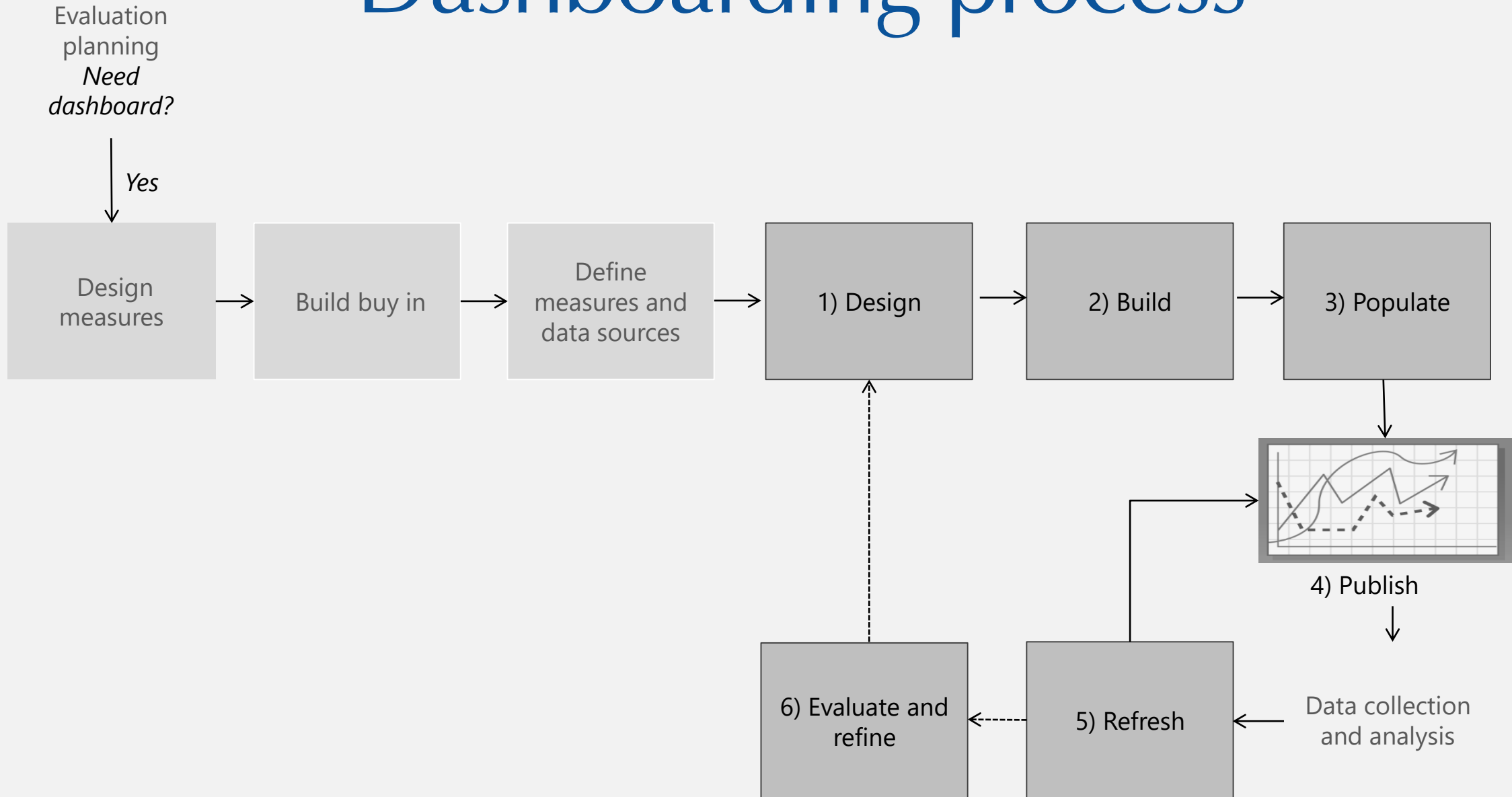
September 10, 2018

UCLA CTSI-Evaluation
Metrics for Monitoring Transformation & Performance

Y2 Progress Report

Pamela Davidson, PhD

CTSI-Evaluation Leader

Dashboarding process

Evaluation planning
Need dashboard?

Yes

Design measures → Build buy in → Define measures and data sources → 1) Design → 2) Build → 3) Populate

4) Publish

Data collection and analysis → 5) Refresh → 6) Evaluate and refine → 1) Design

Over 60% of hackers developed a high degree of knowledge and skill about data science tool use and water data science (n=44).*

- Data science tool use — 78.0%
- Water data science — 61.0%
- Data processing pipeline — 52.5%
- Programming — 43.9%
- Cloud computing — 29.3%
- Machine learning — 22.0%
- Statistics — 17.1%
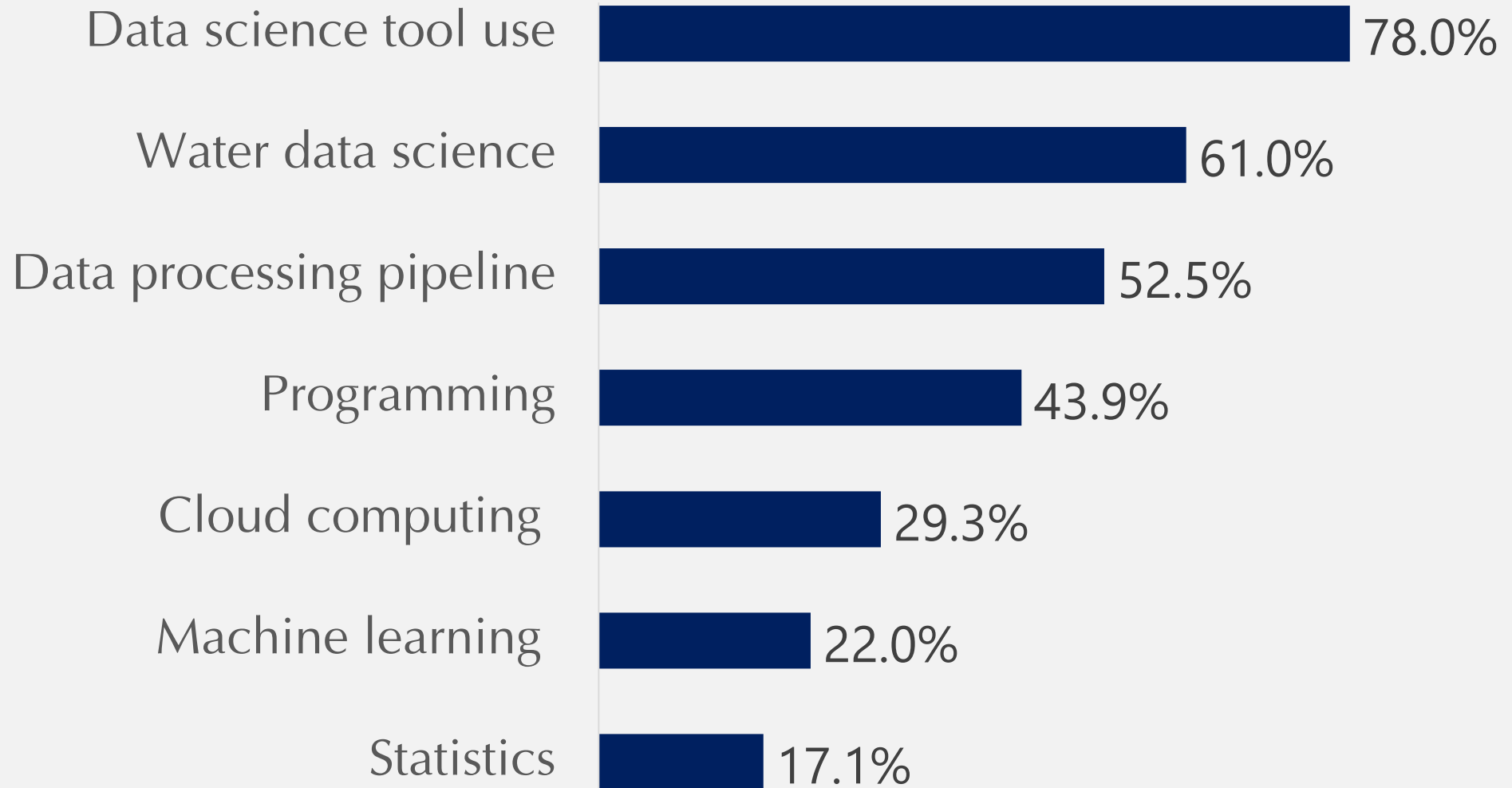
*Percentage of Waterhackweek survey respondents who indicated they learned a lot or an extraordinary amount about this topic during the week.(N=42)

Over 95% of hackers felt like they belonged, that their contributions were valued, and asked questions out of curiosity (n=42).*

I felt like I belonged	97.6%
I felt like my contributions were valued by my team	95.2%
I asked a question from a place of curiosity	95.1%
I listened to someone with a different perspective	68.3%
I spoke openly	59.6%
I disengaged from conversations	21.5%
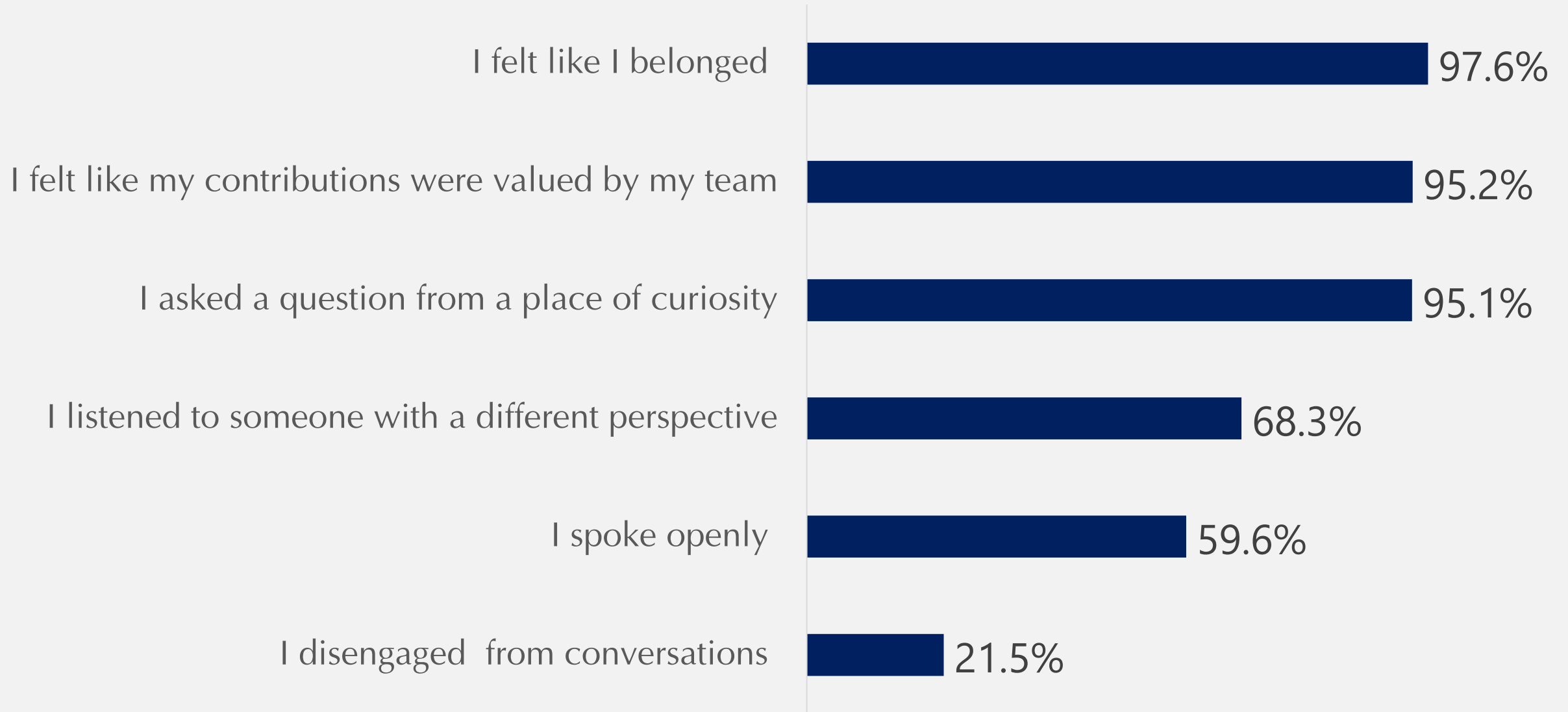
*Percentage of Waterhackweek survey respondents who indicated they somewhat agreed, agreed, or strongly agreed with the prompt. n=42)
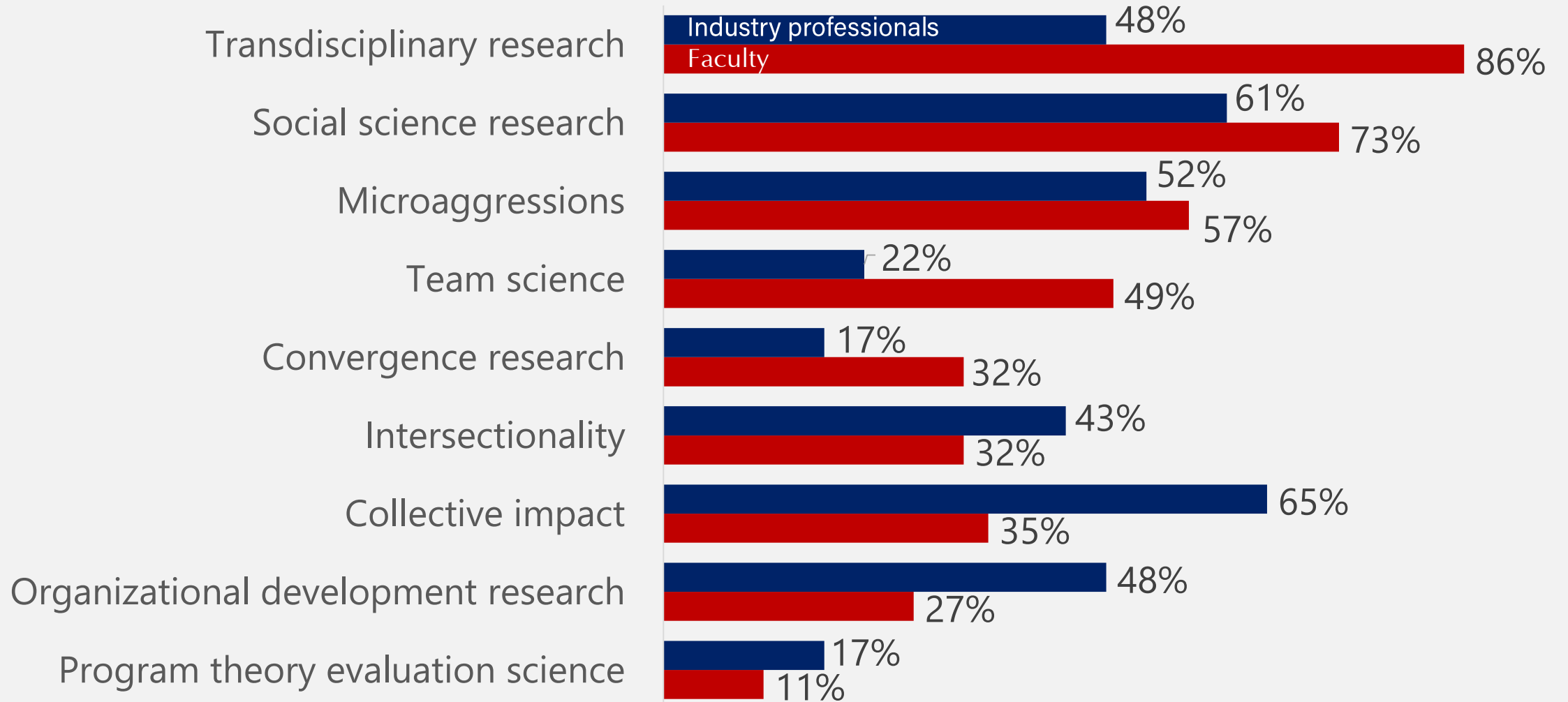
@data2insight @uofa @Arizona #restruct

What is multicultural team science?

Industry professionals (n=23) were most familiar with collective impact and faculty (n= 37) were most familiar with transdisciplinary research.

	Industry professionals	Faculty
Transdisciplinary research	48%	86%
Social science research	61%	73%
Microaggressions	52%	57%
Team science	22%	49%
Convergence research	17%	32%
Intersectionality	43%	32%
Collective impact	65%	35%
Organizational development research	48%	27%
Program theory evaluation science	17%	11%

multicultural

Intersectionality

The interconnected nature of social categorizations such as race, class, and gender as they apply to a given individual or group, create overlapping and interdependent systems of marginalization, discrimination, and privilege.

Intersectionality
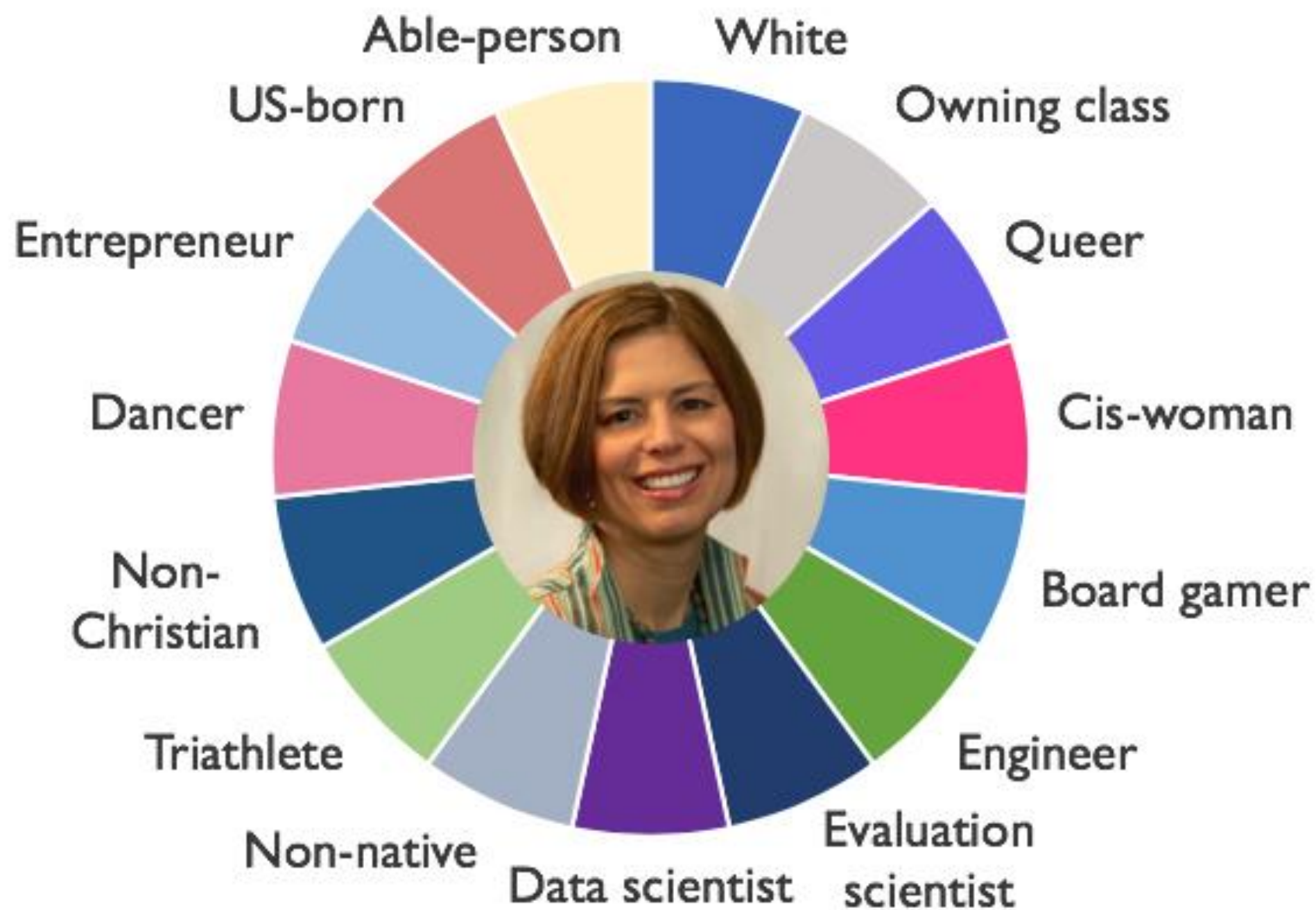
-Professor Kimberly Crenshaw

Social identity intersectionality
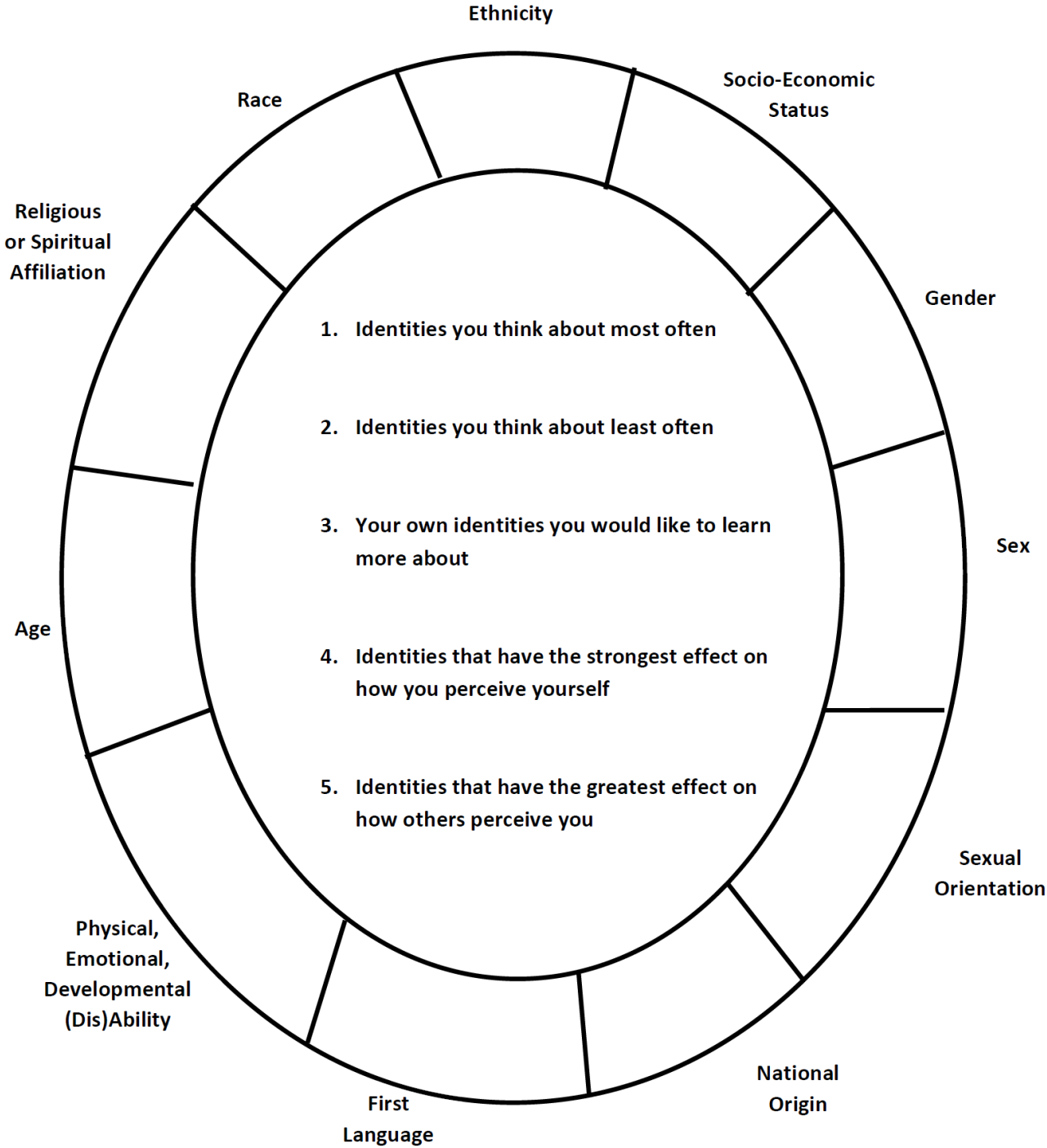
Personal identity intersectionality

organizational behavior

how people interact and work in their environments

https://study.com/academy/lesson/business-case-study-motivation-organizational-behavior-at-marriott.html

There Are Several Types of Problems

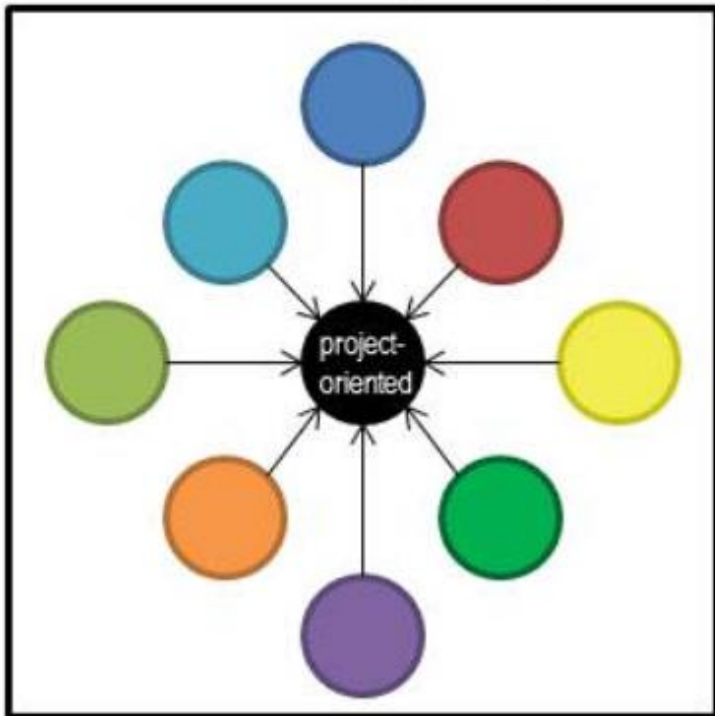| Simple	Complicated	Complex
Baking a Cake	**Sending a Rocket to the Moon**	**Raising a Child**
Right **"recipe"** essential Gives same results every time	**"Formulas"** needed **Experience** built over time and can be repeated with *success*	No **"right"** recipes or protocols **Outside factors** influence Experience helps, but doesn't *guarantees success*

team science

Team science

A collaborative effort to address a scientific challenge that leverage the strengths and expertise of professionals trained in different fields. Coordinated team investigations with diverse skills and knowledge may be especially helpful for studies of complex social problems with multiple causes.
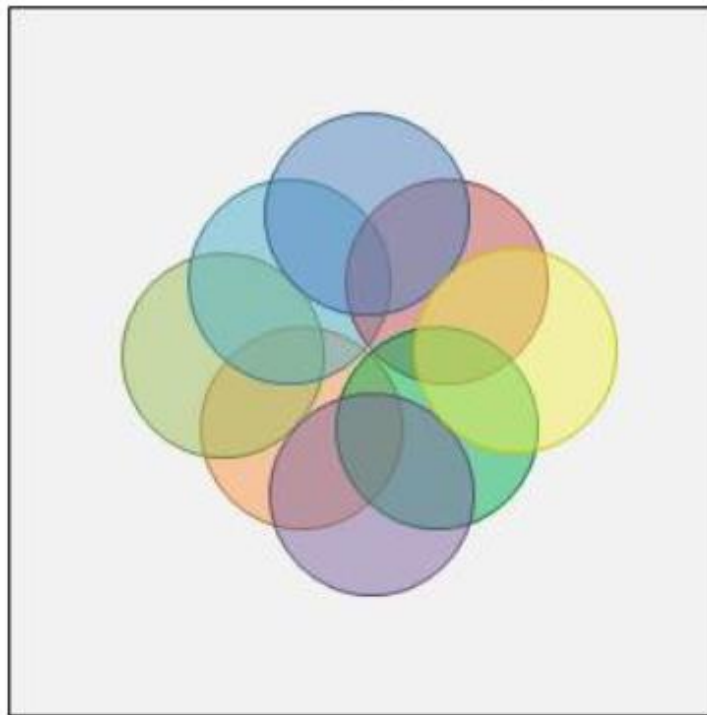
- Interdisciplinary research
- Transdisciplinary research
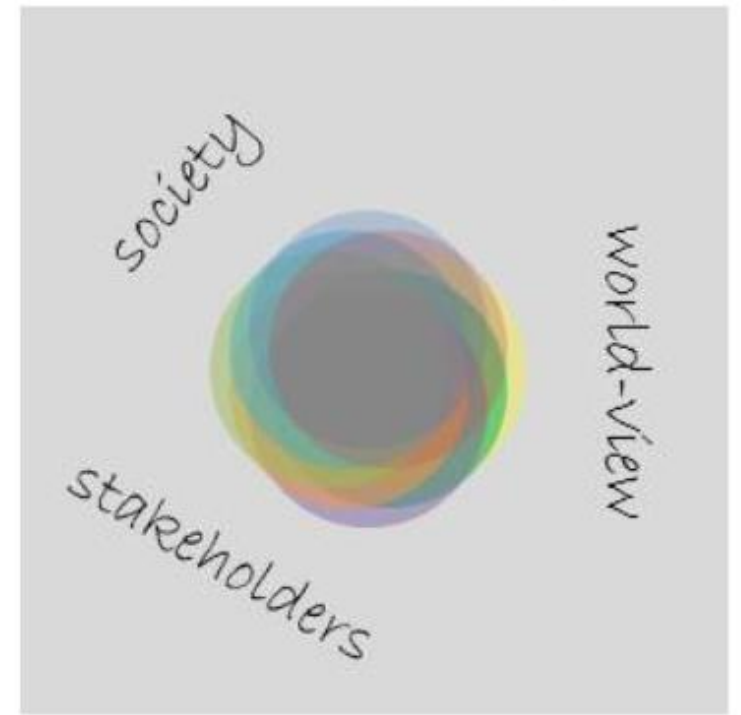- Convergence research

Multi- → Inter- → Transdisciplinary

Multidisciplinary   Interdisciplinary   Transdisciplinary

https://nanohub.org/groups/howpeoplelearnnano/crossdisciplinary_nature_of_nanotechnology

Increased scientific impact!

The preeminence of ethnic diversity in scientific collaboration.

AlShebli et al.

Source: AlShebli, B.K., Rahwan, T., Woon, W.L. (2018) The preeminence of ethnic diversity in scientific collaboration. *Nature Communications*. 9, Article number: 5163. Retrieved from https://www.nature.com/articles/s41467-018-07634-8

What are the barriers to multicultural team science?

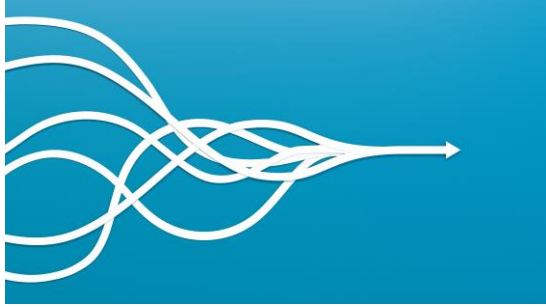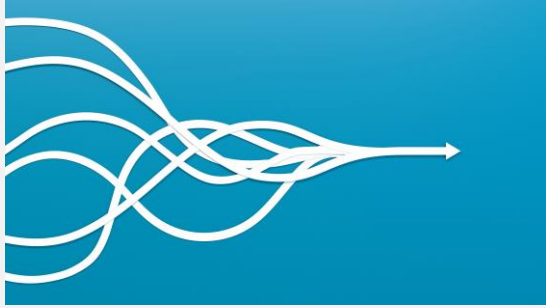# The everyday oppressive behaviors within the academy and in industry

Lack of learning science use to improve teaching and learning in the academy

Trickle down funding and measuring the wrong things

What are keys to a successful transition to convergence?

Translate grand challenges to a shared vision of a resilient Tucson that is held by all community members

We will see the findings of the research incorporated into practice. [12]

measurable impacts [11]

I'll see changes to the built enviroment at UA that reflect a commitment to a zero-carbon emission operation, and to training of students that reflects that committment [1]

Our discussions about the built environment will be bolstered by more data supporting innovation. [1]

If it is truly feasible in our current budgetary environment, if faculty feel supported, and if it has enhanced the reputation of the UA. [2]

1.Collaborations across researchers on campus 2.Collaborations between researchers and practioners [2]

What does success look like in 3 years?

If it results in an increase in the number of high-impact papers published by UA that deal with the built environment. [1]

It will become more of a University presence- more symposiums / conferences, more inter-disciplinary opportunity and conversation, more student work directly related to concepts / contests / topics - more university-wide recongnition [6]
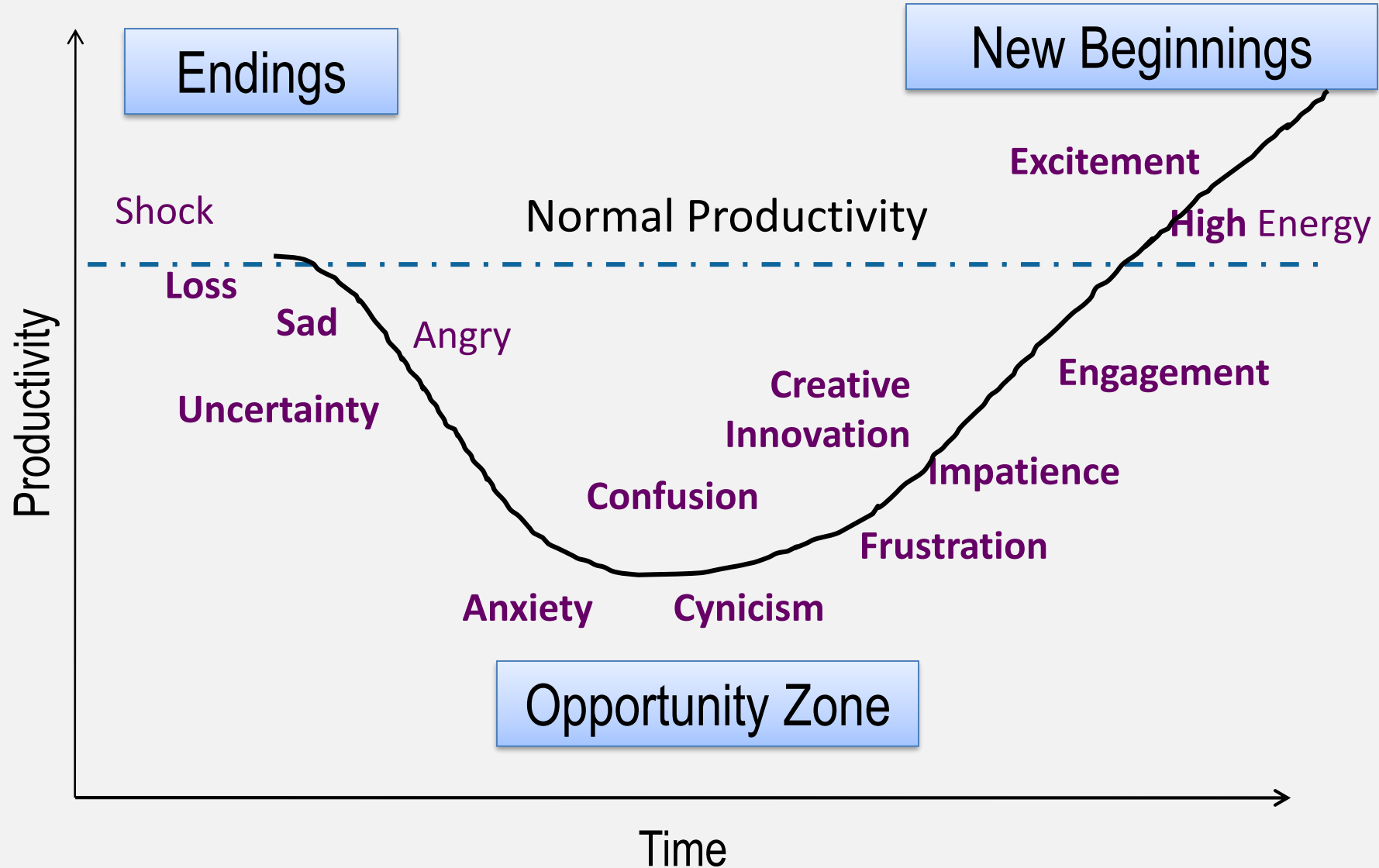
I don't know and hope this symposia gives me more clarity on the topic [2]

Managing Transitions, Making the Most of Change

Adapted from William Bridges

Serving students through Personal, Digital U

[5.2B]

Create a dynamic, joyful ~~digital~~ experience
human

▸ Engage with students to understand their needs

▸ Design digital tools that help meet their needs

▸ Encourage students to discover and use these tools

Student Union and Student Services
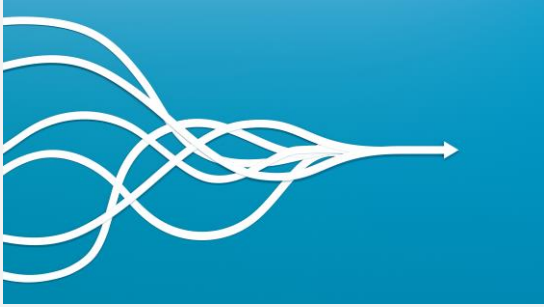
Financial Aid

Course selection

Library

Online courses/ distance education

Measure strategy and fund from the bottom up

EBL

Evidence-Based Leadership

How to create a high-performance culture
and measurable success.

Results, not actions.
No weasel words.
Be ruthless

Experiments, not assumptions.
No failure, only feedback.
Iterate, don't procrastinate.

Cascade, don't fragment.
Buy-in, not sign-off.
Working on, not just in.

DIRECTION

LEARNING

DECISION

IMPACT

EXECUTION

EVIDENCE

ACTION

Leverage, not force.
Patterns, not points.
Processes, not people.

Learning, not judging.
Evidence before measures.
Measure what matters.

Causes, not symptoms.
Practical, not perfect.
Collaboration, not competition.

EBL Leadership Habit 2: **Evidence** is about setting meaningful performance measures for each strategic goal.

Supporting UA Diversity & Inclusion Centers and Programs

- African American Student Affairs
- Adalberto & Ana Guerrero Student Center
- Disability Cultural Center
- Immigrant Student Resource Center
- Native American Student Affairs
- Common Ground Alliance Program
- LGBTQ Affairs
- Women and Gender Resource Center
- Asian Pacific American Student Affairs
- Global Experiential Learning & Community Engagement
- VETS Center
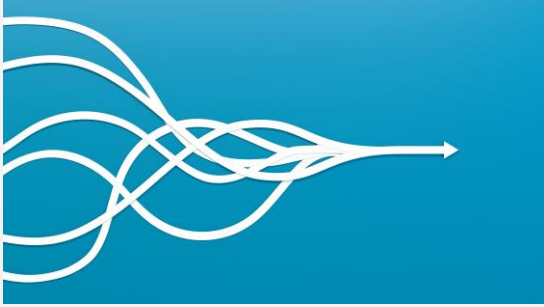
Create a learning infrastructure for:

- Culturally responsive interpersonal communication
- Focusing the initiative on learning

Where people continually expand their capacity to **create the results they truly desire**, where **new and expansive patterns of thinking are nurtured**, where collective aspiration is set free, and where people are continually learning to **see the whole (reality) together.**
-Peter Senge

"Through learning we re-create ourselves. Through learning we perceive the world and our relationship to it. Through learning we extend our capacity to create, to be part of the generative process of life."
— **Peter M. Senge Author/Founding Chairperson of SoL North America**

Your turn!

veronicasmith@data2insight.com

206-290-0374

Evolution of Mission and Values at the UA

▶ **Mission**

To improve the prospects and enrich the lives of the people of Arizona and the world through education, research, and creative expression

▶ **Our core values**

- **A Diverse and Inclusive Community:** People are the source of our strength. Their different perspectives, backgrounds and experiences make us stronger. We treat people with respect and share decision making to create a climate that supports the success of all who learn and work here

- **Excellence:** We hold to the highest standards in all we do and we invest our resources accordingly

- **Innovation and Entrepreneurial Action:** We explore new approaches, challenge the status quo, and foster creative endeavor

- **Integrity:** We honor our commitments; take responsibility for our actions; are honest, fair and just in all we do; and stand to make informed decisions for the good of our community

- **Partnerships:** We create synergies and expand opportunities through collaborative and interdisciplinary approaches. As Arizona's land-grant university, we embrace the opportunity to enable communities to share new knowledge to benefit Arizona and the world

THE ARIZONA ADVANTAGE
2025 GOALS

▶ **Develop and strengthen** the talents, contributions and sense of belonging of **all diverse learners** and communities

▶ **75%** 6-year graduation rate for Hispanic students (from 60%)

▶ Close **retention gap** for Native Students (from 70% to 91%)

▶ Establish UA as an **arts destination** and integrate arts & culture throughout the UA experience

▶ **Convening thought leaders** to spur innovation through large events (e.g., TenWest, Festival of Books)

▶ **Top 5** research institution on commercialization metrics (from ~ top 10 today, as measured by AUTM survey data)

Our Process

‣ **Engage** experts in the field – Purpose Institute

‣ **Involve** the full Wildcat community in the process

‣ **Define** a common Purpose & Values for the UA

‣ **Activate** our unique Purpose & Values as a critical component of the Wildcat experience

THE UNIVERSITY OF ARIZONA

Strengthening UA's organizational health and culture

[5.1A]

Taking Action

- Strategic clarity

- Role clarity, with clear decision rights and expectations

- Performance reviews

- Operational management – clear cascade of goals and targets

The Path Forward

▶ **Strategy Implementation Group (SIG)**

Dedicated team to manage performance, track progress, support initiative leads and deliver impact

▶ **Investment in the strategy**

- Robust development campaign
- RCM evaluation
- Exploring other creative strategies

▶ **New leaders aligned with the strategy**

Hiring underway for Provost, CFO, SVP of Research and Innovation

▶ **Ongoing updates for ABOR**

Values, Banner and RCM evaluation

Strategy Implementation Group

Accountable Pillar Owners

Accountable Initiative Owners
(who will engage support teams and campus community)

Number of Sub-initiatives by weekly status   ■ On track   ■ Some issues   ■ Leadership attention   ■ On hold
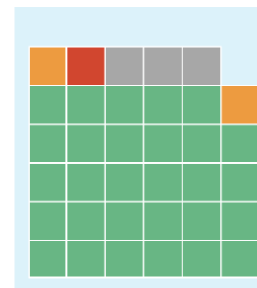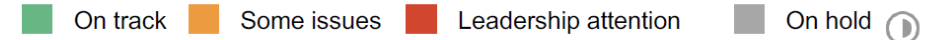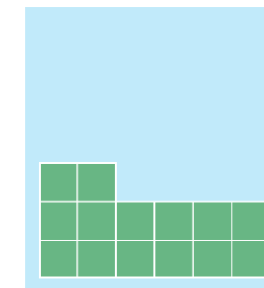
Pillar 1: The Wildcat Journey   Pillar 2: Grand Challenges   Pillar 3: The Arizona Adva...   Pillar 4: Global UA   Pillar 5: Insitutional Excelle...
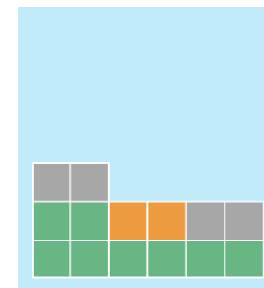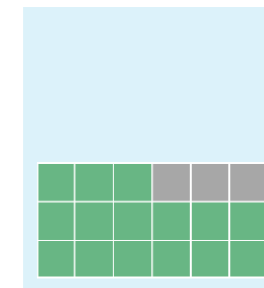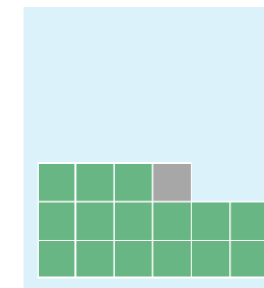
GRAND CHALLENGES
2025 GOALS

▸ **Top 25** in total **R&D activities** (currently ranked 38th)

▸ **Maintain #1** ranking in **Space and Planetary Science research**

▸ **Top 25** in **Health Science research** (currently ranked 54th)

▸ **Top 3** in **Physical Sciences** research (currently ranked 6th)

▸ **Top 20** in **Social Sciences** research (currently ranked 28th)

THE UNIVERSITY OF ARIZONA

We know there are key levers to help us reach our research goals
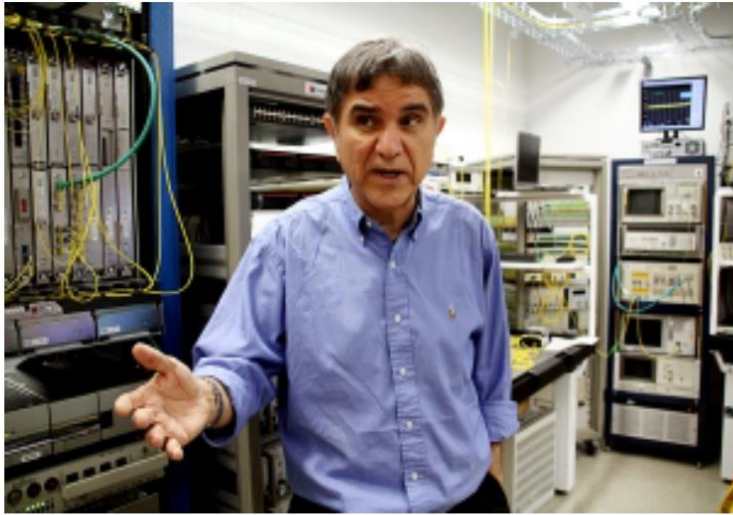
Star faculty who represent academic excellence within their respective disciplines with **diverse and inclusive** backgrounds

Attracting and supporting our graduate and professional students — the engine that propels our research forward
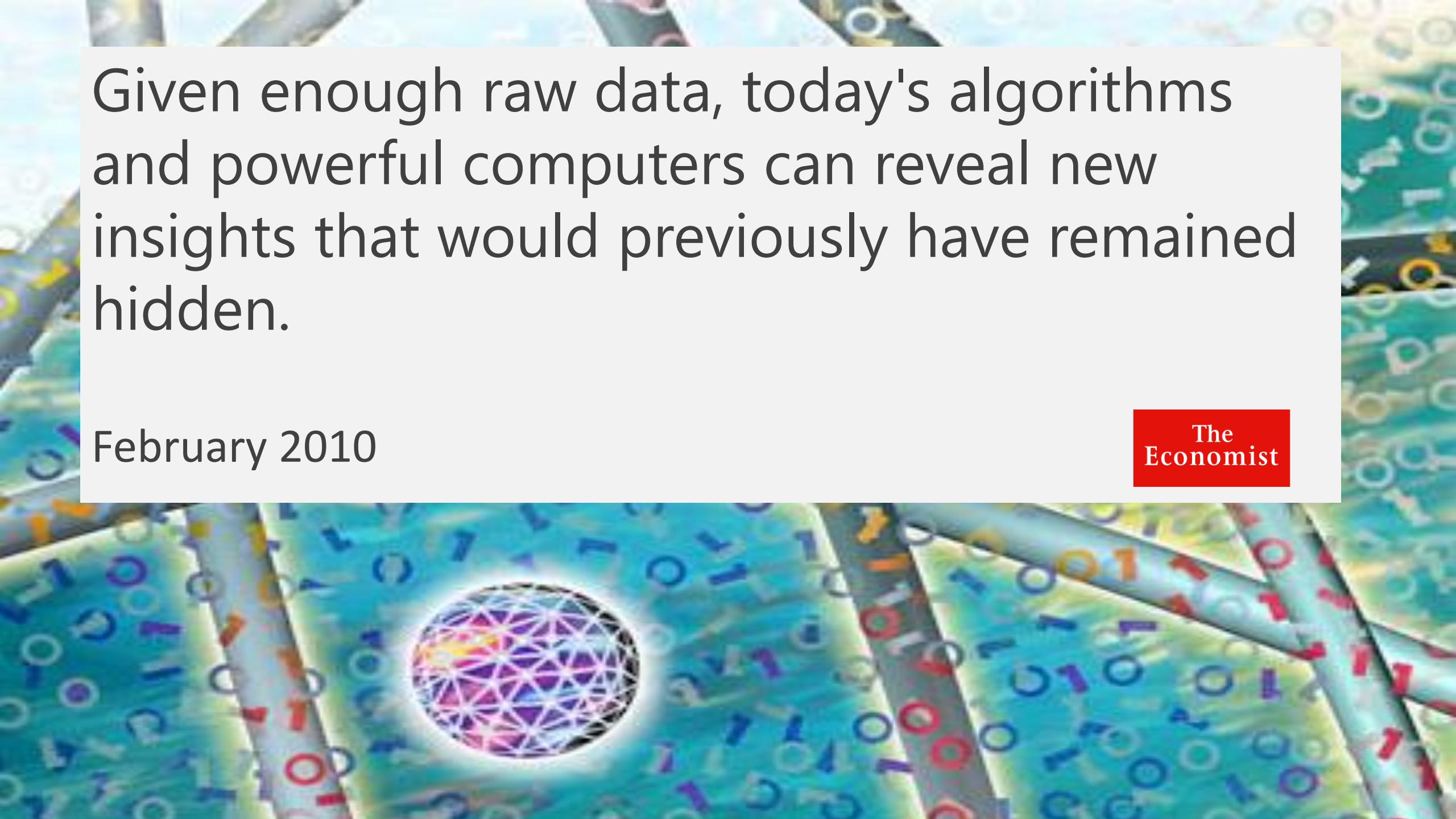
Enablers — core facilities, infrastructure, equipment and research support

THE UNIVERSITY OF ARIZONA

General Education Reimagined
Wildcat Core Learning Outcomes

[1.2A]

5 "Cs" of Gen Ed

1 Critical thinking

2 Communication

3 Collaborative teamwork

4 Cultural understanding

5 Creative problem solving

THE UNIVERSITY OF ARIZONA

Given enough raw data, today's algorithms and powerful computers can reveal new insights that would previously have remained hidden.

February 2010

The Economist

Drowning in data, starved for wisdom

When the dust settles, we'll see that people who took the time to be thoughtful with a limited set of the right data were the ones who solved the problems of our age.

-Stephen Few