Strategies for Strengthening Your Research Through Diversity
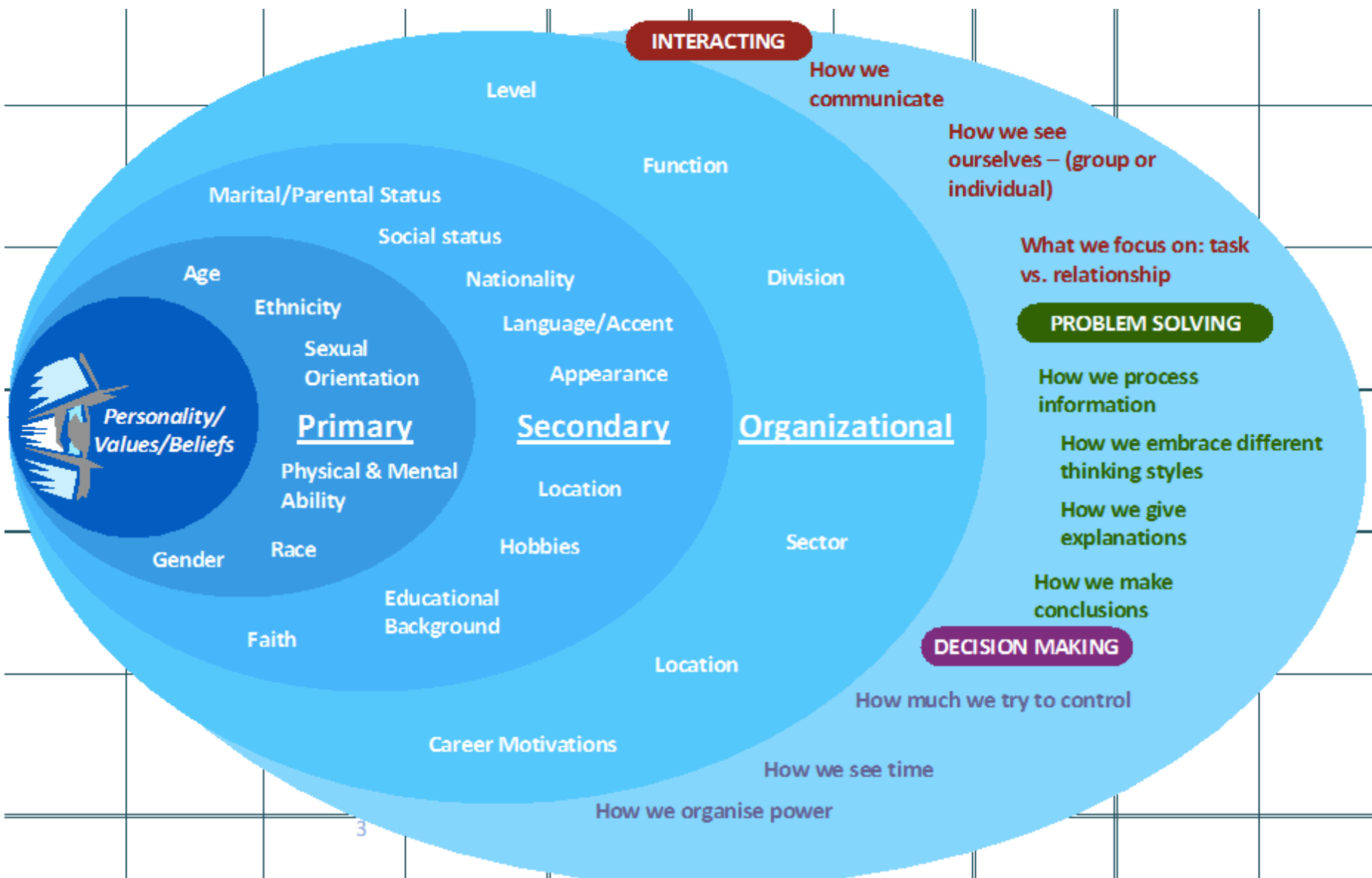
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PSE Open Mic

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What is your definition of diversity?

Diversity of thought predicts scientific excellence

(e.g., Dahlin et al., 2005; Ely & Thomas, 2001; Jehn et al., 1999)

INTERACTING

Level

How we communicate

Function

How we see ourselves – (group or individual)

Marital/Parental Status

Social status

Nationality

Division

What we focus on: task vs. relationship

Age

Ethnicity

Language/Accent

PROBLEM SOLVING

Sexual Orientation

Appearance

How we process information

Personality/ Values/Beliefs

Primary

Secondary

Organizational

How we embrace different thinking styles

Physical & Mental Ability

Location

How we give explanations

Race

Sector

How we make conclusions

Gender

Hobbies

DECISION MAKING

Faith

Educational Background

Location

How much we try to control

Career Motivations

How we see time

How we organise power

3

(Irwin, 1995)

<u>Social diversity</u> is surface-level diversity like that of race, ethnicity, gender, political and sexual orientation, age, and other major social categories.

Outline

- ## Studies 1 & 2
  - Social diversity predicts citation rates

- ## Studies 3 & 4
  - Social diversity benefits decision making and broad thinking

- ## Action planning
  - Individual strategies for building and optimizing diverse collaborations

Studies 1 & 2:

Social diversity predicts citation rates

Study 1

- Examined National Center for Ecological Analysis and Synthesis (NCEAS) working groups (WGs) from 1996-2007.

- Compared citations for publications with and without female coauthors, controlling for journal impact factor.
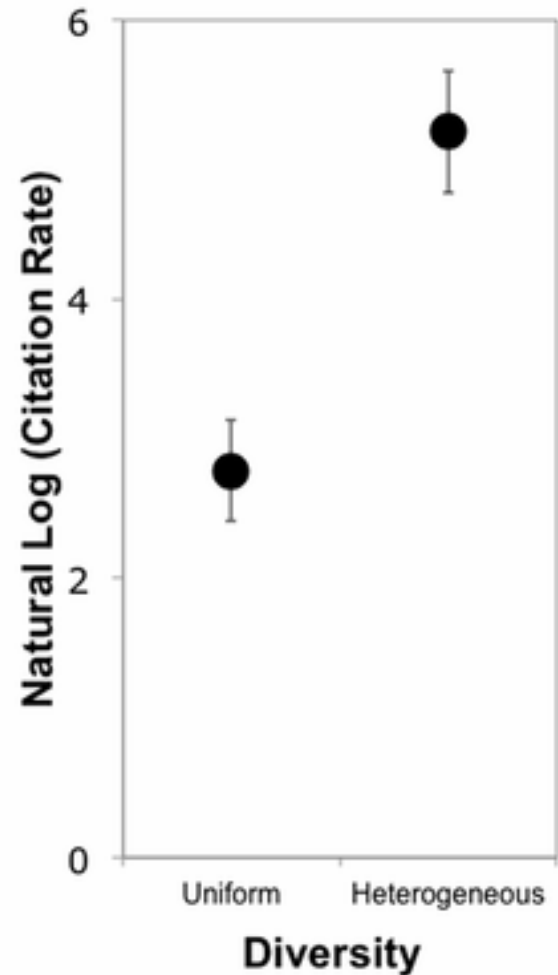
(Campbell et al., 2013)

Study 2

Examined social diversity of authorship teams of 2.5M+ scientific papers in the Thomson-Reuters Web of Science database from 1985-2008.

Ethnically and geographically <u>diverse</u> authorship teams	Ethnically and geographically <u>homogeneous</u> authorship teams
▪ More citations, controlling for authors' h-index	▪ Fewer citations, controlling for authors' h-index

(Freeman & Huang, 2014)

Studies 1 & 2: Workshop

Why do you think diverse authorship teams produce papers that are more highly cited than those by homogeneous teams?

Studies 3 & 4:

Social diversity benefits decision making and broad thinking

Study 3: Procedure

- 216 undergrads were assigned to 3-person groups.

- Groups had either 3 white members *or* 2 white members and 1 non-white member.

- Groups performed a murder mystery exercise. Members had to share information to solve the mystery.

- Groups were evaluated on accuracy in solving the crime.

(Phillips et al., 2006)

Study 3: Workshop

1) Which type of group (homogeneous vs. diverse):
   - Spent more time discussing the task
   - Was more likely to solve the mystery accurately

2) Be prepared to share *why* you think one group was more accurate than the other. What mechanism is at play?

Study 4: Procedure

- 26 undergrads were recruited for a study on "how political affiliation and communication media affect group processes."

- Participants independently read murder mystery and decided who did it.

- Participants were then given a "partner's" opposing view of who committed the crime. <u>The partner is from the same or an opposing political party.</u>

- Participants then write a short essay to their partner to defend their position.

- Essays were evaluated for *elaboration* (1-6 scale) by independent coders.

(Loyd et al., 2013)

Study 4: Results

Essay Elaboration

5.13 — Opposing party partner
3.32 — Same party partner
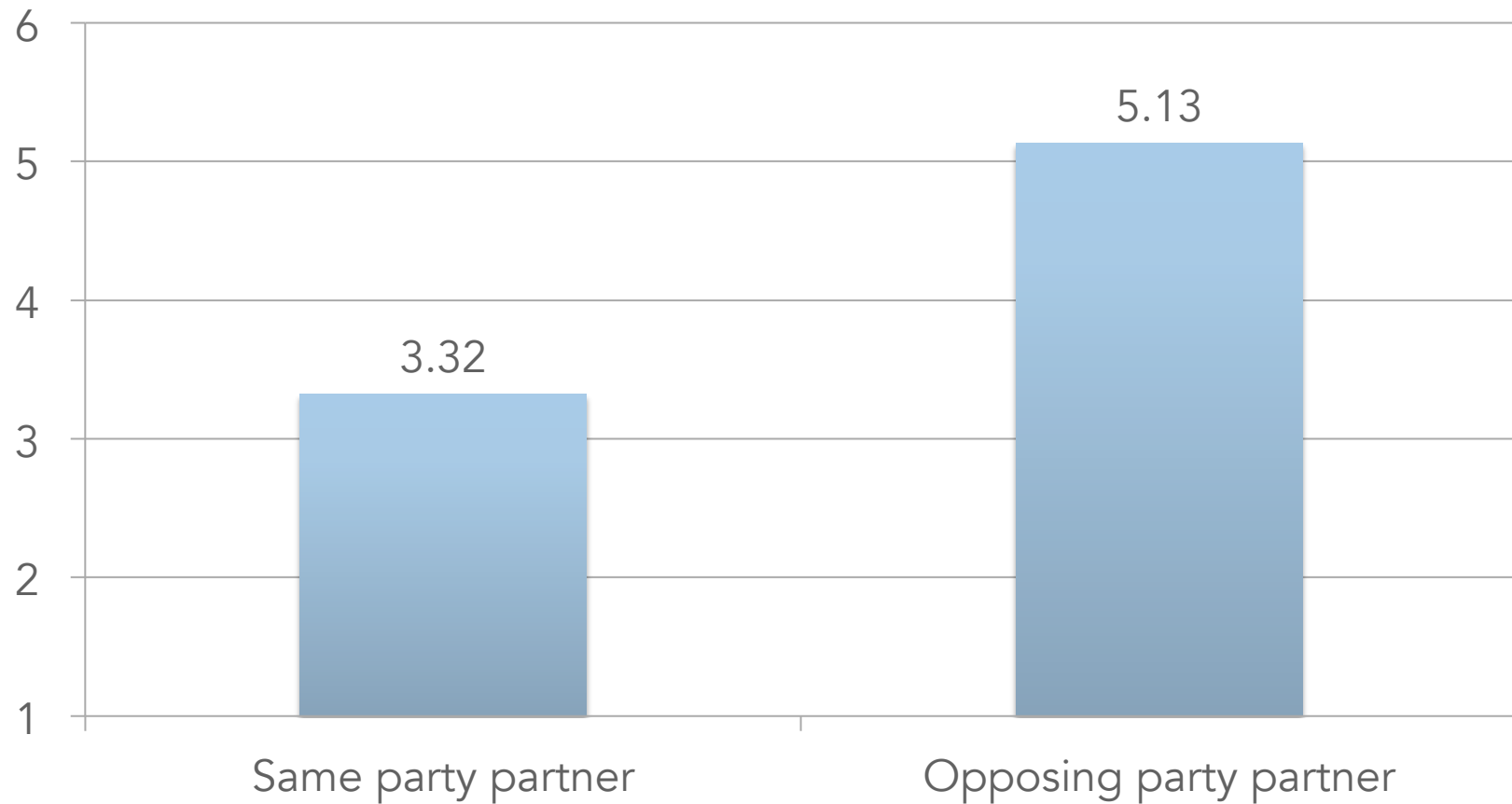
(Loyd et al., 2013)

Studies 3 & 4: Conclusions

- Diverse teams create space for members to contribute fully (be included) in ways that optimize decision making and team success.

- Working in diverse teams brings out the best in individuals by catalyzing them to think critically and communicate clearly.

Action planning:
Individual strategies for <u>building</u> diverse collaborations

Building diverse collaborations
#1 Pursue interdisciplinary research

- Think about the applications and microcosms of your work.

- Follow researchers who may bring an interdisciplinary slant to your work.
  - Google Alerts
  - Professional Conferences
  - Professional Connections

- Invite them to join or review a paper when the time is right.

Building diverse collaborations
#2 Build your brand

"Personal brand is what people say about you when you leave the room."

– Jeff Bezos, Founder of Amazon.com

- Build your online and in-person presence to carve a niche for yourself.

- These actions show that you're approachable and open to collaboration and give others a specific idea of how they can join forces with you.

Building diverse collaborations
#3 Socialize

- Attend workshops outside of your division.

- Join an Argonne Club.

- Become a member of an employee resource group.

- Become a mentor.

Action planning:
Individual strategies for <u>optimizing</u> diverse collaborations

Optimizing diverse collaborations
#1 Know thyself

APOLLO.

- Consider evaluating your automatic associations via the Implicit Association Test (IAT; https://implicit.harvard.edu/implicit).

- Self-awareness predicts intentions and actions to cultivate inclusion (Perry et al., 2014).

Optimizing diverse collaborations
#2 Be your own class monitor

- Mindfulness is an effective intervention against exclusion (Thomas et al., 2014).

- Focus on your behaviors during team meetings and conference calls.
  - Verbal behaviors (interruptions, tone)
    - "Yes and" respectfully acknowledges your colleagues' input and allows you to voice your perspective (Thomas & Jerinic, 2014)

  - Non-verbal behaviors (distractions, signaling approachability)

Optimizing diverse collaborations
#3 Choose your words carefully

- Exclusive language seeps into everyday conversations.

  – Pay attention to what you're framing as "normal" versus "abnormal" (e.g., Miller et al., 1991).

  – Which social groups are you "marking" (Cundiff, 2014)?

  – Monitor linguistic shortcuts that imply prototypicality.

Final Takeaways

- Social diversity is tangibly beneficial to collaborative teams.

- Social diversity also benefits individuals who surround themselves with it.

- Each of us is equipped to take small steps to attract and optimize the diversity around us to improve our contributions to the STEM community.

Thank You and Questions

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