Broadening access to STEM through the power of daily interactions

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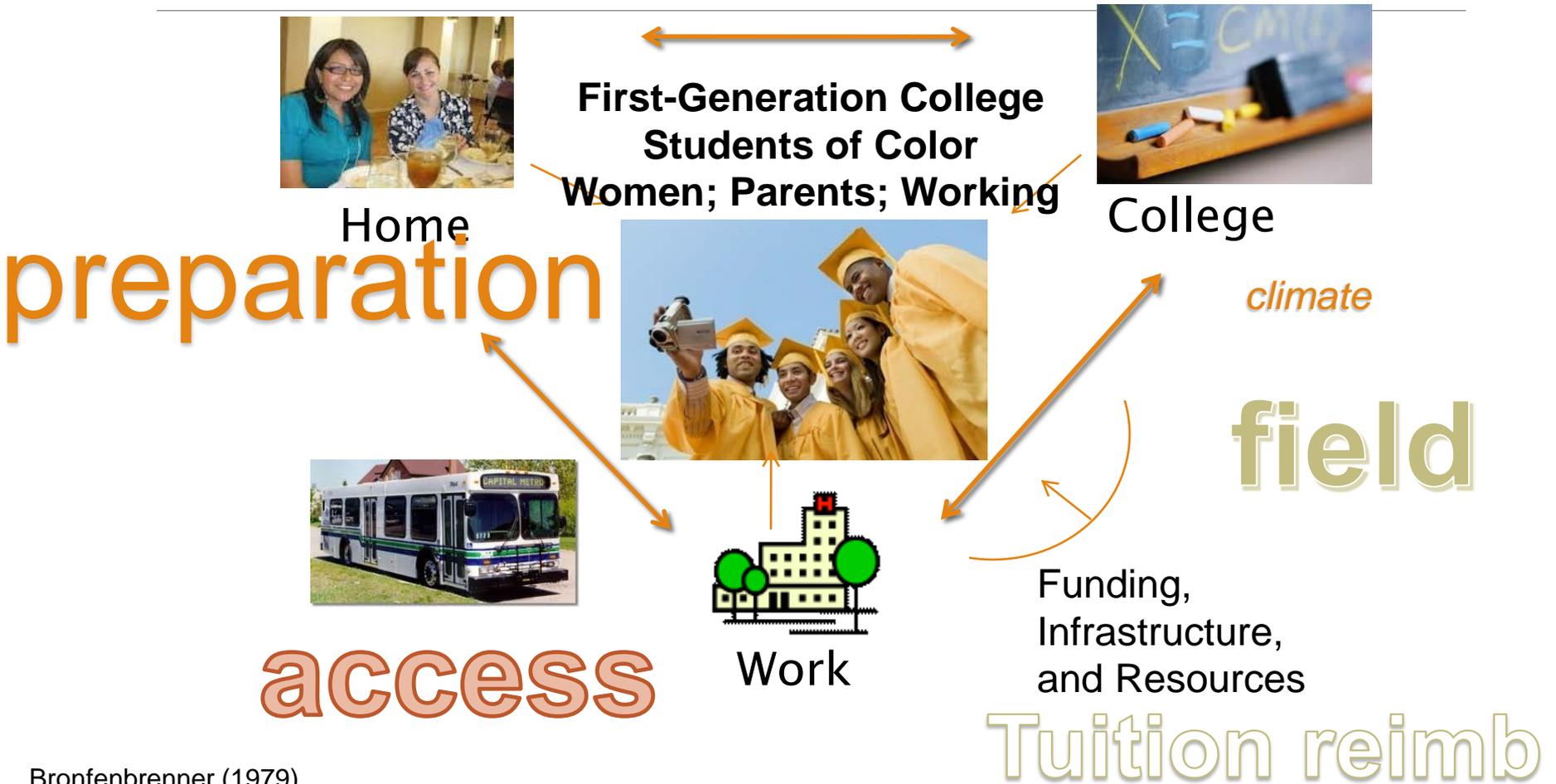DIRECTOR, WEISSMAN CENTER FOR LEADERSHIP

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Outline

1. Framework for student access and involvement

2. Mentoring

3. Action steps: power of daily interactions

Ecology of STEM thriving: issue identification

First-Generation College Students of Color Women; Parents; Working

Home

College

preparation

climate

field

access

Work

Funding, Infrastructure, and Resources

Tuition reimb

Bronfenbrenner (1979)

Individual-Level Qs

FACTORS

QUESTIONS

Capacity
◦ Self-efficacy, Performance

"Can I do this work? Am I capable?"

Interest
◦ Relevance, Feasibility

"Do I want to do this? Is it possible for me?"

Belongingness
◦ Identity, Recognition

"Is this my community...Do I belong?"

Packard & Babineau (2009); Packard (2016); Carlone & Johnson (2007)

Classroom, Department, Institutional, Community, Regional, Societal Levels

- Reputation
- Representation
- Resources and Policies

Brochures. Walls of Fame. Career Panels. Space. Norms. Temp.

Why Mentoring?

Positive Outcomes
◦ Competencies, capability
◦ Self-efficacy
◦ Grades
◦ Interests; Persistence
◦ Belongingness; Identity
◦ Goals, Aspirations

Gibson, 2005; Higgins & Thomas, 2001; Terrion & Leonard, 2007; Ragins, 1997; Thomas, 1999; Scandura & Williams, 2004; Sosik & Godshalk, 2005; Zalaquett & Lopez, 2006; Linnehan, Weer, & Uhl, 2005; Rhodes, Ebert, & Fischer, 1992; Rhodes, Reddy, Grossman, 2005; Sanchez, Reyes, & Singh, 2006; Sanchez, Esparza, & Colon, 2008; Shotton, Oosahwe, & Cintron, 2007

Mentoring: How to Deliver?

MECHANISMS

PROS/CONS

Programs

Intensive= Selective, exclusive

Practices (advising/courses)

Embedded; larger scale

Policies

Can support other mechanisms

Increase Power of Daily Interactions
Bring Intentionality to Existing Practices

(My) Mentoring Definition

A *developmental* relationship = supportive, grows

Involves a *constellation* of people

A collection of **interactions** that provides a function (e.g., research support, encouragement, coaching)

Positive outcomes (academic/grant/promoted)

I focus on the mentoring function rather than the mentor. See Kram (1985); Higgins (2001); Packard et al. (2009); Sorcinelli & Yun (2009)

Recognition

"One cannot pull off being a particular kind of person (enacting a particular identity) unless one makes visible to (performs for) others one's competence in relevant practices, and, in response, others **recognize** one's performance as credible. For example, a scientist presenting her work at a conference must use language according to prescribed norms, dress and interact in certain ways, and demonstrate that she thinks in certain ways for others to recognize her performance as appropriately ''science-like'' if she wants to be considered a scientist."   (Pg. 1190)

Carlone and Johnson (2007)

We like to celebrate intensive shiny programs. And mentoring heroes.

BUT DON'T UNDERESTIMATE (AND FORGET TO INVEST IN) THE DAILY MENTORING. AND THE ORDINARY MENTORS (US) WHO DO IT.

Where?

- Office hours

- Hallway

- Lab

- After class

- On email

- In coffee shops

- On-line discussion boards

- At conferences

When?

- When you generate the list of possible candidates for leadership positions such as TA, mentor, or research roles

- When you reflect on requests for letters of recommendation

- When a colleague talks to you about a student; when you bump into a student

- When reflecting on who took a step forward or had a breakthrough

Try: Give feedback that *recognizes* a student

And link the behavior to professional identity

"I noticed you really stuck with it today. It's that kind of persistence that will pay off for you in the field, Mysi."

"Sean, you took a risk there. I noticed – don't be discouraged others did not take up your thread. If you want to talk more about your idea…"

Try: All-Class Invitations

See for example:
Packard et al. (2013)

Try: 2 Comments and a Q

Try: Talk to colleagues when you hear limited assumptions
(re: who "can" do this work)

Try: Recognize your colleagues who invest in daily mentoring

Try: One student, one colleague, one interaction at a time