

# Rehumanizing Mathematics

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For Umich LCIT 10/29

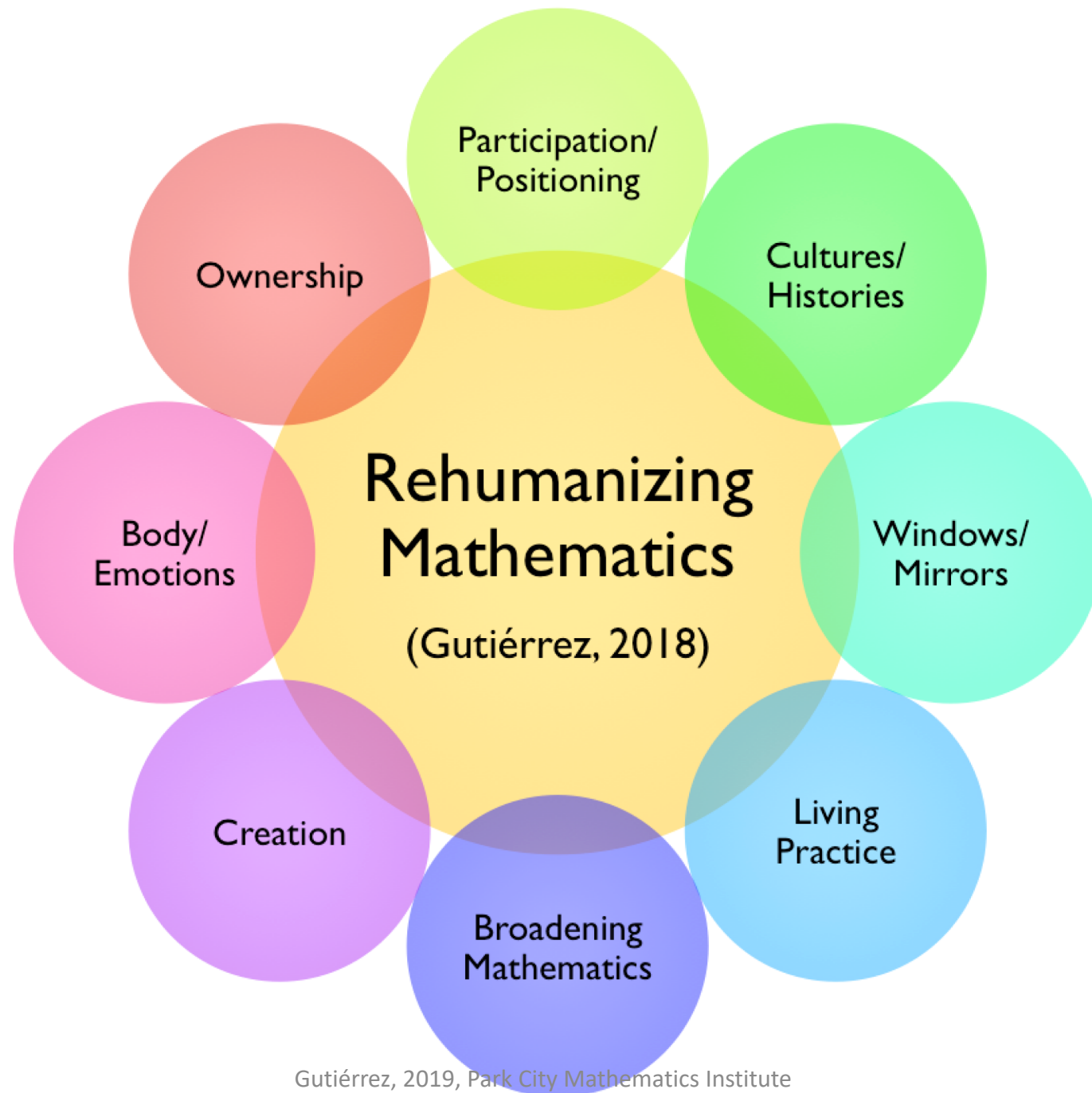
# 1. How we think/talk about our work matters

- **Diversity** (attention to difference, also used when no difference, often ignores history, no attention to positionality)
- **Equity** (often highlights universal approaches, closing achievement gaps, leaky STEM pipelines)
- **Inclusion** (tolerate, allow, participate on own terms, focus on individuals, understand exclusion)
- **Centering historically oppressed** (place at the core, dedicate resources and energy there, requires political clarity)

# Why Rehumanizing?

- Honors our history
- Addresses politics of teaching and politics of mathematics
- Not just a decoupling but a recoupling
- Verb because action-oriented, ongoing, performance, future-focused (desire)
- Seeks evidence from populations served
- Could rename it decolonizing, but only under certain conditions (e.g., mathematx, see Nov. 2017 issue of Philosophy of Mathematics Education Journal)

==> Re-attaching humans to each other, through the practice of mathematics  
==> An “ecology of knowings”



See video explanation at <https://www.youtube.com/watch?v=D266LYIigS0>

# What might count in classrooms?

Positioning/Participation	Cultures/Histories	Windows/Mirrors (In Lak'ech)	Living Practice/Futures
Status, hierarchies in the classroom/society, legitimate participation, teacher aware of positioning	Funds of knowledge, algorithms from other countries, ethnomathematics, politics	Appreciation, not just critique, also a new world; standing alongside of others, seeing new things, new axioms, goal is not always consensus; fostering respect/dignity; becoming the best person in their own eyes	Way of being, highlighting breaking the rules, axioms leading to divergent answers, desiring mathematics for future; politics
Authority shifts from text/teacher to other students; students as meaning makers; shared authority	Students reconnecting with their own histories or ancestors/roots; understanding the sociopolitical contexts	Students being able to see themselves in curriculum & in others; connecting with others	Understanding mathematics in motion, especially future-focused; Students thinking of maths as a verb, not noun
Martin, 2013; Wagner & Herbel-Eisenmann, 2009	Aguirre & Zavala, 2013; D'Ambrosio, 1985; Powell & Frankenstein, 1995; Turner et al., 2012	Gutiérrez, 2012; 2015 Style, 1995 Su, 2017	Brown, 1996 Gutiérrez, 2019

# What might count in classrooms?

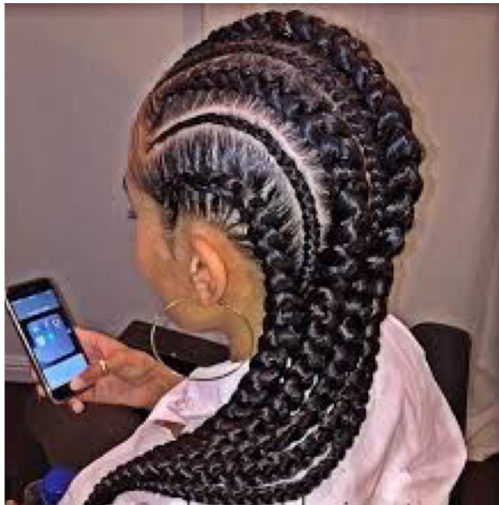
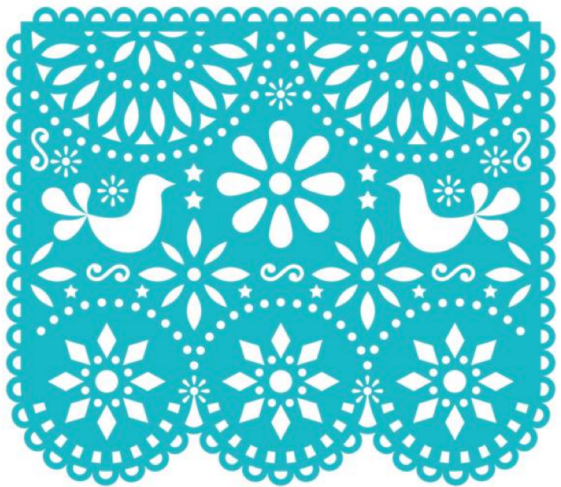
Broadening Mathematics	Creation	Body/Emotions	Ownership
Decentering of: Algebra/Calculus/Number Sense, symbolic representation, & favoring the general case to make room for other forms	Not just reproducing what has come before (e.g., invented algorithms, new ways of naming/seeing patterns, breaking rules)	The body and senses matter for any real world problem (can't just pretend); aesthetics, a critical element is joy.	Mathematics as something one does for oneself/community, not just for others (e.g., school), questions and answers are useful/reasonable for own purposes
Students seeing more qualitatively or other forms that would count as mathematics; seeing how mathematics is connected with other disciplines	Students inventing new (to them) forms of mathematics in relation to others Students as authors	Invitations to and examples that draw upon other parts of the self (e.g., voice, vision, touch, spirituality, intuition over logic)	Desire to “play” or “express oneself” through mathematics, inquiry begins with questions of importance to oneself/ community
Ascher, 2004 Gutiérrez, 2017b Joseph, 2010	Povey & Burton, 1999; Brown, 1996 Steffe & Thompson, 2000  Gutiérrez, 2019, Park City Mathematics Institute	de Freitas, 2008 de Freitas & Sinclair, 2014 Sinclair, 2018	Brown, 1996 de-Freitas, 2012 Gutiérrez, 2017 Su, 2017

# Rehumanizing mathematics is not universal

**Place matters**

**People matter**

**Time matters**



**Center** Black and Indigenous people, esp. womxn, queer folx, and other oppressed identities

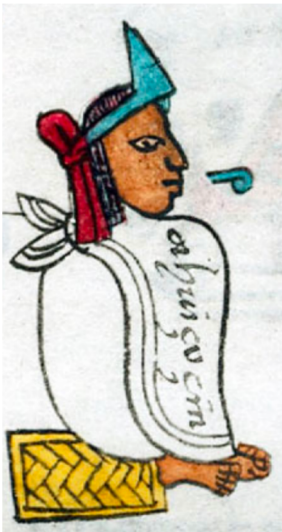
**Understand** intersectionality



# For Each Dimension—Consider Typical Narrative & Counternarrative



**Typical narrative** = what has been normalized in mathematics, much of which is dehumanizing



**Counter-narrative** = attempting to rewrite what mathematics is, who it's by/for, how we practice/perform it, etc. This counter-narrative helps us bring back that which is erased through schooling; helps us see the humanity