Phenomenology
Getting at the "essence" of a phenomenon through people’s lived experiences.

"Queering"
- Rejecting stability
- Rejecting categories
- Corrupting and complicating

"Methods"
- Replicability
- Emphasis on quantifiable data
- Controlling for complicating factors

Background/Motivation
Queer theory offers a very useful set of tools for doing critical analysis, but it is also a notoriously slippery field of study. It is often criticized for its resistance to creating a stable definition of itself as well as its insistence on complicating discussions without paying due attention to trying to re-apply the pieces it broke apart [1]. While there’s no singular definition, there is a broadly agreed upon goal of queer theory “to make strange, to frustrate, to counteract, to delegitimize, to camp up heteronormative knowledges and institutions” [2]. As such, there’s a notable tension when social science researchers try to apply queer theory as a methodology, since the concept of creating data and trying to coherently analyze it can be perceived as capitulation. To count is to agree that there is a well-bounded definition, to summarize and analyze is to impose your own values onto your research subjects, and to report on your findings is an attempt to assimilate yourself into the heteronormative culture of the academy [3]. As a result of this tension, some scholars argue that “queering methods” is paradoxical. As a physicist, this language instantly elicits the old wisdom we often learn in undergraduate physics classes: when you encounter a paradox it’s an indicator that either your intuition is wrong or your model is incorrect. I want to take a physicist’s approach to this ‘paradox’ by probing how we can move within and beyond the contradiction of “queer methods” and apply it in PER.

Recommendations for Physics Education Researchers

Quantitative
- Define subject populations with intention
- Question underlying power structures being reinforced
- Prioritize work outside of usual contexts
- Avoid creating categories based on normative data sets
- Allow self-identification

Qualitative
- Do an auto-ethnography if relevant to your usual research
- Gather qualitative data beyond interviews and surveys
- Participate in studies involving classroom interventions
- Break down the researcher/subject binary
- Prioritize empowering research participants

Motivating Quantification
"Many social scientists contend that science has a method, and if you want to be scientific, you should adopt it [...] if your discipline does not operate by this method [...] then in the minds of many, it’s not scientific." [4]

References:

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"Methods"
- Categorization of Identities
Care should be taken to avoid reinforcing stereotypes and using reductive categorizations of people based on national data sets, especially when those data sets are not being used as a point of comparison in the study.

"Queering"
- Over-valuing the aesthetics of “being scientific” harms the usefulness of data
- “Removing background noise” in quantitative social science data can easily come at the expense of marginalized groups and normalize results towards the majority
- Methods should be based on the goals of the research

HBCU Paper [7]
Author met with participants beforehand to build trust and comfort. She continued to cultivate a relationship with them after initial interviews by interacting with their families, going to a homecoming game with them, and going out to a club with them. Sharing about herself and her identity allowed her participants to be more open about their experiences.

Researcher/Subject Binary
- “professionalism” may lead to overly formal and incomplete answers
- Your identities will impact the information people give you, ignoring positionality is ignoring an important piece of data

“Trans Statistics” [10]
- Seeking to count the potential number of people affected by legislation mandating transgender people in bathrooms
- Uses national datasets and redefines “transgender” from people seeking gender reassignment surgery to any trans*, gender nonconforming, or intersex person

Physics Demographics [11]
- Utilizes statistical methods and national datasets to demonstrate how PER normalizes research towards white men learning calculus-based physics at high-ranking universities, when none of these characteristics represent most students who are taking introductory physics classes
- This exposes an underlying assumption about the definition of an “introductory physics student” in PER.

Poetic Analysis [8]
Turned an interview transcript into a found poem to better capture the emotional information given by the participant. Emphasized joy, agency, and community.

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Autoethnography [9]
- Uses personal experiences of the authors to illustrate a deconstruction of the producer/consumer model of PER where researchers produce completed curriculum for instructors to consume. Instead, they pose PER as creating instructionally generative fodder which researchers already use in their classrooms.

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