

Culturally Responsive and Equitable Practices for Evaluating Mentorship Programming for Black Men in STEM



WSSU

Faculty, Administrator, and Evaluator Insights for Ensuring Evaluation Leaves No One Behind



Introductions



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Exercise On The Functional Muscular Recovery After Muscle Injury.
 * Sharma, N., Zhou, Y., Criswell, T.
 Division of Regenerative Medicine Wake Forest School of Medicine, Winston-Salem, NC 27157

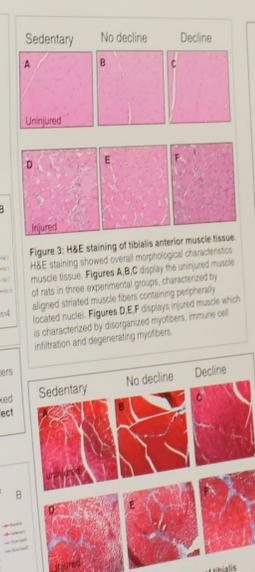


Figure 3: H&E staining of tibialis anterior muscle tissue. H&E staining allowed overall morphological characteristics of muscle tissue. Figures A,B,C display the uninjured muscle of rats in three experimental groups, characterized by aligned striated muscle fibers containing peripherally located nuclei. Figures D,E,F displays injured muscle which is characterized by disorganized myofibers, immune cell infiltration and degenerating myofibers.

Figure 4: Masson's trichrome stain was used to determine collagen deposition, as a sign of fibrosis. Figures A,B,C display Muscle tissue fibrosis and resolution before compression injury. Figures D,E,F display Muscle tissue fibrosis and resolution after injury.

Conclusions
 No significant difference was found in muscle function, muscle morphology or fibrosis between the experimental groups. No incline and decline walking groups. This data suggests that after eccentric exercise has no effect on the recovery of muscle function after injury. Flaws in the experimental design that should be addressed in future experiments. These include waiting longer than 24 hours after injury to start the exercise regime or waiting for a longer end point (1-3 months).

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- Exercise Physiology, Wake Forest University
- Biophysics, Wake Forest University



Making Sense of Black Men's Mentoring Experiences in STEM: Culturally Responsive STEM Evaluation Promotes Deeper Understanding

Breonte S. Guy, Ph.D., Assistant Professor of Psychological Sciences at WSSU

Background

- Underrepresentation
- Lags in Degree Completion
- Deficits Narratives



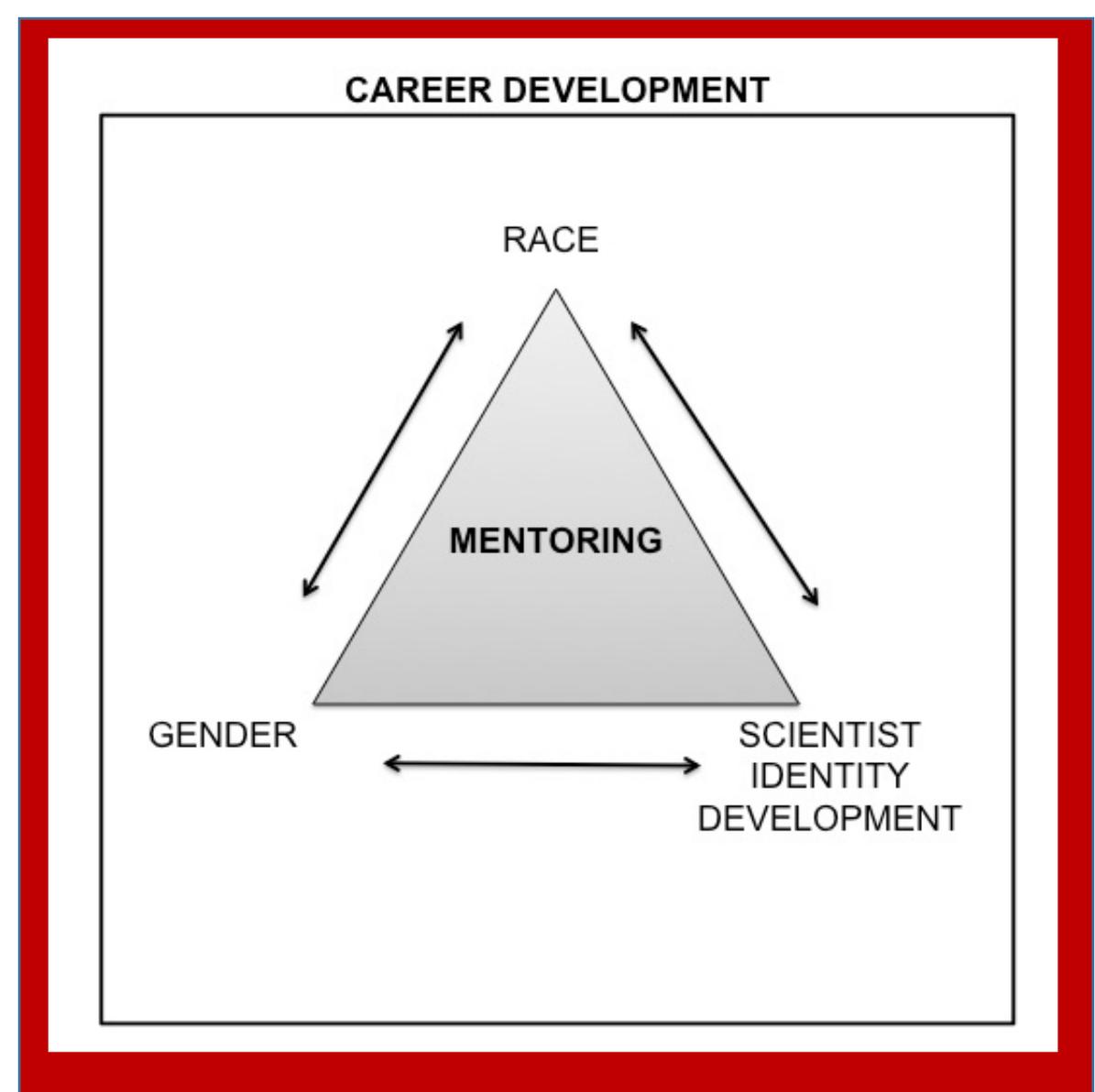


Why we need more Black men in STEM

- Broadening Participation
- Better Situating America on the Global STEM Market
- The Pursuit of Economic Parity

Mentoring Helps

- Ready for the professoriate?
The influence of mentoring on career development for Black male graduate students in STEM (Alston, Guy, & Campbell, 2017)
- - A qualitative investigation





The Lone Black Male Participant

- NSF Projects for Broadening Participation
 - NSF HBCU-UP 1533476
 - NSF IUSE 1821189
 - NSF ITEST 1850283

Acknowledgements

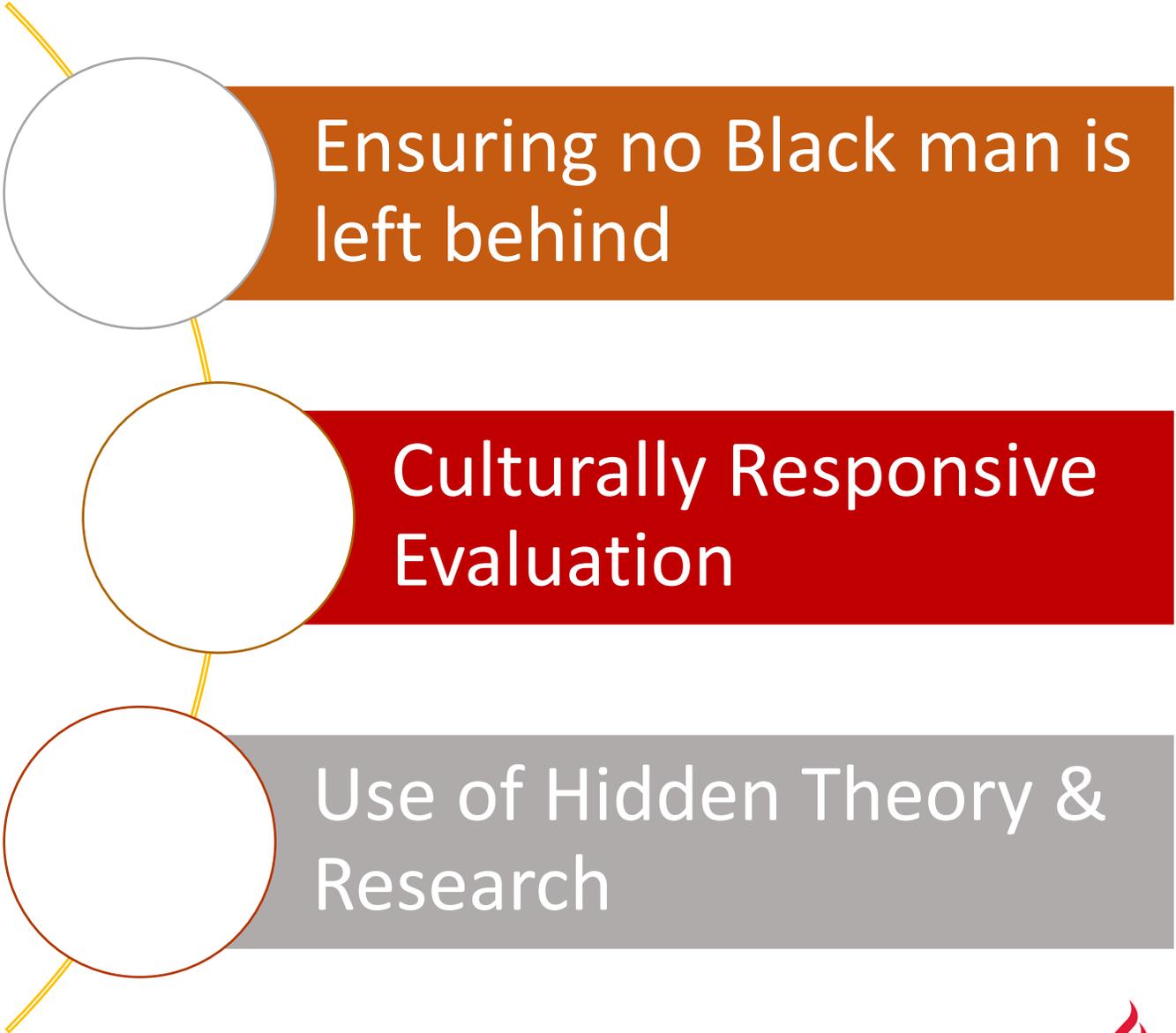
Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

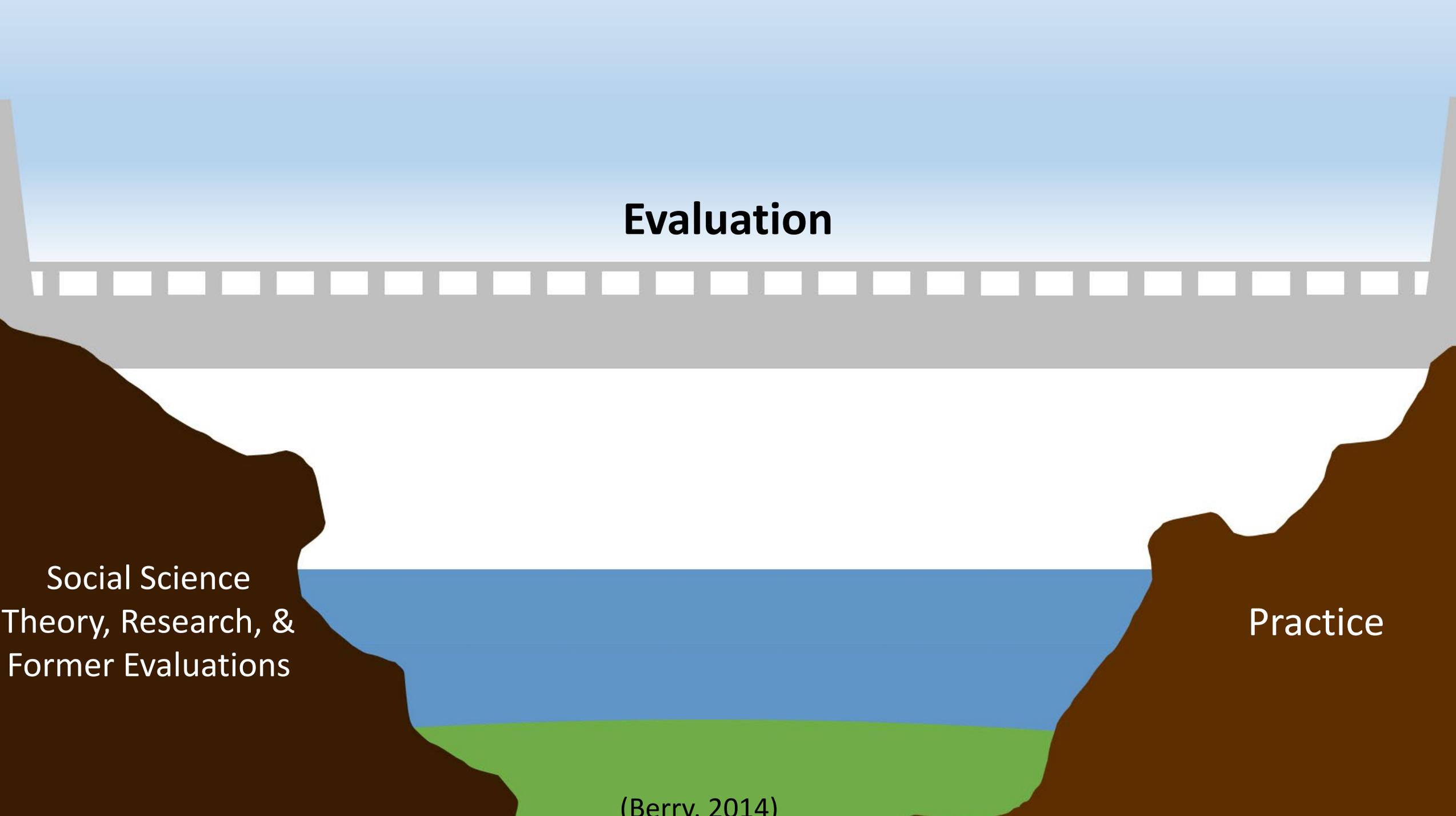


Using a Culturally Responsive Evaluative Approach to Assist Educational Researchers and Administrators in Making Sense of Data

Ciara C. Knight, M.A., M.S., Consultant & PhD Student at CGU

STEM
Evaluation
and Black
Men





Evaluation

Social Science
Theory, Research, &
Former Evaluations

Practice

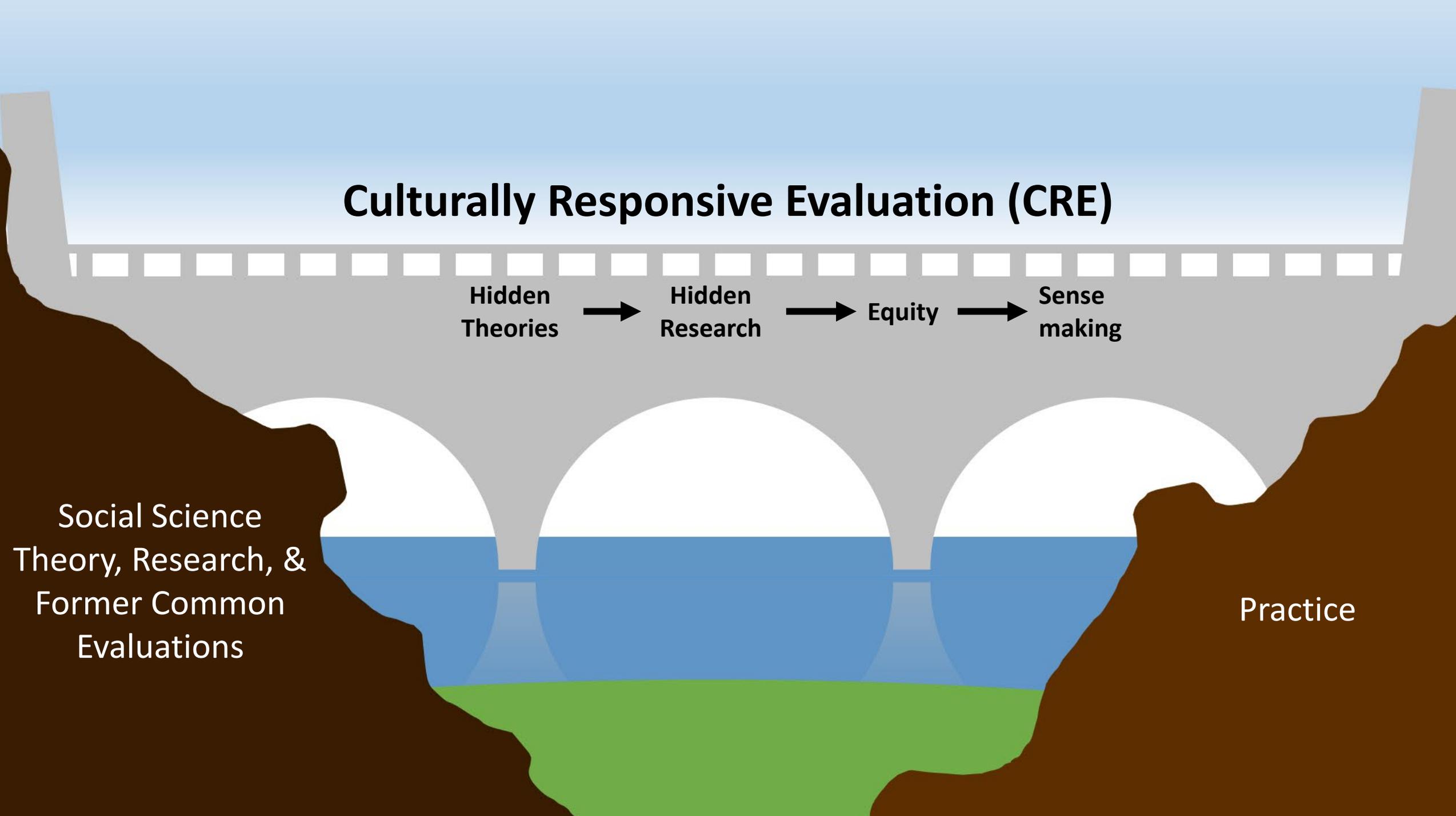
(Berry, 2014)

Culturally Responsive Evaluation (CRE)

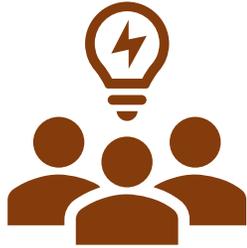
Hidden Theories → Hidden Research → Equity → Sense making

Social Science
Theory, Research, &
Former Common
Evaluations

Practice



Hidden Theories and Research



Theory

Feminist Theory

Indigenous Theory

Critical Race Theory



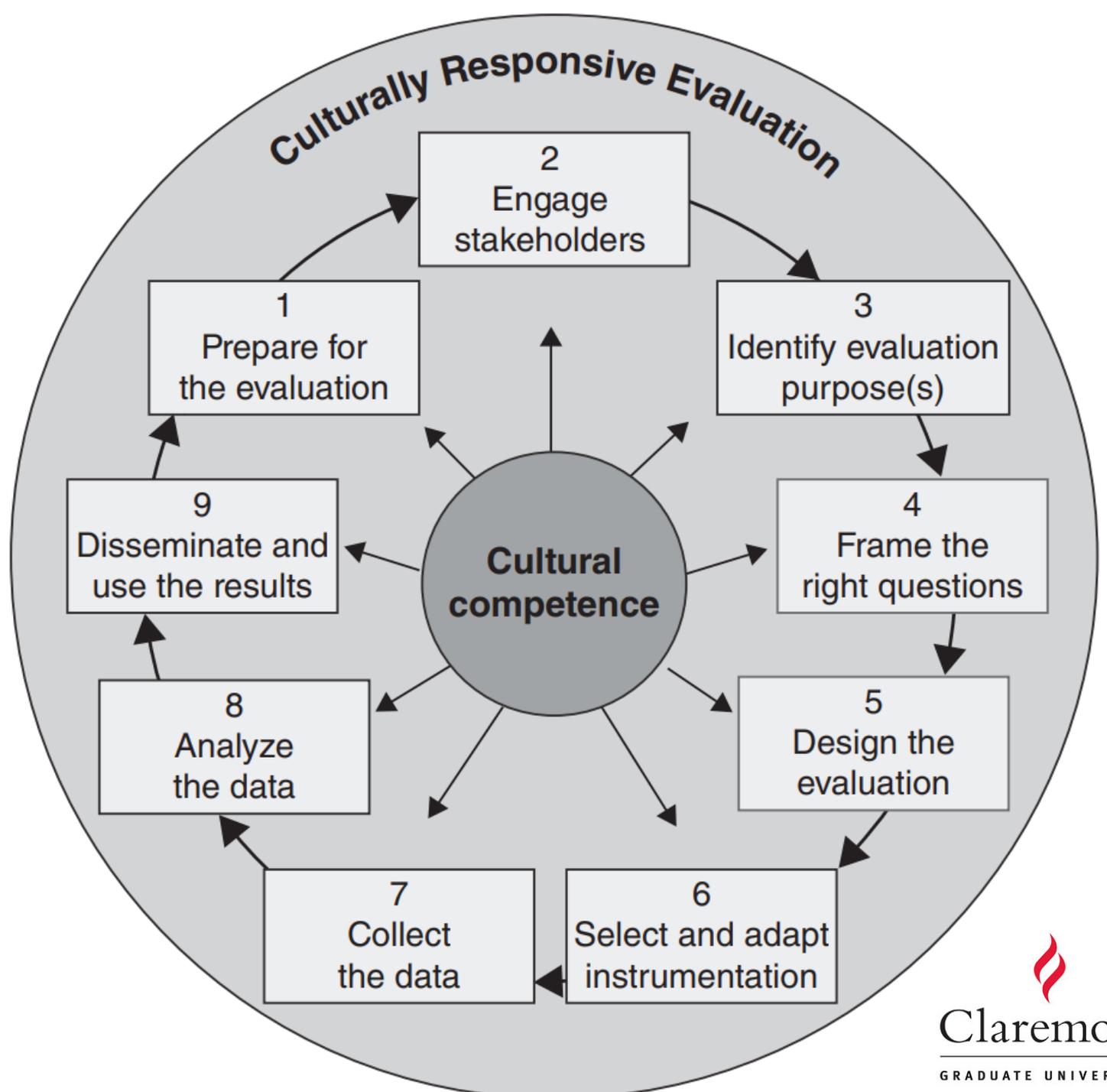
Research

*AlterNative: An International Journal of
Indigenous Peoples*

Journal of Blacks in Higher Education

Journal of Black Psychology

Culturally Responsive Evaluation Framework



Prepare for the Evaluation

Common Evaluation Approach	CRE Approach
Review material about the program	Common Evaluation Approach
Visit program site	Be visible and accessible to URM program members
Meet program members and participants	Review hidden research & theories
Review research, previous evaluations, and theories.	Connect with URM in similar programs
	Visit community spaces of participants

Engage Stakeholders



Typical Stakeholders

Evaluation Commissioner

Program Director

Program Administrators

Faculty/Researchers



Hidden Stakeholders

Current URM participants

URM participants from a similar program

Former URM participants

Faculty & administrators of color

Identify Evaluation Purpose



Common Purpose

Accountability
Developmental
Formative
Summative



CRE Purpose

Accountability to URM participants
URM participant insight on program development
URM participant insight on program improvement
Merit or worth to URM participants

Frame the Right Questions



Evaluation Questions

Is the program effective?

What are the appropriate activities for the program?

How effective are the program activities?

Did the program achieve specific outcomes (i.e. skill development, increased knowledge, change in condition...)?



CRE Questions

Does URM participants find the program effective?

What are the appropriate activities for the program according to URM participants?

How effective are the program activities according to URM participants?

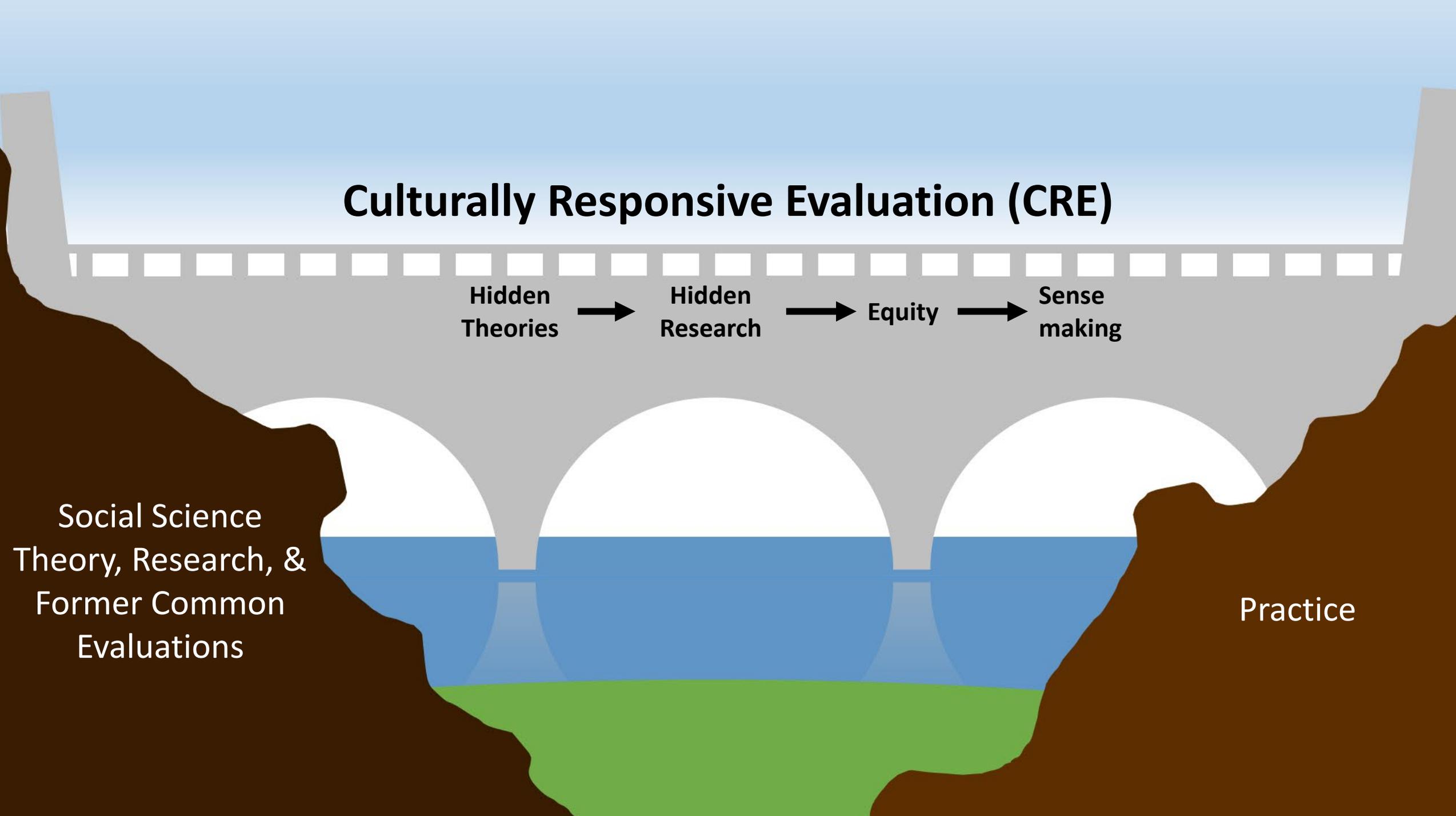
Did the program achieve outcomes that are valuable to URM participants?

Culturally Responsive Evaluation (CRE)

Hidden Theories → Hidden Research → Equity → Sense making

Social Science
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STEM Mentoring for AA Males

Black male PhD students in STEM fields:

- Scientist identity development is inextricably connected to the advancement of all Black males
- Committed to enter the professoriate and serve in a capacity to contribute to the advancement of all Black males
- Dedicated to participating in a movement for the advancement of all Black males

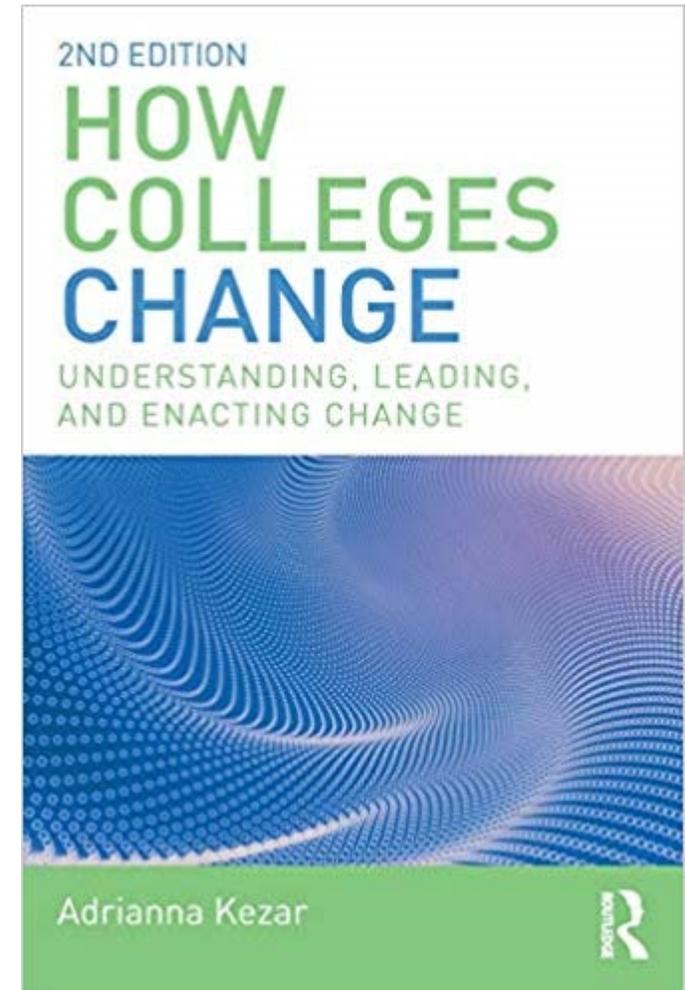


Change the context, not the student!!

- Safe spaces on campus
- Affirming racial identity
- Mentor network
- Clear pathways to career milestones

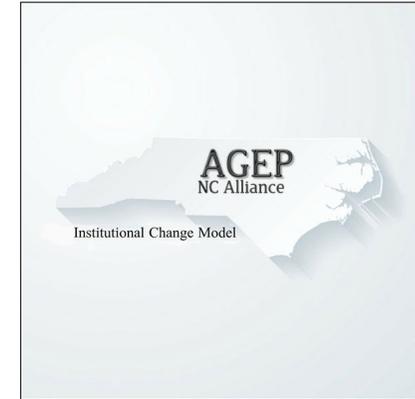
Cultural Change in Higher Education

- Supportive senior administrators
- Collaborative leadership
- Robust project design with goals and objectives
- Staff and faculty development opportunities
- Visible actions taken during the project



AGEP NC Alliance

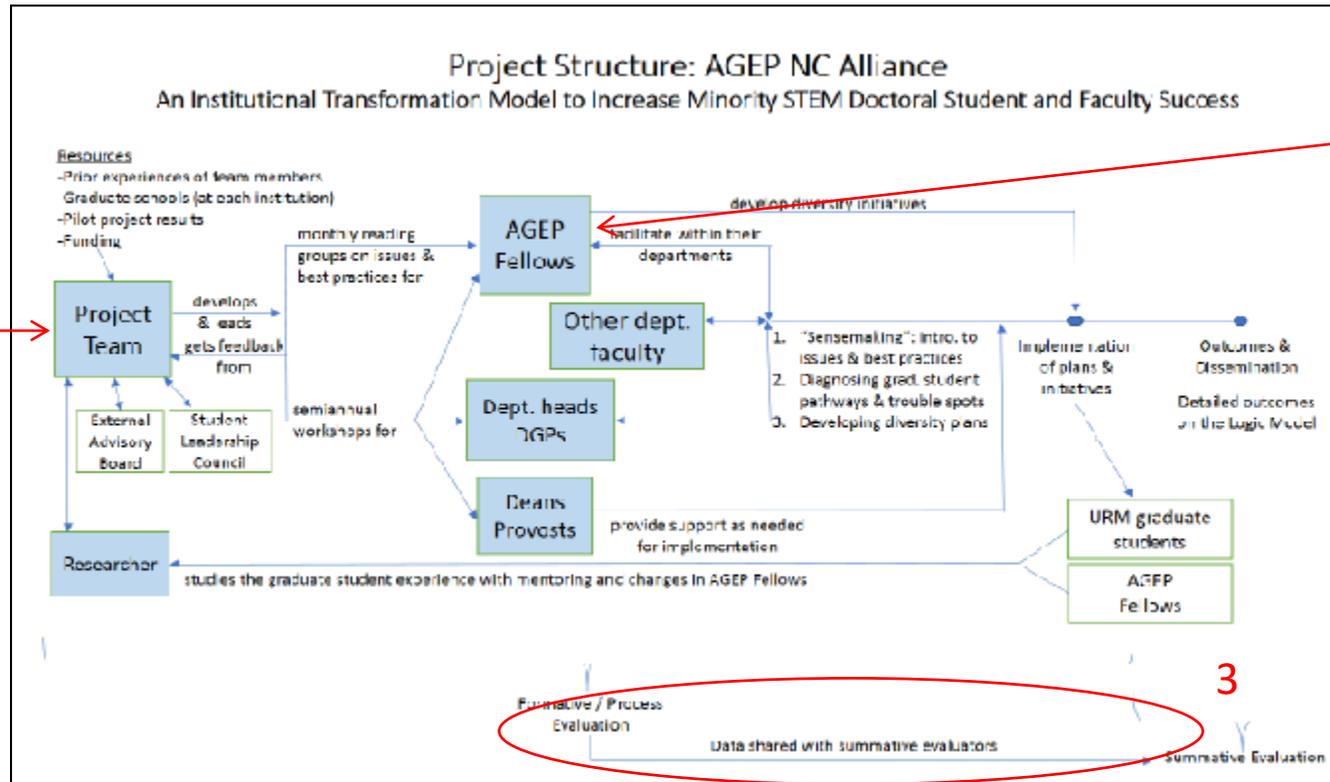
Three institutions work collaboratively to develop, implement and study a model for creating institutional, department-level, and faculty-led change to promote historically underrepresented minority US citizens who are completing their STEM doctoral degrees and progressing into faculty positions.



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**NC STATE
UNIVERSITY**

URM PhD Mentoring Change Program Structure



An Institutional Transformation Model to Increase Minority STEM Doctoral Student Success, <https://peer.asee.org/31743>

AGEP NC Alliance Fellows: Faculty-led Departmental Change

- Fellow cohort
- Fellows meet monthly
- Fellows meet at Winter and Summer Alliance Meetings
- Fellows meet at each other's institutions
- Bi-weekly Leadership Meetings



First cohort of AGEP-NC Fellows. (2018-2020). Prafulla Regmi, Poultry Science; Eric Laber, Statistics; Johanna Elfenbein, Comparative Biomedical Sciences; Brad Taylor, Applied Ecology; Melanie Simpson, Molecular and Structural Biochemistry; Dave Shultz., Chemistry, N C State.

Goals & Objectives: Targeted Outcomes

Short Term	Long Term
<ul style="list-style-type: none"> – Department Diversity Plans developed – Working definition of culturally responsive mentoring – Plans for campus-level discussion group readings and activities and semiannual workshops --Understanding of progress being made toward achieving program objectives and developing, implementing, and studying the NC Alliance model 	<ul style="list-style-type: none"> – Changes in policies and procedures at the department and graduate school level to enhance diversity support – Improved URM graduate student progress toward completion of Ph.D. – Adaptation and adoption of model by STEM departments at each university in the Alliance – Adaptation and adoption of model by departments at other universities



Culturally Responsive Mentoring

- Acknowledge identities of their mentees
- Understand the research describing the impact of social identities on students' experiences in STEM
- Have attitudes, behaviors, and practices that enable them to work with mentees with different cultural backgrounds
- Understand power dynamics and oppression
- Validate students' various identities and help them navigate invalidating experiences encountered while
- Reinforce their self-efficacy in their field

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UNC Charlotte AGEP-NC Leadership Team and Student Leadership Council.

Process Evaluation Framework

1. *Is the program as it was described in the proposal? If not, what changes have been made and why were they made?*
2. *How are the AGEP NC Fellows, DGPs, department heads, deans, and provosts interacting with the program? Are they satisfied with the program?*
3. *What progress is being made toward achieving program objectives?*
4. *What progress is being made toward achieving program objectives outlined in the logic model?*



Dr. Adrian Coles, PhD (NC State, 2014, Dept. of Statistics)

Process Evaluation: Key Results

What progress is being made toward developing, implementing, and evaluating the NC Alliance model described in the NSF abstract?

- Leadership retreat
- Focused reading of change model
- Identified and mapped model elements to project activities
- Administrator Engagement



Process Evaluation: Key Results

How are the AGEP NC Fellows, Directors of Graduate Programs, department heads, deans, and provosts interacting with the program? How do they feel about the program?

- Fellows are developing diversity plans
- Attending mentoring workshops
- Report learning in the workshops
- Deans and Provosts express support to PIs, but limited expressions



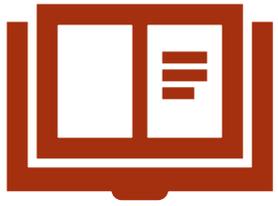
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Questions?