Central Questions

How do we identify and enable pathways for authentic “servingness” change at HSIs?

What efforts make possible shifts in values at the program and institution levels towards greater equity in math and STEM?

Servingness
the institutional quality of enabling success through (or alongside) Latinx identity enhancement

Idea
*Servingness change* requires (and promotes) shifts in values

Image source: Center for Creative Leadership
https://www.ccl.org/articles/leading-effectively-articles/the-secret-to-leading-across-generations/
Case Studies Project: Background

DEC 2017 | UAriziona holds the first of 11 NSF conferences to inform design of the new NSF-HSI Program

APR 2018 | STEM in HSI working group is formed, and releases Consensus Report on Transforming STEM Education at HSIs

SEP 2018 | STEM in HSI working group begins US Broader Impacts ‘Road Trip’ to disseminate report recommendations & engage institutional change

DEC 2018 | STEM in HSI working group engages in change by funding three competitively selected case studies on equity at HSIs

AUG 2019 | Funding period ends & case study teams report on accomplished change
Case Studies Themes and Rationale

Rationale/Change Framework

Central Question

How can we enable **authentic servingness** through change efforts that **promote shifts in values**, towards greater **equity** in STEM?

Themes

- rural 2-year HSI
- 4 year/R1 HSI
- 2-year HSI

- Equity & Access
- Equity & Assessment
- Equity & Cultural Responsive Practices
How were the Equity Areas for the Case Studies identified?

**STEM in HSI Working Group Consensus Report**

6 THEMES

13 FOCUS AREAS

28 RECOMMENDATIONS

Available at:

Case Studies: Overview of Teams, Contexts & Goals

Team A | access
- **Context:** Rural, 2-year HSI, high interest in STEM, high female and part-time student enrollment
- **Goal:** improve institutional ability to respond and retain high numbers of STEM majors

Team B | assessment
- **Context:** R1, 4-year HSI, top-ranked grad program in Speech, Language & Hearing Sciences
- **Goal:** broaden institutional capacity to use newly designed graduate admission metrics, to increase professional diversity

Team C | assessment
- **Context:** 2-year HSI, focus on K-12 teacher preparation
- **Goal:** gauge success of a new institutional approach (content & method) to build pre-service teacher capacity for equitable teaching in high school

See full Case Study abstracts @ STEMinHSI.arizona.edu
In all cases:

- a challenge aligned with “servingness” purpose was identified
- the challenge was deemed adaptive: change processes would (1) evolve the problem & (2) elucidate solutions
- a participatory structure involving diverse stakeholders, and multiple perspectives, was anticipated
Case Studies: What Did We Learn?

Given our central question, we ask:

In what ways did these adaptive case studies advance servingness change?

What shifts in values did they help promote, and how?
Case Studies: Areas of Servingness Change

Team A | access

- Knowledge of student identities: new info on freshmen profiles, informed by systematic data gathering from student surveys (before: literature based, anecdotal)
- Retention metrics: improved metrics based on input on external/internal factors, and instructor input on students and course difficulty (before: HS GPA; traditional performance metrics)

Rural 2-year HSI
NEW MEXICO

Team B | assessment

- Grad admissions criteria: new, based on inclusive assets (before: GRE and performance emphasis)
- Dissemination of criteria change: institutionally, at college level (College of Science, Graduate College)
- Formalized discussions on inclusive values: with multiple stakeholder input/HSI identity

R1, 4-year HSI
ARIZONA

Team C | assessment

- Assessment of classroom equity practices: development/testing/validation of observation protocol to assess new equity training of preservice teachers “in real time” (before: no tool to test training impact in the actual classroom)

2-year HSI
ARIZONA
Case Studies: Ways in which Change was Advanced

Overall,

- Teams advanced change in two ways: (1) by creating resources/conditions that **enabled** the **envisioned** servingness change, or by (2) **enacting** servingness change previously enabled.

<table>
<thead>
<tr>
<th>Envisioned change</th>
<th>Enabled change</th>
<th>Enacted change</th>
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<tbody>
<tr>
<td>Team A</td>
<td>Team C</td>
<td>Team B</td>
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- Teams utilized participatory structures in two ways: (1) to collaboratively **advance project tasks** (create tools, protocols, gather, analyze and disseminate data), and (2) to engage and **promote shifts in values**.
Central Question
How can we enable **authentic servingness** through change efforts that **promote shifts in values**, towards greater **equity** in STEM?

Explored approach

**Adaptive Change**
e.g., Heifetz, 1990

**Purpose-driven HSIs**
e.g., Garcia, 2018

Adaptive Case Studies as tools for change

Takeaways

- A tool for (1) anticipating and (2) reflecting upon the servingness value of change efforts at HSIs
- Distinguish between authentic vs. compliant equity efforts
- **Further reading**: upcoming paper, and **Team B** publication on their case study

[Link to full paper]
Thank you.

Co-Founders, STEM in HSI Working Group

STEM in Hispanic Serving Institutions (HSI) Working Group

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