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"Challenging Student Anxiety Produced by Educational Inequities: Strengths Training Utilizing a Social Justice Perspective for Pre-Transfer Community College Students and their Faculty and Staff Mentors"

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Title: Challenging Student Anxiety Produced by Educational Inequities – Strengths Training Utilizing a Social Justice Perspective for Pre-Transfer Community College Students and their Faculty & Staff Mentors

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I. Introduction

While there is a growing anxiety amongst undergraduates as a whole, community college students from Hispanic-Serving Institutions (HSIs) who transfer to highly selective, predominantly white institutions experience anxiety that is created by "the racist historical and institutional roots of educational inequality that persist today" (Saetermoe, et al, 2017).

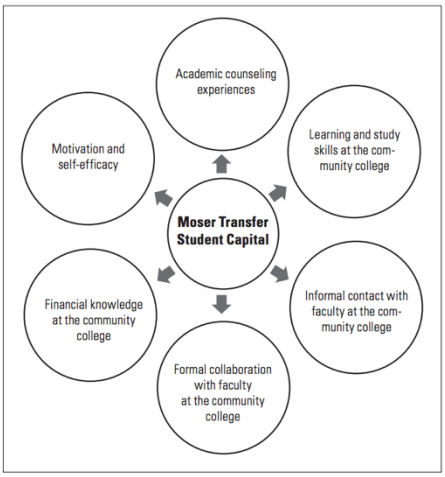

Figure 1: Transfer Student Capital (Moser, 2014)

The experience of this post-transfer anxiety (and its impacts) is sometimes referred to as "transfer shock" – what Hills (1965) described as the severe dip in academic performance experienced by community college students after transfer. Community colleges have responded to "transfer shock" by developing programs to increase "transfer student capital" – what Laanan (1998) described as "the complex transfer process and experiences of students from community colleges who transfer to 4-year institutions" that suggests that "community college students have opportunities to accumulate different forms of capital while at the community college" (Laanan, 2001). Moser (2012, 2014) expanded Laanan's model to analyze the impact of six components of the community college (CC) experience on student success at the new institution: 1) academic counseling experiences; 2) learning/study skills at the CC; 3) informal contact with faculty at the community college; 4) formal collaboration with faculty at the CC; 5) financial knowledge at the CC; and 6) motivation and self-efficacy (Figure 1). Higher transfer student capital is a predictor of post-transfer GPA, ability to cope with problems proactively, and higher levels of student satisfaction with academics and advising (Moser, 2014).

Too often, however, efforts to grow "transfer student capital" at the community college and efforts to respond to "transfer shock" at the transfer institution are premised on the idea that community college students have deficits that must be addressed (Laanan & Jain, 2016). As Rendón, Nora, and Kanagala (2014) add, "For decades, higher education's work to support student success has been built on a grand narrative in which underserved and

underrepresented students from low-income backgrounds are portrayed as 'high risk', 'high maintenance', 'underprepared', or 'culturally deprived'. Absent from this deficit-based narrative are asset-based views about the cultural wealth that students employ to transcend their socioeconomic circumstances and to excel in education." Community cultural wealth is defined by Yosso (2005) as the "array of knowledge, skills, abilities and contacts possessed and utilized by Communities of Color to survive and resist macro and micro-forms of oppression" (p. 77), and includes aspirational, linguistic, familial, social, navigational, and resistant capital.

A second problem with many efforts to grow "transfer student capital" and respond to "transfer shock" is that "intervention programs" limit their scope to changing the pre-transfer and post-transfer students rather than changing the institutions (Bensimon, 2005), ignoring institutional actors, practices and policies. As Bensimon (2005, p. 101) notes,

> institutional actors, as a consequence of their beliefs, expectations, values, and practices, create or perpetuate unequal outcomes and that the possibility for reversing inequalities depends on individual learning that holds the potential for bringing about self-change. That is, individuals—the ways in which they teach, think students learn, and connect with students, and the assumptions they make about students based on their race or ethnicity—can create the problem of unequal outcomes. Such individuals, if placed in situations where they learn the ways in which their own thinking creates or accentuates inequities, can also learn new ways of thinking that are more equity minded. Individually and collectively, campus members can be the creators of the conditions that result in unequal or equitable outcomes.

When institutional actors adopt what Bensimon calls an "equity cognitive frame" rather than a "deficit cognitive frame," they understand themselves and the institution as accountable for student success.

In this paper, we offer an alternative model with planned implementation in 2019-20: pre-transfer Strengths Training utilizing a social justice perspective for a cohort of 50 pre-transfer students and their faculty/staff mentors at their pre-transfer (Allan Hancock College and Cuesta College) and target transfer school (California Polytechnic State University).

Rooted in positive psychology (Gilman, Huebner & Furlong, 2009; Seligman & Csikszentmihalyi, 2000), Clifton Strengths is an online assessment that identifies individuals' top five themes of talent, or Signature Strengths. These patterns of thoughts, feelings and behaviors can be developed into strengths by intentional investment in time practicing, developing skills, and building knowledge (Hodges & Clifton, 2004; Hodges & Harter 2005). The assessment results enable individuals to identify and begin to understand the value in their natural ways and capacities for thinking, feeling and behaving. Neuroscience research (LeDoux, 2002) suggests that because new synaptic connections are most likely to occur in areas that are most developed, we are more likely to grow our areas of greatest strength – our Signature Strengths (Peterson & Seligman, 2004). As such, strengths-based development strategies and interventions involve bringing awareness as well as increased and intentional use of signature strengths (Hodges & Clifton, 2004; Hodges & Harter 2005; Niemiec, 2018). As summarized by Louis (2012), strengths-based approaches have been used in a variety ways to support student success, including in orientation programs (Lehnert, 2009; Pritchard, 2009;

Tanious, 2012), academic advising (Schreiner & Anderson, 2005; Swanson, 2006), and in first-year programming (Cave, 2003; Louis, 2011; Schreiner, 2004; Stebleton, Soria, & Albecker, 2012; Tomasiewicz, 2011). As a whole, research indicates that strengths-based practices are correlated with statistically significant increases in college student retention and academic performance and positively associated with self-efficacy and engagement on campus (Soria & Stublefield, 2014).

While some scholars suggest that strengths-based assessments and the strengths they assess are universal across cultures, (Peterson & Seligman, 2004; Seligman & Csikszentmihalyi, 2000), others stress the importance of not diminishing differences that exist due to various aspects of social and cultural identity (Pedrotti, Edwards, Lopez, & Roberts, 2008; Pedrotti, 2014). Due to our unique combinations of intersecting social and cultural identities, we can define, value, and express our strengths differently (Pedrotti, 2014). The filters through which we create meaning are formed by the intersectional nature of our experiences (Abes, Jones, & McEwen, 2007), and the meaning we create ultimately shapes our behaviors. Furthermore, while Clifton Strengths does shift to an assets-based approach, the assessment was created with primarily Western values in mind and most implementations continue to ignore the inequitable contexts of student experience that cause anxiety.

In contrast, our implementation utilizes a "social justice perspective of strengths-based educational work" (Gardner & Toope, 2011, p. 86). Alongside Strengths Training, participants will engage in activities focused on power, privilege, and oppression – and Ethnic Studies frameworks to make visible and challenge educational inequities – to critically examine the intersections of their strengths with their social and cultural identities. The first goal of this combined training is to position students to adopt an assets-based understanding of themselves; to recognize the ways in which many of their anxieties are created by "the racist historical and institutional roots of educational inequality that persist today" (Saetermoe, et al, 2017); and to take individual and collective action to address these root causes and the institutions shaped by them. The second goal of this combined training is to position faculty and staff participants to provide mentorship via an assets-based framework that recognizes that student utilization of their strengths occurs within a particular sociopolitical context and positions faculty/staff mentors – as institutional actors – to create more equitable conditions at their institutions.[1]

II. Project Background

This project is part of a larger collaboration between Allan Hancock College, Cuesta College, California Polytechnic State University (Cal Poly) that is called "Engineering Neighbors: Gaining Access, Growing Engineers" (ENGAGE) and is funded by the National Science Foundation's Scholarships in Science, Technology, Engineering and Mathematics (S-STEM) Program

[1] Faculty and staff participants will also participate in additional trainings focused on "essential transfer practices" as identified by the Aspen Institute's College Excellence Program in partnership with the Community College Research Center at Teacher's College, Columbia University (Wyner, et al, 2016) to strengthen the implementation of practices that 1) make transfer student success a priority; 2) create clear programmatic pathways with aligned high-quality instruction; and 3) provide tailored transfer student advising to create sustainable change.

(1834128, 1834154; 10/1/18 to 9/30/23). The three partner institutions are located in San Luis Obispo and northern Santa Barbara counties in California. Allan Hancock and Cuesta are highly-ranked Hispanic-Serving Institutions that are part of the public California Community College system, the nation's largest system of higher education, with 114 colleges. Cal Poly is part of the 23-campus California State University system and is one of only five comprehensive polytechnic universities in the nation. A highly selective, predominantly white institution, Cal Poly is ranked as the 7th best undergraduate engineering program in the U.S. and the top-ranked undergraduate program at a public institution. ENGAGE will build on and strengthen collaborative efforts to increase the number of low-income, academically talented students with demonstrated financial need who begin their engineering education at Allan Hancock or Cuesta, transfer to Cal Poly, are retained in and graduate with a B.S. degree, and enter the STEM workforce or graduate program – see ENGAGE Project Objectives & Plans (Table 1, page 5) and the ENGAGE Logic Model (Figure 3, page 6).

Increasing access to and success for community college transfer students in STEM disciplines is necessary to meet national and California workforce needs (Hathaway, 2012; PCAST, 2012). California currently faces a "2025 skills gap" in technical fields that exists, in large part, due to under-participation of Latinx,[2] first-generation, and low-income students in STEM education and professions (Hathaway, 2012; Offenstein & Shulock, 2009; Reed, 2008; Handelsman & Smith, 2016). Efforts to increase retention and persistence are key – a 2010 study by the Institute for Higher Education Leadership and Policy found that six years after enrolling at a community college in California, "70% of degree-seeking students had not completed a certificate or degree, and had not transferred to a university … Most had dropped out; only 15% of the non-completers were still enrolled" (Moore & Shulock, 2010). Non-completion and non-transfer was even higher for Black students (75%) and Latinx students (80%). Increasing access to and success for community college transfer students in STEM disciplines is critical for California and the nation (Johnson, 2009; Palmer & Wood, 2013) and enhanced partnerships between community colleges and B.S.-granting institutions are necessary (Jackson, Starobin & Laanan, 2013).

[2] Latinx is a gender-neutral or non-binary alternative to Latino or Latina and is used by organizations including Teach for America (e.g., Latinx Alliances) & the Centers for Disease Control (e.g., National Latinx AIDS Awareness Day).

Table 1: ENGAGE Project Objectives & Plans

	Objective	**Plan**
1	Increase the retention, student success, transfer, and graduation of low-income academically talented students with demonstrated financial need who begin their engineering education at Allan Hancock or Cuesta Colleges, transfer to Cal Poly, are retained in and graduate with a B.S. degree, and enter the STEM workforce or graduate program	For 100 ENGAGE program participants – *with the goal of institutionalizing effective activities* • Increase the 'transfer student capital' – a predictor of post-transfer GPA, a student's ability to cope with problems proactively, and higher levels of student satisfaction with academics and advising (Moser, 2014) – via program activities that are informed by Critical Race Theory (Saetermoe, *et al*, 2017) and remove or minimize economic barriers and support student development in five areas: 1) academic; 2) engineering transfer/career path; 3) personal, via Strengths and Growth-Mindset training from a Social Justice Perspective; 4) connection, at home institution and to Cal Poly [pre-transfer]; and 5) professional. Scholarships are provided during the 2-years pre-transfer, as identified via Calculus-ready status/enrollment, and the 2-years post-transfer.
SEE FIGURE 3: ENGAGE LOGIC MODEL (p. 5) FOR MEASURABLE SHORT-TERM OUTCOMES OF ACTIVITIES		
2	Advance understanding of strategies that affect recruitment, retention, transfer, student success, academic/career pathways, degree attainment, and entry to the STEM workforce or graduate programs, with a specific emphasis on low-income academically talented students with demonstrated financial need who begin their engineering education at a community college prior to transfer to a B.S.-granting institution	Advance understanding via two research strands: 1. Co-PI Almeida will utilize social network analysis (Borgatti & Ofem, 2010), survey methods, and qualitative interviewing to advance understanding of how ENGAGE activities focused on student personal development and the fostering of pre-transfer connections for community college students – at home institution & to Cal Poly – contribute to a) growth of student social networks; b) increase in student resilience, confidence, sense of community, and sense of belonging; and c) investigate whether growth in these areas is related to increased student retention, pre-transfer success, transfer, and post-transfer success (including at PWIs). 2. Co-PI Doig will integrate pre- and post-transfer ENGAGE students into existing research (NSF RI:EF 1738154) that utilizes surveys and interviews to advance understanding of student motivations and perceptions when choosing to participate in (or leave) co-curricular team projects in engineering. The integration of ENGAGE participants allows Doig to investigate whether decision-making factors are consistent for student groups at community colleges and B.S.-granting institutions and by entry point to engineering education at a 4-year+ institution (freshman vs. transfer).
3	Contribute to the implementation and effective evidence-based curricular and co-curricular activities for low-income academically talented students with demonstrated financial need who begin their engineering education at a community college prior to transfer to a B.S.-granting institution	Expand implementation of effective practices and create sustainable change: • Lead efforts to a) assess state of transfer at and across institutions; b) establish priorities and milestones to strengthen adoption of Aspen Institute essential transfer practices (Wyner, et al, 2016); and c) develop and implement a coordinated action plan to meet goals and increase communication/coordination at and between each institution. • Via diverse dissemination & engagement strategies, support the scaling of successful ENGAGE activities and essential transfer practices, including a) serving as a model for possible partnerships between other CCCs and CSUs, and b) demonstrating how highly selective, predominantly white B.S.-granting institutions can productively collaborate with and learn from public community colleges that are Hispanic-Serving Institutions to increase the success of academically-talented students with demonstrated financial need in STEM fields.

<table>
<tr><th>Inputs</th><th>Barriers</th><th>Activities</th><th>Outputs</th><th>Short-Term Outcomes</th><th>Aspirational Outcomes</th></tr>
<tr><td rowspan="4">Shared
NSF funding
Multi-year partnership to design & develop ENGAGE
Advisory Board (est.)
History of sustaining grant-funded initiatives
Established infrastructure to deliver academic and career support services</td><td>Economic Barriers limit student time available for:</td><td>Award scholarships</td><td>Students
Reduce hours worked
Increase hours for development</td><td rowspan="2">Students increase:
GPA
Expected academic & milestone progress
Rate of admission to B.S. granting institutions
Rate of entry to STEM workforce or graduate programs</td><td rowspan="5">Cal Poly College of Engineering students are:
Better prepared
Representative of regional & state diversity
Higher proportion of transfer students (esp. from AHC & Cuesta)
CP College of Engineering meets CSU Graduation Initiative 2025 goals:
Increases transfer 2-year, 3-year & 4-year graduation rates
Eliminates graduation gap for students from URM groups
Eliminates graduation gap for low-income students
The STEM workforce is:
Larger
Better prepared
Representative of regional & state diversity</td></tr>
<tr><td>(1) Academic Development</td><td>Provide tutoring & coaching</td><td>Students utilize academic support</td></tr>
<tr><td>(2) Engineering Path Development – Transfer/Career</td><td>Provide individualized advising</td><td>Students develop & follow individual transfer/ career path</td></tr>
<tr><td>(3) Personal Development</td><td>Provide Strengths- and Growth-Mindset Training from a Social Justice Persp.</td><td>Students understand & adopt Strengths- and Growth-Mindsets</td><td>Students increase:
Resilience
Confidence</td></tr>
<tr><td>(4) Connection Development</td><td>Connect students to
ENGAGE cohorts
Advisors & faculty
Cal Poly (pre-transfer) – engineering & cultural
Society of Hispanic Professional Engineers</td><td>Students connect to:
ENGAGE cohorts
Advisors & faculty
Cal Poly
Society of Hispanic Prof. Engineers</td><td>Students increase:
Sense of community
Sense of belonging</td></tr>
<tr><td rowspan="2">Allan Hancock
HSI > 50%
National Top 150 Comm. College
Cuesta
HSI > 33%
Cal Poly
Nationally ranked engineering programs
Learn by Doing
CSU & campus initiative to eliminate retention & graduation gaps</td><td>(5) Professional Development</td><td>Link students to
Shadowing, internships, undergraduate research
Cal Poly engineering clubs & opportunities (pre-transfer)</td><td>Students participate in:
Shadowing, internships, research
CP opportunities</td><td>Students increase:
Self-identity as an engineer
Self-efficacy</td></tr>
<tr><td>Institutional: Essential transfer practices (Aspen Institute, 2016) are present but not systemic or systematic</td><td>At each campus & across partnership –
Assemble core team
Assess state of transfer at & across institutions
Establish priorities and milestones to strengthen essential transfer practices
Present findings & recommendations to stakeholders & leaders at each campus
Develop coordinated action plan to increase adoption of essential transfer practices</td><td>At each campus & across partnership –
Implement coordinated action plans
Meet twice a year with ENGAGE Advisory Board to review progress and establish new goals to improve essential transfer practices</td><td>Each campus –
Increased adoption of essential transfer practices
Across the partnership –
Implementation of practices that support transfer and transfer students
Increase in communication and coordination between faculty, support professionals and leadership</td><td>Each campus
Prioritizes transfer student success – it becomes part of the regular operation and culture of each institution
Prioritizes collaborations with each other – “Engineering Neighbors”
Achieves additional progress towards systemic adoption of essential transfer practices</td></tr>
</table>

Figure 3: ENGAGE Logic Model

III. ENGAGE Scholarship & Program Model

Recruitment is currently underway for the first cohorts at Allan Hancock and Cuesta. Scholarships amounts are set as follows, with a maximum of $45,400/student ($7,700/year at Allan Hancock and Cuesta for up to 2 years; $10,000 at Cal Poly for up to 3 years). Scholarship funding is guided by our focus on pre-transfer, during transfer, and post-transfer stages and is provided during the 2-years prior to transfer as identified via Calculus-ready status and enrollment at AHC and Cuesta, and the 2 to 3 years post-transfer to Cal Poly (see Figure 2).

CC Yr 1 (if nec)	CC Yr 2 Fall	CC Yr 2 Spring	CC Yr 3 Fall	CC Yr 3 Spring	CP Yr 1 Fall	CP Yr 1 Winter	CP Yr 1 Spring	CP Yr 2 Fall	CP Yr 2 Winter	CP Yr 2 Spring	CP Yr 3 (if nec)
Not funded	*Funded*										
	Calculus I	Calculus II	Multivariable Calculus	Linear Algebra & Differential Equations							
	At AHC / Cuesta				**At Cal Poly**						

Figure 2: ENGAGE Scholarship Model

IV. Lessons Learned from Prior Projects & Research: Allan Hancock College and Cal Poly have served as the lead institution in five prior S-STEM projects. Lessons learned from these implementations are summarized in Table 2.

Table 2: Lessons Learned from Prior NSF S-STEM Support

Lessons Learned from Previous S-STEM awards	AHC	CP
An intentional recruitment strategy is necessary to identify students who can most benefit from S-STEM scholarship funding and related programmatic components.	x	x
For community colleges, it is difficult to recruit students with a high likelihood of success directly from high school – instead, recruit from existing CC students.	x	
Multiple year scholarships that are automatically renewed (assuming eligibility criteria are met) are more effective than one-year, one-time scholarships.		x
The provision of scholarship support alone does not sufficiently transform a student's educational experience when scholarship support is not combined with academic success and personal/professional development programs.	x	x
The intentional development of cohorts and community supports the wellbeing of students and contributes to student persistence/retention.	x	x
Partnership among different units within an institution allows for a coordinated effort to more effectively serve students and to build sustainability post-award.	x	x
Project design should produce results that inform the campus about how to better support student success by institutionalizing effective practices	x	x

The prior NSF S-STEM Program that has had the most impact on our development of the model for Strengths Training from a social justice perspective that we propose in this paper is a smaller cohort-based program called PEEPS (Program for Engineering Excellence for Partner Schools) focused on students who entered Cal Poly as freshman, are academically talented, low-income, and predominantly first-generation. The program is in its 5th year and of the original 14 students, 2 have graduated, 7 are on track to graduate in 2019, 3 will graduate in 2020 (one with a BS and MS) and 2 have left the university without degrees. This retention and graduation data parallels rates for the Cal Poly College of Engineering, as a whole.

"PEEPS" represents the idea of a "posse," "family" or "my peoples" – a group that supports and cares for one another. In addition to the financial support provided (up to $10,000/year for 4 or 5 years), being part of a cohort is central to the program's design – leading to the creation of two new courses (ENGR 101: Engineering Student Success and ENGR 301: Engineering Professional Success) and the development and testing of cohort-based class scheduling (for example, PEEPS students were scheduled into the same section of Calculus and Physics courses). Additional program components include proactive advising and social activities. These components were designed to build community, help strengthen student identities as engineers, provide support structures, and increase self-efficacy.

Although at a much smaller scale, what we have learned from PEEPS significantly informs the ENGAGE Program. For example, through individual interviews done with the PEEPS students in 2017 that were informed by and analyzed utilizing Yosso's (2005) Community Cultural Wealth model (Singer, *et al*, 2018), we found that PEEPS students identified the positive role of both the financial support and the value of the cohort. These helped students navigate a predominantly white institution (Navigational Capital), provided a smoother transition into university life (Social Capital), created social support (Social Capital). The interviews also revealed the motivational value of aspiring to make a social impact (Resistance Capital). (See also: Chen, *et al*, 2018; Chen, *et al*, 2017; Chen, *et al*, 2016; Liptow, *et al*, 2016; Schlemer, *et al*, 2018).

V. ENGAGE Program Activities Overview

Student participation in ENGAGE program activities (Table 3) a mandatory 3-part Strengths Training in their first funded semester, as well as 2 mandatory individual advising/path planning sessions per year (8 total). Additional innovative pre-transfer ENGAGE activities that are sustainable post award based on what we learn during implementation include: 1) Cal Poly Engineering Faculty Mentor pre- and post-transfer; 2) Cal Poly Engineering Club Participation pre-transfer; 3) Cal Poly STEM Outreach Participation pre-transfer and 4) Summer Employment via the Cal Poly EPIC Camp (Engineering Possibilities in College) pre-transfer. These programs components are designed to increase AHC/Cuesta student sense of community and of belonging at Cal Poly pre-transfer, as well as student self-identity as an engineer and self-efficacy.

Table 3: ENGAGE Activities Pre-Transfer, During Transfer, Post-Transfer – for a student in Cohort 1 receiving 4 years of scholarship support

	PRE-TRANSFER						POST-TRANSFER				
	DURING TRANSFER										
Activity	**Fall1**	**Spr1**	**Sum2**	**Fall2**	**Spr2**	**Sum3**	**Fall3**	**Spr3**	**Sum4**	**Fall4/5**	**Spr4/5**
Strengths Training – SJ Perspec.	REQ										
4-Course Calculus Series	REQ	REQ		REQ	REQ						
Individual Engineering Transfer/ Career Path Planning Session	REQ	REQ		REQ	REQ		REQ	REQ		REQ	REQ
Academic Coaching & Tutoring	x	x		x	x		x	x		x	x
Career Advising	x	x		x	x		x	x		x	x
Community College Faculty Mentor Meet-up (one-on-one)	x	x		x	x						
CP Faculty Mentor Meet-up	x	x		x	x		x	x		x	x
On-Campus ENGAGE Activities (Cohort-Building, Seminars, Workshops)	x	x		x	x		x	x		x	x
Cohort Field Trip to Cal Poly and/or Industry Site		x			x						
Apply to attend Society of Hispanic Professional Engineers Regional or National Convention		Reg.		Nat'l	Reg.		Nat'l	Reg.		Nat'l	Reg.
Pre-Transfer Engineering Club Participation at Cal Poly: Engineers Without Borders, Prototype Vehicles (PROVE) Laboratory, Cal Poly SHPE	x	x		x	x						
Pre-Transfer STEM Outreach Program Participation at Cal Poly via CESAME	x	x		x	x						
Pre-Transfer Employment as a Residential Advisor & Lab Assistant for the Cal Poly EPIC (Engineering Possibilities in College) Camp			x			x					
PolyCultural Weekend for Admitted Students of Color, First Generation, Low-Income					x						
CP Transfer Student Orientation						x					
Cross Cultural Experience during CP Week of Welcome							x				
Multicultural Engineering Program (MEP) Transfer Advising Program							x	x			

VI. Strengths Training Utilizing a Social Justice Perspective – Fall 2019 Implementation

This section provides more information about the planned implementation of the ENGAGE Strengths Training from a social justice perspective. We specifically draw from the model provided by Gardner & Toope's (2011) for integrating a social justice perspective into Strengths Training, which entails four "interconnected sets of practices":

1. **Recognizing students-in-context** by "drawing from students' economic, familial, community, and cultural contexts" (p. 93);
2. **Critically engaging strengths and positivity** by "viewing students as experts in their learning, being critical of narrow understandings of strengths, and being committed to using strengths and positivity to inform their practices" (p. 94);
3. **Nurturing democratic relations** by "fostering engagement of student voice, participation, leadership, and self-advocacy" (p. 95); and,
4. **Enacting creative and flexible pedagogies** via "a commitment to being flexible and to doing whatever works in the interests of students" (p. 96).

As described in the introduction, alongside Strengths Training, participants will engage in activities focused on power, privilege, and oppression – and Ethnic Studies frameworks to make visible and challenge educational inequities – to critically examine the intersections of their strengths with their social and cultural identities. The first goal of this combined training (detailed in Table 4) is to position students to adopt an assets-based understanding of themselves; to recognize the ways in which many of their anxieties are created by "the racist historical and institutional roots of educational inequality that persist today" (Saetermoe, et al, 2017); and to take individual and collective action to address these root causes and the institutions shaped by them. The second goal of this combined training is to position faculty and staff participants to provide mentorship via an assets-based framework that recognizes that student utilization of their strengths occurs within a particular sociopolitical context and positions faculty/staff mentors – as institutional actors – to create more equitable conditions at their institutions.

Table 4: Fall 2019 Strengths Training from a Social Justice Perspective

Time Period	Activity	Programming	Location
Aug 2019 (1-1.5 hrs)	Cuesta & AHC Site-Specific Meetings	• Introductions • Orientation • Overview of 2019-20	At Allan Hancock and at Cuesta College
Sept 2019 (2-3 hrs)	Training Session 1: Introduction to Strength-Based Training from a Social Justice Perspective	*Pre-workshop: Strengths Finder* • Introductions • Icebreaker & reflective activities to introduce asset/strengths-based frameworks and challenge deficit discourses • Individual and group exploration of student Top 5 Signature Themes & Barrier Labels • Campus Tour	At Cuesta College

Time Period	Activity	Programming	Location
Oct 2019 (2-3 hrs)	Training Session 2: Being Real – Developing & Utilizing Your Strengths in an Unjust World	*Pre-Workshop: Students research the demographics of their intended engineering majors/fields* Individual & group activities to explore • Power, privilege & marginalization • Individual, organizational & structural discrimination • Intersectionality & interlocking systems of oppression • Myths of meritocracy & colorblindness • Systemic inequities in higher education & STEM fields • How inequality shapes the development, understandings of, and abilities for individuals to utilize their strengths • Campus Tour	At Allan Hancock College
Nov 2019 (5-6 hrs)	Training Session 3: Claiming Your Strengths, Claiming Your Engineering Education	*Pre-Workshop: Students complete a 10-20 minute free-write focused on their strengths, anxieties, needs & goals* • Individual & group activities to develop assets-based strategies for naming, responding to, and managing pre-transfer anxieties, including those produced by "the racist historical and institutional roots of educational inequality that persist today" (Saetermoe, et al, 2017) • Mapping Your Transfer Process – including managing your finances • Panel: "Taking Action to Create Change – STEM Student Activists at Cal Poly" • One-on-one: Co-creating faculty mentoring plans based on student strengths, anxieties, needs & goals • Red-tag training (fundamental safety training so that students can utilize Cal Poly machine shops) • Campus Tour	At Cal Poly

VII. Faculty/Staff Mentor Participation

At the start of the program, pre-transfer students will be matched with a faculty mentor both at their community college and at Cal Poly. The mentoring program is designed so that pre-transfer students have at least one individual or small group interaction with both of their mentors each academic term. The participation of faculty and staff mentors is critical to the success of the ENGAGE Program – and it is clear that mentors must take seriously and be guided by the principles and frameworks of the Fall 2019 Strengths Training from a social justice perspective along with their own areas of technical expertise.

Recruitment is currently underway for the faculty mentors for the Fall 2019 cohort of students. Faculty/staff mentors will participate in Strengths Trainings from a social justice perspective in April/May 2019 and will be invited/expected to participate in the Fall 2019 student cohort trainings. We expect that two areas may pose challenges for some potential mentors: our commitments to 1) "[c]hallenging university policies and practices that disadvantage youth by failing to give them an active voice within the educational process" (Gardner & Toope, 2011, p. 96) and 2) analyzing STEM education and knowledge as a potential site of both anxiety and oppression. These areas will be addressed in the Spring 2019 mentor-only training and via coaching provided to mentors during the grant period.

VIII. After Fall 2019 – Support for Strengths Utilization from a Social Justice Perspective

Students and their faculty/staff mentors will participate in on-campus ENGAGE activities during each academic term. At least one meeting per term after Fall 2019 will focus on student utilization of their strengths, challenges/anxieties that have emerged, how to navigate those challenges/anxieties as an individual, and how we might take collective action to address the root of those challenges/anxieties. Individualized coaching and mentor/mentee coaching is also available via the ENGAGE Program. Students will be encouraged to keep reflective journals focused on their own experiences and observations with the principles and frameworks built into the Fall 2019 Strengths Training from a social justice perspective.

IX. Conclusion

Student anxieties are in large part caused by the historical and current inequities in our society, including our educational system. By implementing the Strengths Training from a social justice perspective, we aim to change the deficit narrative that blames students for inequitable outcomes and pervades the discourse, policies, and practices relating to historically marginalized students in higher education. In the process we hope to inspire ENGAGE students to take collective action by partnering with faculty/staff mentors and other institutional actors to make changes that will not only reduce anxiety, but also lead to more equitable outcomes for future low-income, first-generation college students. We will assess the effectiveness of the implementation of this training along with the other components of the ENGAGE program as part of the research and evaluation of the NSF grant, and will disseminate our findings and research outcomes via reports, presentations, and interactive scenario-based workshops for campus and California State University system stakeholders and other polytechnic PWIs throughout the nation.

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