

Highlights of Hispanic Serving Institutions STEM Grant, Fall 2018

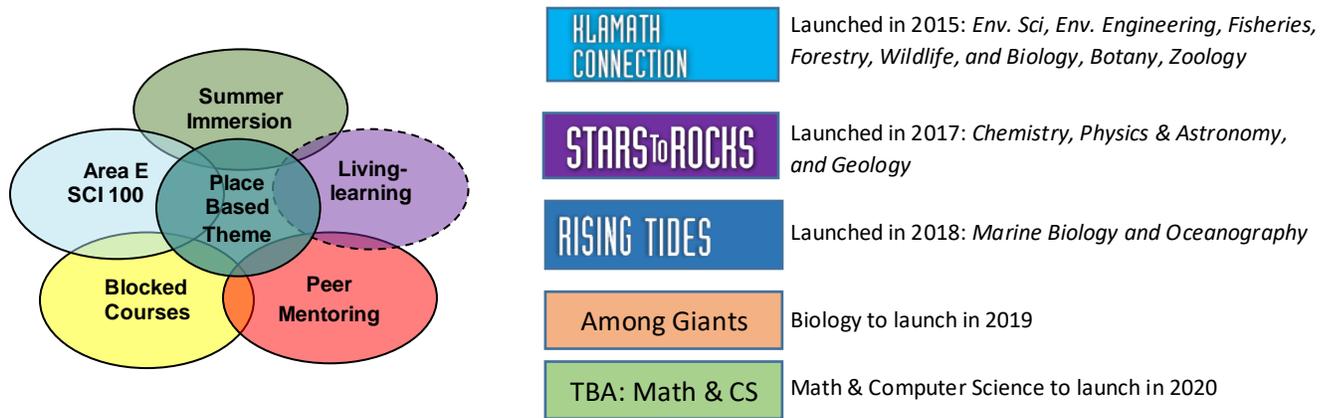
HSI STEM Full time staff: Sarah Bacio (Transfer Coord.), Lauren Enriquez (PBLC Cultural Coord.), Katlin Goldenberg (PBLC Director), Steven Margell (Lead Evaluator), Raven Palomera (Living-Learning Coord.), Nicole Ryks (Inclusivity Coord., HHMI grant). **PIs:** Matt Johnson (Wildlife) and Amy Sprowles (Biology).

Student assistants: Since start of grant, 28 students hired and collectively paid over \$20,000.

Four Components of HSI STEM

1. Place-based Learning Communities (PBLCs)

Cohorts of first-year students; Five High Impact Practices Integrated with a Place-Based Theme



PBLCs will be available to all 1st yr STEM students by 2020 (some students may opt-out)



Evidence that PBLC students have improved sense of belonging and academic achievement

Analysis of three Klamath Connection cohorts involved comparison of 250 KC students to 450 matched non-KC students (matched on STEM major, high school GPA, Hispanic, First-Gen, Math preparedness, and AP units). **What follows specifically compares outcomes for Hispanic KC students and Hispanic non-KC students;** similar patterns exist for all students of color and for all students overall:

- *Stronger sense of belonging (composite Mapworks score of 10 factors of 'belonging & community'; 5.49 vs. 5.31)*
- *More units earned (27.8 vs. 24.3)*
- *Higher 1st year GPAs (2.85 vs. 2.65)*
- *Higher rates of Gateway course completion (especially in Bot, Chem, and Math 113)*
- *Higher 1st year retention at HSU (81% vs. 73%) and in STEM specifically (78% vs. 65%)*
- *Eliminated gap in STEM retention between Hispanic students and their non-Hispanic counterparts in KC*

Stars to Rocks and Rising Tides are "opt-out" programs (= no reference group); analyses will involve year comparisons with pre-PBLC data

2. Expanded Tutoring Services

The grant helped fund a remodel of the Learning Center on the 1st floor of the Library and the expansion of free tutoring, prompting and increased in use by ~5000 hours (+48%). Multivariate analyses indicate that students who visit the Learning Center earn, on average, +0.16 grade points higher in their tutored course, even after accounting for other important factors (esp. high school GPA). However, more should use the Learning Center; currently only 24% of students visit it.

3. New Pathways for Transfer Students

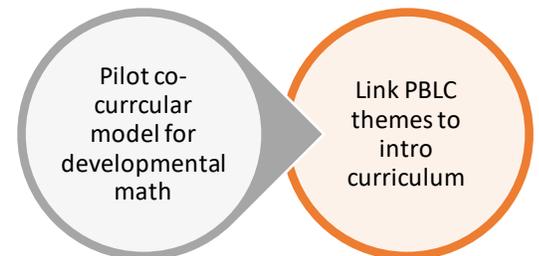
The grant is funded new pilot programs aimed to improve the pathway for students coming from junior colleges to HSU STEM. We have three partner Hispanic-serving 2-year colleges: Santa Rosa JC, Reedley Coll., and Palomar Coll. Four new STEM Transfer Ambassadors (right) are piloting new work with incoming transfers from the partner colleges. New activities include recruiting, clarify pre-requisites, and new support for transfers once they have arrived:

- HSU Transfer Coordinator (Sarah Bacio) will visit students & counselors at each 2-year college.
- Outreach to prospective transfer students
- Transfer success SkillShops
- Peer mentoring



4. Reformed Math Instruction

- The grant's work provided an opportunity to pilot some revised first year math instruction. Students in the PBLCs were encouraged to use ALEKS® online software over the summer to potentially 'move up' in math readiness. Over two summers, 48% of PBLC students took ALEKS®, of them 42% moved up, and on average the moved up students performed as well or better than students who placed into those courses directly. PBLC students who still had developmental math needs were placed into a **"co-curricular" model** by enrolling in a college-ready algebra *and* a revised pilot math 43. This pilot shortened the pathway to calculus for single math remediation students (from 2 semesters to 1), and preliminary evidence suggests it increased the success of these students on their pathway to be calculus ready (46% to 64%). This pilot work coincided with a Chancellor's executive order to eliminate remediation courses, and a new co-curricular model built in part from this pilot is now available for all incoming students in fall 2018.
- Sonja Manor is leading the development of **curriculum to link the place-based themes of each CNRS PBLC with one existing learning objective in Math 101**. She has written three different math lectures and assignments that will be piloted in Math 101 this coming fall. The hope is that by deliberately integrating the relevance of basic math concepts to pressing scientific, environmental, and civic issues, students will see the relevance in mastering the material.



Insights into the Student Experience

While the evidence on the page one suggests the heightened sense of academic belonging and curricular reforms prompted by new programs are leading to positive academic outcomes, these supports cannot guarantee an inclusive learning environment, one that prohibits anyone from being disadvantaged or unjustly treated because of social identity or status. This past year three HIS STEM Student Representatives spent time gathering information from HSU students and student support staff. Their testimonies remind us that students continue to face institutional barriers to their success – at the university, in the classroom, among their peers, and within the greater Humboldt community. Moreover, many current students on campus were not part of a PBLC and are not feeling the benefits of being in a PBLC and attending a Hispanic-serving institution. **We need to work harder** to accelerate our transition from a Hispanic-enrolling institution (our current state), to a truly Hispanic-serving institution (our responsibility), and on to a Hispanic-thriving institution (our ambition). We also need to ensure all underrepresented students feel supported on our campus. HSI STEM will continue to work with partners on and off campus to achieve this goal. Companion work enabled by the Howard Hughes Medical Institute (HHMI) Inclusive Excellence Grant is also contributing to this important effort by offering faculty training and professional development in the area of culturally inclusive pedagogy.