

CREATING AN INCLUSIVE HOME OF STEM AT PSU

AN ACTION-ORIENTED GUIDE
FOR ACTIVATING RACIAL
EQUITY AND SOCIAL JUSTICE
IN STEM DESIGN AND
PLACEMAKING AT PSU



OUR APPROACH

How we design and build space matters. To disrupt past practices that have perpetuated structural racism and other inequities on our campus, PSU is using a critical race theory-informed approach to shape the design and placemaking of the new Vernier Science Center (VSC).

As part of the engagement and inquiry process, we hosted a series of dialogue sessions with Black, Indigenous and People of Color (BIPOC) campus and community stakeholders, including faculty, staff, students, alumni, and community partners. We also invited students participating in PSU's summer bridge program to complete a socio-spatial survey. Dialogue sessions and the survey invited participants to explore the relationships between space, race, and equity in STEM education.

The BIPOC student-led VSC Engagement and Inquiry Team analyzed findings to create an action-oriented guide for STEM Design and Placemaking. The seven spatial aspirations presented here reflect key insights generated from stories shared by communities most impacted by educational inequities. Spatial aspirations offer a way to activate design and placemaking in service to racial equity and social justice.

This guide is not a checklist. It reflects a process-oriented effort that engaged local BIPOC communities in conversations situated in a particular socio-spatial context. It serves as a testament to process, not a recipe that can be simply adapted to meet the needs and hopes of BIPOC communities in other spaces, places, and projects. To support equity-centered community design approaches, the process of inclusive outreach and authentic engagement is just as important as the outcome.

VSC COMMUNITY ENGAGEMENT AND INQUIRY TEAM

Amara H. Pérez (CRT Consultant)

Derrick McDonald (Lead Student, Architecture)

Natalie Faye Amay (Student, Advertising)

Raven Harmon (Student, Health Studies)

Wiwini Hartini (Alum, Electrical Engineering '20)

Sara Herrejon Chavez (Alum, Environmental Studies '21)

Chris Molinar (Student, Architecture)

Trish Nicolson (Graduate Student, Counseling)

Malcolm Peavy (Student, Biology)

Naomi Rodriguez (Student, Environmental Science)

Athena Shepherd (Graduate Student, Architecture)

Motutama Sipelii (Alum, Health Studies '21)

Ben Steward (Student, Indigenous Nations and Native American Studies)

Abie Valenzuela (Student, Environmental Science)

Todd Rosenstiel (Dean, College of Liberal Arts and Sciences)

Suzanne Estes (Interim Associate Dean, Undergraduate Engagement)

Cristina Rojas (Communications Manager, College of Liberal Arts and Sciences)

Annie Lindgren (Assistant Research Professor, Biology; Director, Center for Life in Extreme Environments)

Michael Tingley (Principal, Bora Architects)

Becca Cavell (Associate Principal, Bora Architects)

SUMMARY

Spatial Aspiration: Welcoming and safe STEM/educational space ...	What it might feel like for a BIPOC person
Represents and Reflects BIPOC Cultures and Contributions	<i>I belong here.</i>
Opens and Promotes Access and Inclusion	<i>I can navigate here.</i>
Supports Life, Work, School Balance	<i>I can take care of myself here.</i>
Acknowledges and Honors Relationships with Nature	<i>I feel connected here.</i>
Encourages and Cultivates Autonomy and Collaboration	<i>I can be myself here.</i>
Adapts and Accommodates for User-based Placemaking	<i>I can create space here.</i>
Engages BIPOC Students and Other Communities in Design and Placemaking Processes	<i>I feel heard here.</i>

REPRESENTS AND REFLECTS BIPOC CULTURES AND CONTRIBUTIONS

I belong here.

PARTICIPANT VOICES:

- "Space of both safety and kind of a space for students to engage with their cultural experiences as well as academic experiences was our Native American Student and Community Center. I think they do a very good job space-wise of trying to disrupt whiteness and bring in different communities in that space. There is a children's area that has books and toys. There's a kitchen that community members use for different events, and a big visual when you walk into the Native Center, you see tribal flags. That was one of the first spaces on campus that felt different to me and felt safe."
- "Something that would be useful is having people who represent your affinity group or your peer groups, come and show themselves as experts. So maybe organizing events, intentionally inviting people that represent BIPOC groups and showing by example that people that can be experts in a particular field belong to a particular affinity group you belong to. I think that would be useful and maybe allow the students to feel that they can also be in those positions of power or in a position where they can actually share knowledge and things, because often minorities are stigmatized to holding certain types of jobs."
- "I think that alienation in that inability to create community was detrimental to education. I couldn't be my true self just because you weren't even allowed to express yourself. In the engineering building, I understood where that style, that minimalistic industrial style that they wanted to portray came from. But I wished they had more color, warm materials and art pieces - not just saying, White males who contributed to engineering and science. There are different cultures, there are different individuals, very diverse people who made some wonderful discoveries in the fields that we have now."

REPRESENTS AND REFLECTS BIPOC CULTURES AND CONTRIBUTIONS

- "I tend to gravitate when it's a BIPOC person in the showcase. It's like, 'Who is this? What are they doing? What have they done?' I think in this new science building, what could be really cool is having something along those lines where you can highlight and uplift BIPOC stories, whether it's students, faculty in that science building, to show that they're doing these kinds of research or they're interested in learning. I think that could be very welcoming and a very easy place to rotate and have new features and more visual appeal because we've got the artwork and we've talked about color. I think it'll be cool to highlight the students and faculty doing cool stuff in our building."
- "I would definitely say murals, artwork is one way to represent. I would even go so far as to say in the space, what kind of carpet are you laying down? Meaning what does the pattern look like? Is it Kente cloth? Does it reflect hieroglyphic figures? Is it reflective of certain images or sacred geometric shapes, that are akin to students of color, and highlighting the sacredness behind that geometry? Instead of a student seeing a square, a triangle, or a pyramid. Highlight what is the sacredness behind that for the indigenous and ancient cultures that utilize those to uplift their civilizations on a number of levels, spiritually, intellectually. Those are some ways I would see representation, murals, artwork, and even posters can be reflective and representative of BIPOC cultural, racial, and ethnic knowledge."
- "Design architecture dominates or reinforces this white dominant culture that we live in. There is so much diversity in buildings, and architecture, and colors, and themes. They don't have anything from my culture or the things that I grew up in and around. The only time I saw that was at a special event, at a Latino night. It was really hard to go around campus and feel like it was actually representing. New spaces could incorporate those warm elements, as I like to say, because they have color. They have curves. They're not sharp angles. And the music, we can have music in the background all the time."
- "Incorporate art work, books, and murals. I will say most spaces I occupy now reflect BIPOC cultural, racial, ethnic knowledge."

REPRESENTS AND REFLECTS BIPOC CULTURES AND CONTRIBUTIONS

- "Spaces that supported my identity because it was the only space on campus I could do some things like Smudging for example, which is frowned upon or outright not allowed in spaces on campus outside of the NASCC. Having culturally relevant foods was also something that was not possible outside of the space. This also seemed to be the only space on campus that recognized the diversity of Native experience and understanding that we are not monolithic. It became a space for me to engage and advance my own tribal identity while learning about others."

IDEAS AND POSSIBILITIES:

- Art, cultural events, space for gathering, tribal and other nation flags, pride flags, murals, visual and performance art, family- and children-friendly space, displays of BIPOC scholars, spaces for smudging, spatial racial micro-affirmations, intergenerational, music, color, circle methodology

OPENS AND PROMOTES ACCESS AND INCLUSION

I can navigate here.

PARTICIPANT VOICES:

- "Creating space for students to help digest all the information they've learned. I really enjoyed having a place to have conversations with my peers that weren't white dominated and being able to unpack things in a different/non-dominant way."
- "The Multicultural Student Center was the only space on campus with BIPOC leadership. It had a fridge that had cultural foods that were familiar and available for students, It had a computer lab which was a huge help for me as I couldn't afford a computer when I was a student. I could walk over to my scholarship coordinator's office when I needed anything which meant so much to me and my friends."
- "A space in college where I and my fellow classmates felt safe to be our authentic self was during the S-Stem program. We all shared a similar socioeconomic background and had a wide ethnic representation. The professors in the program chatted with us casually and we would go to grab a bite or a drink together. Really helped normalize approaching professors for me. Another place was the Multicultural Center, just the openness of the space and being able to walk in and take a seat to join a community experience."
- "We had our own designated space in LSAMP where we really could unwind and feel safe and relate to each other. We had support, inclusion, emotional release and even a space to have time out."
- "We had a commuter lounge, and inherently the common identity of not having money to live on campus brought in a diverse group of students. With that experience, it made me really feel safe in that space because I didn't have to be hyper-conscious of my social identities. I could really lean into what my personal identities were, what my interests were, because being Black wasn't my personality. We could find common ground and have those conversations and not always feel like you're in a fight for resources and mic time and things like that to really advocate for what you need, because there was a common understanding that we, as commuters, needed more support in that identity."

OPENS AND PROMOTES ACCESS AND INCLUSION

- "I think there is a need for spaces for students to be able to identify, for them to be able to go and have someone or groups of people who understand their shared experiences without having to ask a whole lot of questions to just understand."
- "Making spaces for the many different ways to learn and study and building-in those resources into a space, whether that be a digital Blackboard or access to the internet for video purposes. Having all these pre-built resources that we don't find out about."
- "I think some of the magic behind why LSAMP had worked so well and helped so many of us is, they had so many resources involved with that space."
- "A virtual lending library, where if you create documents for studies, you can leave them there. Just like letting go of the ownership of these things and making sure that everyone has access to them."
- "Multicultural resource center - open friendly space where I didn't have to worry about being myself or being accepted."
- Among survey respondents, financial insecurity was identified as a major barrier to student success
- Among survey respondents planning to take a science class, access to shared resources, a peer community, and space to collaborate were identified as most helpful in supporting science learning
- Among survey respondents, lack of power outlets was identified as a barrier to learning and well-being
- 68% of survey respondents indicated an interest in utilizing identity-based resources

IDEAS AND POSSIBILITIES:

- Access to textbooks, lending library, wayfinding, shared resources, welcome center, technology, outlets, internet, printer, computer, educational kiosks, visible and central affinity spaces and identity-based program, culturally affirming student services, ID cards as keys to access spaces, protected affinity spaces with auto access for BIPOC students, non-hierarchical spaces

SUPPORTS LIFE, WORK, SCHOOL BALANCE

I can take care of myself here.

PARTICIPANT VOICES:

- "I work in the engineering building and oftentimes the office is a place that students of color in engineering come. They came to hang out and study because we had a microwave. I think it's a small thing, but it's a critical thing. People need to eat, and I think that being able to support that conversation and collaboration you build relationships with that, you build study groups that way. I think food is really important."
- "A learning space with diverse and accessible options for food really helps with collaboration and relationships."
- "I really relate to the mental health needs of folks. I realized that there weren't spaces for people to go, who are having, not necessarily a crisis, but just a private space on campus where they could process without having to be exposed to their peers... to process heart feelings or just experiences from teachers. There was a lot of emotions and there wasn't really a safe space to process them."
- "It sounds like there's a lot of the possibility for this idea that you belong to a space. LSAMP was different. We all had key card access. One of the biggest differences, there was the cubby for you to sleep and later a couch. Just these little retreats for people to actually rest knowing that a lot of people had second jobs. A lot of people had kids, responsibilities and there was no place to rest. And if they actually had to go to class, try to do a full-time school schedule along with like all their other responsibilities, they had to commute these unbelievable amounts of time and they couldn't leave their stuff safely on the campus. We had lockers in LSAMP. We had the right to leave it there. No one would question us. I think making designated spaces for people who identify as BIPOC, making sure that they're automatically given access to the space, as opposed to asking for access to the space. Just making onboarding a lot simpler and making sure that you ask them about their other responsibilities so you can cater to those needs. And I really do think small things like a place to sleep, a place to keep your food, because we all can't afford the food on campus. Just all those little elements added up to feeling welcomed."

SUPPORTS LIFE, WORK, SCHOOL BALANCE

- "Making sure communal sharing of food is tolerated. Sometimes there are bans on food in campus spaces."
- "I was just thinking, being allowed to eat in the space, if this is how people socialize and have community, I feel like you kind of have to have it."
- "Food is another form of representation."
- "I have a couch and snacks in my office. Many students and staff drop by to get a snack or to come and just relax on the couch."
- "Money was always an issue in college so it was nice that there were resources at LSAMP and there was an assumption that you would bring your own things. It was nice to have everything you need. There was a little fridge and a coffee maker. It was kind of understood it was a 24/7 space. We would be there on the weekends. We would be there super late at night studying. We would be taking naps on the couch. That was like a second home, a combination of the people and the physical space."
- Among survey respondents, limited time to balance school and work was identified as a major barrier to student success

IDEAS AND POSSIBILITIES:

- Food pantry, resources to store, prepare, and share food, microwaves, refrigerator, hot water tap, spaces and furniture to rest, eat, nap, socialize, study, and contemplate, health care space; space for emotional safety and wellness

ACKNOWLEDGES AND HONORS RELATIONSHIPS WITH NATURE

I feel connected here.

PARTICIPANT VOICES:

- "I remember anytime I went to the library, I always wanted to be by the windows because it made me feel that I wasn't isolated. Having windows or being near windows and being able to see what's going on outside, made me feel okay. When it's possible, make sure people have access to nature, even if they are indoors."
- "I really loved being able to have plants and herbs and medicines around a space, or in a space. I think that's something that's really important to the cultural and racial and ethnic knowledge systems that I've been a part of in the higher education spaces."
- "Eco-friendly materials and native greenery, acknowledging indigenous ways of living and the land we live from. Reflecting BIPOC contributions to the world and learning."
- "BIPOC cultural, racial, ethnic knowledge could be welcomed and represented in spaces with: native greenery, rainwater usage, eco-friendly & natural materials, composting, assistive technology, supporting all ways of learning, plentiful collaborative spaces, comfortable furniture, warm and relaxing colors, art from BIPOC and BIPOC contributions to field represented. Family friendly spaces for non-traditional students with families - some cultures highly value family."
- "There's a lot of limits to how much sunlight you get in traditional classrooms, how much nature you can actually see when you're in these spaces. I felt very much like I was kind of just a robot, going through all the materials that I had to go through."
- "Spaces to rest, spaces to find snacks or keep food, spaces to take a short walk outside where there were plants, flowers and outside art with descriptions. Unique seating spaces that were peaceful near running water."
- "I'm thinking about sterility, and whatever is the opposite of that. It's elements of the natural world, or something that feels like home. The big, wide open, gleaming types of spaces to me that invite feeling comfortable and at ease."

ACKNOWLEDGES AND HONORS RELATIONSHIPS WITH NATURE

- "I think it's the new business building, they have that green roof outside and they have all those chairs that you can move around the tables. Portland gets so dreary, so when it is sunny, I feel like everyone and anyone who can get out there will try to get some sun rays and that always is a big mood booster between classes or waiting for a bus or the max or something. Having any outdoor space in the science building, whether it's a balcony or a green roof, it's super dope."
- "There is such a thing as 'building sickness.' Use of fluorescent lighting has been a big hindrance to my well being. The use of those lights and the types of air ventilation or lack of can affect student/faculty health."
- Among survey respondents, lack of natural light and ability to see outside was identified as a barrier to learning and well-being

IDEAS AND POSSIBILITIES:

- Natural light, color, windows, warm materials, greenery and rainwater usage, view of outdoors, plants, circles, usable outdoor space

ENCOURAGES AND CULTIVATES AUTONOMY AND COLLABORATION

I can be myself here.

PARTICIPANT VOICES:

- "In one department, they have a beautiful lounge and people just hang out there and stay there talking. That fosters collaboration, meeting your colleagues, spending time with other people. I think having spaces where you want to spend time talking and enjoying a coffee and taking a break off work, they're essential, not only for people of color, for everybody."
- "This concept of openness has always been nice. It's almost like these housing floor plans, when you have an open floor plan, something about being able to walk into an open space and then just visually decide where you want to occupy that space provides a great level of comfort."
- "It was very difficult to find spaces in the engineering building to just sit down and study or talk to people. There were few places where spontaneous collaboration was encouraged. The sterility of the environment felt alienating."
- "Having a very well-designed environment can make a huge difference in somebody's feelings towards school and being there with others. Open areas that promoted people working together and collaborating made such a huge difference because it was very inclusive and it didn't really matter who you were because we were all math students trying to just sort of get through the journey. It really helped everybody feel a lot more engaged and involved in what we were doing and kind of helped instill a feeling of importance of us being there. It made a huge difference for a lot of us that were going through that process and the struggle together."
- "I feel like a lot of BIPOC really want kind of nooks and crannies for us to have private conversations and collaborations. And from an architectural standpoint, I feel like that's a very big thing in how we design spaces. Very wide-open spaces for visual impact or sleek clean lines is not thoughtful of the human elements of the people who will use that space because, I'm not going to have a very loud conversation in a place that looks like a museum."

ENCOURAGES AND CULTIVATES AUTONOMY AND COLLABORATION

- "Talking about cross functional buildings or collaborative areas, we have two in-hall academic success centers, so we can bring academic support to the buildings where our students live. And we try to make a conscious effort to reach out to campus partners to have them be present in our spaces so they can build rapport with those students so the students can have access to them. Everyone doesn't want to walk over the cement, or over to FMH, so how can we bring those services to the student? I think that just having more spaces, not saying that ours is the premiere space, but more space where people can come in, see our students in their home, and be a part of that part of their development, I think is always really good."
- "I was trying to think of places in my mind in which I feel as if cultivated that sense of community, and I keep thinking about plazas and parks, those kinds of things, in which it's okay to congregate. Usually in traditional buildings you go in there might be like a gatekeeper, a counter that's where you swipe your badge or do whatever. But if there's an opportunity to think of what it looks like to make a science building feel like a community plaza, I don't know how that looks like, but that was what I was trying to think of in my mind."
- "Departments feel like silos so a place that feels interdisciplinary at its core, that fosters these interactions between peers could be a place where, things like colloquia are held from different departments, in a more centralized location, so people who may not have otherwise gotten access to cool science in another field. Places where we could just do cross talk and cross pollinate ideas and discussions."
- 67% of survey respondents stated it was important to encourage interaction across majors and disciplines

IDEAS AND POSSIBILITIES:

- Diverse types of spaces, community plaza, spaces to rest, eat, nap, socialize, study and contemplate, private and quiet spaces, nooks, crannies and open spaces, circle tables, multipurpose rooms, circular classrooms, couches, spaces where you are not exposed and do not feel surveilled, encourages interaction across majors and disciplines

ADAPTS AND ACCOMMODATES FOR USER-BASED PLACEMAKING

I can create space here.

PARTICIPANT VOICES:

- "We have a little pop-up space that allows us to create any pop-up activity that we want, which also builds community. It also allows us to have functions and mixers and things like that, which allows people to come in and build community and feel comfortable around each other."
- "I'm thinking about uniformity and just meeting a diversity of types of spaces. A typical university classroom or setting feels really big, really open in and of itself and can be a little bit intimidating. Having options if you are feeling in a collaborative mood or if you need to be on your own, I would love to see classrooms and or settings that have a diversity of ways of being and existing. One of the things we learn a lot about in preschool and youth development is the classroom is the third teacher and how important it is for shaping identity and how they think of themselves as learners. I would just love to see more diversity in individual spaces, having classrooms or spaces that have all different ways of being, both physically and mentally."
- "I went to grad school, there was a place that had probably 10 or 15 multi-use conference rooms. That was so useful. It was such a great space to be able to have meetings with people, and a really great opportunity for decoration for being able to incorporate a multi-use place. But what was just amazing about those spaces is they didn't need to be reserved; anybody could just go in and get a conference room, and I thought that was a very welcoming space and had a lot of opportunity for representation and identity."
- "Something that's movable. Something that is not assigned to a certain area or looks out of place very easily if it is not in the exact space that it was planned to be. Where you can just scoop the chair around, scoop the tables and the chairs, or the big floor pillow sorts of deals, those sorts of things."
- "I learn collaboratively so small table discussions were important and were encouraged in more flexible classrooms where the seating was not tied down."

ADAPTS AND ACCOMMODATES FOR USER-BASED PLACEMAKING

- "Circular formations, non-static spaces that can be moved to fit needs of students and instructor"
- "Temperature has always fluctuated. It's either too cold or too hot. I don't know maybe the ability to have more control over temperature for the people who use the spaces instead of having to go through facilities."
- "Study spaces with a whiteboard and markers aided me as a tactile learner. Representation of my learning modality made me feel prepared for the moment. I didn't have to use up my supplies and rip papers out of my notebook to learn something."
- "I am a kinetic learner so labs were very important to be able to learn and understand a subject. I also learn collaboratively so small table discussions were important and were encouraged in more flexible classrooms where the seating was not tied down."

IDEAS AND POSSIBILITIES:

- Flexible, adaptable, moveable and impermanent, ability to decorate, reflect and represent students, interactive, supports and honors spatial needs, bulletin boards, showcase spaces, temporary ownership, user control temp and light, supports pop-up spaces

ENGAGES BIPOC STUDENTS AND OTHER COMMUNITIES IN DESIGN & PLACEMAKING PROCESSES

I feel heard here.

PARTICIPANT VOICES:

- "I was around during certain policy changes. One thing that I remember was them wanting to turn the LCM space into a strictly study space and so being "loud" when it was just us having our conversations, was suddenly no longer welcomed. I remember just this general sense among the active members of the group like, what's going on. We weren't even consulted when these policy changes came into effect, so it just felt like something that was being imposed on us by the director. It is important that people feel good about decision-making."
- "Sit at the table even if uninvited. If decisions are being made it needs to include others in the process."
- "Little things of decorating and bringing up the representation of BIPOC population and just different aspects of the university could be delegated to the students themselves. And that could bring up not just collaboration, but also the feeling of belonging, that a lot of BIPOC students search for when we go out, and look for the spaces."
- "There needs to be an action plan for keeping the building fluid and dynamic after it's been designed and opened."
- "Where I went to college, there was an Association of Black Collegians office and student-control seemed pretty important to why the space was so welcoming because it could change as students changed over the years. We had a door and could have conversations among ourselves without outside interference or observation. We had the right to decorate it as we saw fit and post posters about activist causes we wanted to support. We had the right to schedule times for specific activities in the space. We had the ability to engage in our home cultural practices and exchange cultural practices across Black ethnic groups and sometimes also Latinx and Asian American students who were closely associated with us."

ENGAGES BIPOC STUDENTS AND OTHER COMMUNITIES IN DESIGN & PLACEMAKING PROCESSES

- "I think there has to be a lot of intention to how communities are being reflected in spaces and communities having a stake in that. So being invited to the conversation has value, not just throwing anything on the wall that looks colorful and looks like it came from a BIPOC community."
- "We had an office in the student center, where you could go and be there and not expect to have to deal with all that kind of crap on campus. And I think the student control of that space was actually pretty vital because, in the Black case, it is kind of specific because there's multiple ethnic groups and we have, in many cases, pretty different histories."
- "Every time there was a new cultural center there was such an issue with getting space. People are like, well, you're going to take space away from our fund-generating conferences and events spaces. So, what would be the plan if someone says, we need a new space, how will it be required? What's the process? How will it be equitable?"
- "It is important that people feel good in decision-making. I think that goes a long way."

IDEAS AND POSSIBILITIES:

- Making community centered design process transparent, communities most affected by educational and other social inequities involved in design and placemaking process